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Toward Transforming Health Systems: A Practice Study of Organizing and Practical Inquiry in Academic Medicine

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TOWARD TRANSFORMING HEALTH SYSTEMS:

A PRACTICE STUDY OF ORGANIZING AND PRACTICAL INQUIRY

IN ACADEMIC MEDICINE

THOMAS A. ELLISON

A DISSERTATION

Submitted to the Ph.D. in Leadership and Change Program

of Antioch University

in partial fulfillment

of the requirements for the degree of

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This is to certify that the Dissertation entitled:

TOWARD TRANSFORMING HEALTH SYSTEMS: A PRACTICE STUDY OF ORGANIZING AND PRACTICAL INQUIRY IN ACADEMIC MEDICINE

prepared by

Thomas A. Ellison

is approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Leadership and Change.

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I have received seemingly unlimited inspiration and support in my journey to explore my new professional pathway and new pathways for research and learning about the organizational side of professional life. The inspiration started with my work as a trustee at Westminster College, where many have been mobilized by the vision of former President Michael Bassis to change the work of faculty from merely teaching to delivering documented student learning outcomes. Michael introduced me to his lifelong mentor, Al Guskin, and his work to the address unsustainable cost model in higher education and develop a new student learning model for a Ph.D. in Leadership and Change. The very topics of this Program as well as its learning design were inspirational to me. In addition to being a patient and practical chair of my dissertation committee, Al Guskin has provided important advice and encouragement for matters both inside and outside of the Program for which I am very grateful. My other committee members Jon Wergin and Laura Morgan Roberts have had significant impacts on my learning throughout my time in the Program and also in shaping this dissertation, for which I am also grateful. I also have appreciated the diligence and contributions of William Plater as an external reader of this dissertation.

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methodology in my future work. I also appreciate the support of my law firm through this period of transition and the experiences I have been offered to be in leadership roles among professionals in practice. My learning over the past six years has been marked by a persistent interplay of theoretical work and my practical, sometimes frustrating, work as a practice group leader and firm strategist. This dissertation has been shaped by that interplay.

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Abstract

Transformation of health care systems will be grounded in new professional relations and collective, cross-disciplinary actions to impact care delivery. Organizing such relations and actions involves practical inquiry rather than applying professional knowledge. This dissertation presents an exploratory, performative study of the initial organizing of the Health Systems Innovation and Research (HSIR) Program in Health Sciences at the University of Utah. The HSIR program was conceived principally to catalyze cross-disciplinary innovation and health services research and enhance care delivery changes by documenting care improvements and publishing research. This study includes a composite narrative of the organizing and practical inquiry work of HSIR organizers, which highlights many questions, issues, possibilities, and priority shifts that would likely face those who would seek to transform care delivery and the cultures of academic medicine. The study identifies improvement, integration, and transformative strategies as pathways to effect change in health systems. The study includes a narrative-based analysis of cultural, dynamic, and narrative resources to enhance understanding of the HSIR story and the implications of cultural and dynamic influences for the Program's future and health systems transformation. This analysis emphasizes the cultural and dynamic influences of academic and clinical departments and other sources of dynamic influence that were operating to hinder or facilitate the larger objectives of HSIR organizers. The study also explores the significance of collective practical inquiry, exploratory inquiry, and culture change to the practice and theory of leadership and change. The HSIR study was conducted using a practice study methodology developed from practice and narrative theories, with contributions from complexity, process, learning, organizing, social construction, and relational theories and empirical studies of professionals undergoing change. The methodology recognizes an

expansive, relational complex of *practice* as the empirical world to be studied, and was designed

to explore practical inquiry, organizing, and collective actions of professionals in changing

organizational situations. Methodological design principles focus data collection and analysis on

situated activities, local discoveries, practical understandings, dynamic and cultural influences,

narrative connections, future possibilities, and significant matters identified by *practice*

participants. The electronic version of this dissertation is at Ohiolink ETD Center,

http://etd.ohiolink.edu and AURA, http://aura.antioch.edu/

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Preface

> In the terrain of professional practice, applied science and research-based technique occupy a critically important though limited territory, bounded on several sides by artistry. There are an art of problem framing, an art of implementation, and an art of improvisation—all necessary to mediate the use in practice of applied science and technique. (Schön, 1987, p. 13)

This dissertation explores the practical, collective actions of professionals who were organizing the new Health Systems Innovation and Research (HSIR) Program in Health Sciences at the University of Utah. The HSIR Program was formed to catalyze changes in health systems by developing cross-disciplinary health systems research of impactful innovations in health care delivery. Both the initial organizing of the HSIR Program itself and the pathways adopted by the Program to pursue health systems transformation provide examples of collective, non-technical, practical action and inquiry of professionals under conditions of uncertainty that fall within Schön's (1987) categories of artistry. The study of HSIR organizing was conducted using a practice study methodology I developed, which captures and presents the relational, cultural, dynamic, and narrative features of such practical action and inquiry and the implications of HSIR's work for its own future and for health systems transformation.

This study of HSIR organizing presents overlapping stories that may be approached by readers with interests in understanding health care transformation, the organizing of professionals, collective practical inquiry under uncertain conditions, or exploratory methodology; I offer this preface as a roadmap to the dissertation to allow readers to focus on one or more of those stories.

- For those interested in transforming health care, this study presents a story of creative, cross-disciplinary, collective action oriented toward addressing the practical

issues, challenges, and opportunities involved in changing health systems and academic medicine.

- As an exploration of the practical side of professional life, the study presents a story of HSIR organizing from the separate and changing perspectives of the organizers and other leaders in University of Utah Health Care as they developed new collective actions beyond the boundaries of typical professional knowledge and expertise.

- For those interested in understanding collective action under conditions of uncertainty, the study presents an account of collective practical and exploratory inquiry. As envisioned by John Dewey (1938), practical inquiry is a progressive process of problem setting and taking actions to change the conditions of doubtful, indeterminate situations to make them more holistically understandable and actionable. The study demonstrates the responsive actions of the HSIR organizers as they progressively identified key issues and questions, refined problems, and dealt with conflicts, dynamic influences, shifting priorities, and the effects of subcultures that hindered and facilitated certain of their actions.

- The study also provides an account of the practice study methodology I created for exploratory studies of collective professional action in *practice*. This methodology is concerned with developing a performative rather than conceptual account, emphasizing the practical activities and understandings of HSIR organizers over imported theories.

The Introduction (Chapter One): All of these stories are anchored in the Introduction, which identifies the research setting, covers some key concepts, and introduces the practice study methodology. While a professional practice is commonly thought of as a set of specialized

knowledge and skills applied by professionals, this study explores *practice* as a dynamic, cultural complex of relations among people, machines, types of knowledge, disciplines, traditions, routines, stories, organizational imperatives, and other conditions of the situations in which professionals operate. A study of *practice* considers all of the matters at issue or of significance in an emerging situation, including the cultural, dynamic, and narrative resources that are shaping collective action. Figures 1.1 and 1.2 in the Introduction and Table 2.1 presented in the literature review chapter offer a framework of dynamic influences that I developed to sensitize data collection and analysis. The Introduction also summarizes a narrative-based interpretative approach adopted for practice studies based on the work of Ricoeur (1981).

The "Building a Learning Health System" narrative: The stories of health care transformation, the organizing of professional life, and practical inquiry are anchored in the study's fourth chapter, titled "Building a Learning Health System," which is a composite narrative of the initial organizing of the HSIR Program. From a health care perspective, this chapter presents the gaps in performance, issues, questions, and transformative possibilities facing all of health care and academic medicine in particular. The narrative demonstrates the effects of uncertainties and also emergent features of the situation, including changing organizational priorities, conflicts, and opportunities. The narrative also documents how HSIR organizers responded to cultural and dynamic features of the situation and settled on a core set of activities that would constitute HSIR's *practice* of health systems research.

Health systems transformation: The prospects of the HSIR Program and its implications for health systems transformation are continuing topics of the fifth chapter, which applies the narrative-based interpretative method I developed for practice studies. In this chapter, I review the narrative logic of the HSIR organizing story and identify the implications of ongoing actions

and the cultural and dynamic resources evident in the "Building a Learning Health System" narrative. Certain cultural resources promoted HSIR's core purposes by enhancing collective understanding of the need and opportunities to change health systems through collective action; in contrast, other dynamic influences pushed HSIR organizers to avoid pathways (and anticipated conflicts) that could have mitigated the change-hindering influences of academic and clinical specialty "silos." I conclude that HSIR's ultimate success in building a learning health system and contributing to broad changes in health systems would require developing and pursuing strategies to integrate care and research and scale health care delivery improvements within University of Utah Health Care.

Organizing of professionals: The fifth chapter also discusses matters of practical significance to organizing and changing professional practices and health systems. These discussions emphasize the importance of local knowledge—the discoveries that arise while pursuing improvement or change projects—and the need to preserve and distribute examples of what works and does not work in implementing and scaling quality improvements. This chapter explores some possible elements of a cross-disciplinary integration strategy that may be employed in organizing changes to professional practices and health care delivery.

Practical and exploratory inquiry: The more general story of practical and exploratory inquiry is emphasized at the end of the fifth chapter and in the final chapter. The concluding section of the fifth chapter identifies various purposes of the practical inquiries undertaken by HSIR organizers and identifies two modes of exploratory inquiry: One mode of exploratory inquiry deals with integrating health services research with clinical improvements to build the scale of impact from HSIR's activities in the short term, and another involves developing transformative possibilities and commitments for long term system-level change. As developed

in the final chapter, exploratory inquiry is a creative, experimental process involving discovery-oriented activities that contrast with typical management activities, which are oriented to achieve operational predictability and control. For example, exploratory inquiry is provisional and emergent, rather than goal-oriented or plan-orchestrated; further, exploratory inquiry seeks to develop multiple pathways to have impact on health care delivery, rather than follow one course predetermined by analysis or executive direction. Table 6.1 in the final chapter offers some descriptive differences between typical management activities and the collective exploratory inquiry evident in the organizing of the HSIR Program.

The practice study methodology: For those who are interested in exploring the practice study methodology, the second chapter contains a literature review that develops the concept of *practice* and provides the conceptual tools that introduce the cultural, dynamic, and narrative resources identified in the HSIR study. These conceptual tools are based on theories relating to social practices, learning, practical inquiry, power, ideology, complexity, culture, and relational construction. The literature review presents a thematic analysis of empirical studies of professionals engaged in transforming significant aspects of practice and includes a discussion of narrative theories that are pertinent to the practice study methodology. The core of the methodology, including its design principles and techniques, is included in the methodology chapter.

Implications for leadership and change practice and theory: The final chapter presents my discoveries from this exploratory study of HSIR organizing and the study's implications for leadership and change practice and theory. My discoveries emphasize practical and exploratory inquiry and the importance of inquiry to develop new forms and pathways for collective action. The final chapter builds on the dynamic framework presented in Figure 1.2 in the Introduction

and Table 2.1 in the literature review to recommend key change-promoting activities to be enabled by leadership and change practice. I emphasize that practical and exploratory inquiries are essential to key leadership functions including building a learning organization, fostering integrating capabilities, and changing organizational culture. I conclude the chapter by presenting criteria to evaluate practice study research and suggesting how the principles and tools of the practice study methodology could be applied collectively by participants in a culture change process to develop new forms of collective action and change their collective culture.

Introduction

Despite wondrous advances in medicine and technology, health care regularly fails at the fundamental job of any business: to reliably deliver what its customers need. In the face of ever-increasing complexity, the hard work and best intentions of individual physicians can no longer guarantee efficient, high-quality care. Fixing health care will require a radical transformation, moving from a system organized around individual physicians to a team-based approach focused on patients. Doctors, of course, must be central players in the transformation: Any ambitious strategy that they do not embrace is doomed. (T. H. Lee & Cosgrove, 2014, p. 105)

Transformation of health care delivery and health systems will not be prescribed or

controlled from the top; rather, such transformation will be grounded in new professional

relations, collaborations, and understandings constructed through experiments to change

established patterns of care delivery. Those professionals who undertake to improve care

delivery or reduce its cost will encounter challenges that cannot be addressed by applying

knowledge, techniques, and skills from their respective medical or academic disciplines. These

challenges will present professional, organizational, and health systems questions that are not

commonly faced in everyday professional performances: How do professionals reorganize

health care delivery to respond to changing patient and organizational needs and requirements in

the contexts of deeply embedded professional and organizational routines and subcultures? How

do professionals engage with dynamic and emerging features of practice situations that may

facilitate or hinder desired professional, organizational, and system-level changes? How do

professionals resolve differing perspectives and conflicts to develop collective understandings,

meaning, and direction for new collaborative activities? How do professionals get into action

under conditions of uncertainty? These questions are relational and cultural rather than

technical: They are relational because they implicate the everyday relationships, interactions,

and patterns of care delivery; they are cultural because they challenge established routines and

assumptions grounded in technical competence and implicate the developing of new

understandings and meaning among professionals about matters that are at issue and of significance to the future of health care delivery. Health system transformation is not just an abstract ideal. Health system transformation will require tangible changes in professional activities, relations, interactions, and cultures embedded within health systems.

I am responding to calls (Bazzoli, Dyman, Burns, & Yap, 2004; Hoff & McCaffrey, 1996) for new forms of professional and organizational research pertinent to transforming health care delivery, organizations, and systems. The findings of Bazzoli et al.'s (2004) literature review of 101 studies of organizational change initiatives in health care companies illustrate the need for new research approaches—organizations demonstrated desired cost savings and administrative changes but failed to achieve desired clinical changes even years after initiating change processes. Bazzoli et al. (2004) urged the conclusion that existing gaps in knowledge about what works and what fails in implementing organizational change can only be filled by "long-term qualitative research and new primary data collection" (p. 322) identifying what actually gets done in organizational change processes and what does not work. New research concerning the practical collaborations of health care professionals and the discoveries from their change-oriented activities—the features and results of organizing activities—is required to address a key underlying question facing health care systems that must transform clinical practices and care delivery processes—how are collective, change-oriented efforts of health care professionals initiated and organized, as well as hindered or facilitated along the way? This general question orients my study of the initial organizing of the Health Systems Innovation and Research (*HSIR*) program in Health Sciences at the University of Utah.

HSIR is an effort in an academic medical complex to catalyze innovation in health care delivery and to expand the impact of innovative efforts through health systems research. What is

at stake in health care innovation and research is breaking the logic of the quality/cost, or value, problem that lies at the heart of professional and institutional life in education (Guskin & Marcy, 2003), law (MacEwen, 2013), and health care (Porter & Lee, 2013): In medicine, documented experiments in care delivery and patient outcome improvements must somehow act to supplant the traditional value proposition of physician-centered medical treatment—better equals more; historically, value has meant better treatment produced through more tests, procedures, and technology. Health systems must now be re-centered toward delivering value defined by new measures of patient, financial, and population outcomes; going forward value will require achieving better patient and total population health with less—fewer tests, fewer procedures, and lower costs.

Progressing toward new measures of value will challenge old ways of performing and organizing medical diagnoses and treatments. Achieving new professional, organizational, or system-level outcomes will require professionals to engage and collaborate across established academic and clinical disciplines; further, those professionals will need to grapple with new data and research designed to impact health care procedures, utilization, and costs while achieving new outcomes for patients and entire populations. Ultimately, these challenges of practically engaging professionals across boundaries and employing new data and research have a larger objective—the integrating of care across specialties, facilities, full care cycles, populations, and geographies.

Organizing to create tangible changes in health care delivery is an exploratory endeavor, and I have chosen to research this situation using an exploratory approach, which I call a *practice study methodology*. Rather than developing or validating concepts or theories, this methodology, developed from social practice and narrative theories, adopts a relational and

cultural perspective that emphasizes the practical performances and understandings of professionals as they organize to resolve issues of collective concern relating to health care delivery. The methodology seeks to identify matters of significance or at issue in the efforts of the organizers as well as the dynamic features of the situations they face that may be facilitating and hindering their desired results. The methodology also explores narrative connections, trajectories, and future possibilities as a way to present a more holistic interpretation of the developing understandings of HSIR organizers. I offer this practice study methodology to enhance the study and understanding of collective professional inquiry, organizing, and change-oriented action across a wide range of uncertain and changing situations.

The grounding of this study in the practical performances and understandings of practitioners flips the concerns of this study from those of typical professional, organizational, and systems research—a flip that prioritizes visible doings and performances rather than internalized mentalities and beliefs; a flip that emphasizes the practical activities and understandings of participants rather than imported theoretical perspectives; a flip that identifies ground-up activities that organize and construct new conditions rather than managerial prescriptions or leadership positions; a flip that takes an inside-out systems view rather than an outside-in perspective; and a flip that creates a dynamic, narrative take on an interesting situation rather than an analytic or conceptual snap shot of it.

Introducing the Health Systems Innovation and Research Program

The University of Utah houses the only academic medical center in the Intermountain West, which serves 10% of the land area in the continental United States. In a recent year, the scope of Health Sciences operations was illustrated by the numbers—over a dozen hospitals and clinics, 1,600 physicians, scientists, and investigators, 12,000 staff members, 6,000 students,

$230 million in research grants, $87 million in donations, over one million patient visits, and organizational complexity to match those numbers. Since 2011, Health Sciences have been under the leadership of Dr. Vivian Lee. Dr. Lee in fact holds three separate positions and titles that reflect her combined administrative, academic, and clinical role at the University—Senior Vice President of University Health Sciences, Dean of the School of Medicine, and CEO of University of Utah Hospitals and Clinics (UUHC). Although her position has been structured with integrative intent, the titles symbolize the independent cultures that develop within academic medicine in the different worlds of organizational management, teaching and research, and clinical care.

The organizational complexity of Health Sciences cannot be reduced to a description of its administrative, academic, and clinical structures and functions; complexity is generated in real time by interactions, relations, and functions within and across academic and clinical departments. Those structural, functional, relational, and interactive factors combine to achieve traditional objectives of academic medical centers: These objectives include delivering high quality patient care, directing the learning of the next generation of health services professionals, pursuing and publishing practice-influencing research, and building institutional capacities, resources, and reputation. This dynamic and interactive complexity is captured in the overlapping and developing storylines of health services professionals rather than in descriptions of processes they implement.

Increasingly the stories within academic medical centers are developing around innovation, cost reduction, patient-centered outcomes, community and population health, and the larger story of which these efforts are a part—transforming the health care delivery system. Innovation has been a major theme under Dr. Lee's tenure, notably including the roll-out of a

health services costing model called Value Driven Outcomes and a major effort to implement lean process improvements within clinical services. The Utah Health Sciences complex also houses an even longer legacy of innovation. Notable stories include basic scientific research resulting in a Nobel Prize for Dr. Mario Capecchi in genetics and the first artificial heart implanted in a human. Quality improvement initiatives and discoveries about the treatment of particular medical conditions have resulted in evidenced-based care process changes. Attention to patient outcomes has contributed to the restructuring of community-based care delivery. Each of these efforts has reflected collaboration across clinical, academic, and administrative functions. In Utah Health Sciences, collaborating with impact reflects an intersecting and changing of ongoing storylines. In turn, these new storylines change the significance of what has been accomplished in the past and open new possibilities for further innovation and research. The HSIR program inherits this storied legacy of patient-centered innovation and research that is changing the quality/cost balance.

The Health Systems Innovation and Research Program was created under the direction of Dr. Lee to catalyze and validate changes in clinical care delivery with health systems implications and to conduct new forms of outcomes assessment. Its title symbolizes the very rewriting of stories—an integration of innovation, research, and health care delivery impact that is required to transform health systems. The 2012 Proposal for a Center for Health System Innovation and Research (K. M. Bowman, personal communication, August 13, 2014) contemplated that a health systems innovation and research operation would conduct its affairs "in close collaboration with academic departments and University of Utah Health Care, including University of Utah Hospitals and Clinics (UUHC) and University of Utah Medical Group (UUMG)." The proposal made clear that HSIR organizers would face the challenges of a

fragmented organizational structure: HSIR would need to rely on the disciplinary and funding

resources of separate academic, clinical and research departments while being charged with

being a service provider to those departments. Further, HSIR had a clear mandate to create an

interdisciplinary operation while establishing its own independent financial sustainability and

credibility with respect to education, innovation, research, and driving clinical value through

UUHC and UUMG. The strategy for HSIR captured both the supporting and self-sustaining

requirements:

> To succeed, [HSIR] must become a sustainable and effective, cross-institutional resource
> that helps advance the University's clinical delivery system and outcomes assessment,
> while building robust, interdisciplinary collaboration for research and education. In so
> doing, it will build all our missions while taking particular advantage of our unique
> strengths as the only academic health center (AHC) in the Intermountain West. (K. M.
> Bowman, personal communication, August 13, 2014, p. 1)

The creation of the Health Systems Innovation and Research Program presents an

opportunity to explore the organizing activities of clinical and academic health professionals

oriented toward addressing health care system issues through care delivery innovation and

related research. The very organizing of HSIR presents practical challenges and uncertainties for

those professionals who are charged with reaching across established organizational,

professional, clinical, and academic silos to enable multidisciplinary innovation and impactful

health systems research. But the organizing of HSIR within a leading academic medical center

also presents a unique opportunity to develop a virtuous cycle of learning that both improves

health outcomes for current patients and creates an innovative, value-driven culture. Such a

learning-based culture may create long-term impacts on health care delivery through health

systems research and the teaching of a next generation of physicians.

I have documented the initial organizing of HSIR from its conception in 2012 to the fall

of 2014. This time period reflected how HSIR organizers initiated and pursued activities to

address issues and resolve problems they identified. Rather than reflecting a chronology, this research reports and comments on matters that were placed at issue and became significant as the organizing efforts proceeded. Rather than presenting a conceptual overview, this account builds upon the differing perspectives of the participants, actions taken and directions pursued to address issues, and the changing practical understandings of the participants that occurred during this period. Rather than a chronology of events, HSIR organizing presents developing stories about filling the practical gaps between performance and desired outcomes that are apparent in health care and further revealed by the work of professionals who are organizing toward transforming health care systems.

My Story and Positioning

This dissertation also presents an intersection of my personal story with those of Health Sciences and HSIR professionals. How did a real estate lawyer with 38 years of experience end up conducting research about organizing of HSIR? The short answer is that I am obsessed with understanding how change occurs or does not occur in the organizational life of professionals. In addition to practicing law, I have served my law firm as a firm, practice group, and strategy process leader. Over time, I have become aware of a persistent disconnect: While lawyers knowledgably operate and organize complex tasks and projects within their established professional disciplines, they responded less constructively to firm-wide messages about strategic and business development objectives. Firm-wide strategies did not connect well to the ongoing practice activities and values that gave significance to our ongoing careers as lawyers; stated in terms of what I mean by significance, law firm strategies actually were not meaningful and did not seem important to our day-to-day lives in practice. Decisions explained in the terms of business management theories were simply lost in translation—such theories used a different

language and frequently presupposed management hierarchies and control regimes that are inconsistent with typical professional values and our day-to-day practice experiences. These experiences led me to explore the gaps between organizational interests, management theories, and professional experience in Antioch University's Ph.D. in Leadership and Change program.

The gaps between organizational ambitions and lawyer action in my law firm raised larger questions with implications for institutions that organize professionals and their practices: How are new professional activities and cross-disciplinary efforts initiated and pursued so as to become integrated in ongoing practices? How should practices be organized to meet increasingly complex client requirements and changing organizational needs? How do professionals organize new activities under conditions of uncertainty? These practical questions led me to develop the practice study methodology introduced earlier. If I were interested in developing new research of practical use to professionals in changing or uncertain situations, I concluded I needed to take a hard look at methodology. I was looking for a methodology that would connect to the practical world and encourage practical analyses and understandings that might facilitate organizing and change rather than just to develop theories about how to do so. I was also looking for a situation to research where professionals were required to inquire and act collectively in uncertain conditions.

Framing a Study of the Health Systems Innovation and Research Program

The Health Systems Innovation and Research Program has been created in the context of growing calls for health care delivery transformation. But transformation is merely an abstract label waiting to be attached to demonstrable changes in practical activities, relationships, and interactions of health care professionals, and in the outcomes of their collective work. How should a study of their collective actions oriented toward change and their developing

understandings be framed and what may such a study contribute to our knowledge about professionals?

Practical inquiry and organizing—taking an inside-out view of health system transformation. Schön (1983, 1987) has recognized that professionals face ill-defined issues beyond the realms of professional competence in the ordinary course of their respective practices:

> Indeterminate zones of practice—uncertainty, uniqueness, and value conflict—escape the canons of technical rationality. When a problematic situation is uncertain, technical problem solving depends on the prior construction of a well-formed problem—which is not itself a technical task. When a practitioner recognizes a situation as unique, she cannot handle it solely by applying theories or techniques derived from her store of professional knowledge. And in situations of value conflict, there are not clear and self-consistent ends to guide the technical selection of means. It is just these indeterminate zones of practice, however, that practitioners and critical observers of the professions have come to see with increasing clarity over the past two decades as central to professional practice. . . . Public, radical, and professional critics voice a common complaint: that the most important areas of professional practice now lie beyond the conventional boundaries of professional competence. (Schön, 1987, pp. 6-7)

As noted earlier, professionals addressing health care delivery issues will be required to organize across boundaries, develop new data and research, and integrate care across specialties, facilities, care cycles, and populations. These professionals will face complexity, uncertainties, and value conflicts with respect to both means and ends. Professionals implementing the strategies will not merely deploy the analyses and implement plans derived from their disciplines; these professionals will need new cross-disciplinary and cross-functional interactions involving broader clinical, operational, and research concerns that are beyond the scope of typical health care professional activities and training.

When faced with the unique and problematic situations described by Schön (1987), professionals engage in the form of inquiry contemplated by Dewey (1938). Such situations may be confused, obscure, conflicting, or even unclear with respect to significance (Dewey, 1938,

pp. 106-107). Inquirers responding to such situations do not merely ask questions, but act to change the troubling elements of the situation. In Dewey's terms, such professionals engage in action that is both directed and transformative in a very practical way—they act so as to make the situation as a whole more sensible and amenable to further constructive action.[1] Importantly, any doubt that is experienced only exists in the conditions of the situation rather than the minds of inquirers; in turn, those inquirers act and experiment to construct new conditions and create coherent, holistic understandings about how to proceed. Using the language of design, Schön (1987) has described what design professionals do as the testing of moves within domains of situational features. Such domains are descriptive categories of the features professionals use in a specific situation to define the design problems they face and evaluate the overall coherence of their potential solutions.[2] Polanyi (1966) has observed that all new knowledge arises from an active integrating and shaping of experiences while pursuing new discoveries. He has asserted that artistic and scientific genius arises from the integrated understandings developed through knowledge-seeking activities (p. 6). Seeking discoveries is distinguished from application of existing knowledge. Scientists pursuing research can describe the conditions that give rise to scientific puzzles, but they seek new knowledge in the form of discoveries that are hidden, indeterminate, and merely suggested by available clues (pp. 23-25). Central to the art of a

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[1] Dewey (1938) stated: "*Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole*" (pp. 104-105).

[2] In the case of architectural design, such domains include building siting, slope, uses and functions, the organization of space, and cost, among others. By analogy, care delivery design problems faced by health care professionals may implicate design domains including using and organizing space, scheduling and using time-based outcomes, realigning supporting professionals, modifying existing procedures, dealing with the cultural and technical expectations of specialists, attending to cost factors, and addressing other features of situations involving health care that must be brought into coherence in modifying an aspect of health care delivery.

scientist is framing a problem in a unique way that drives discovery and produces coherence in the situation that cannot be attained through expert analysis (p. 21).

Dewey (1938), Schön (1987), and Polanyi (1966) have described a similar way that professionals including scientists address issues, identify problems, and test possible solutions in uncertain situations where known technical solutions are not available: Professionals identify the features and elements placed at issue or with special significance in such situations—the doubts, domains, or clues—and engage in progressive testing of ways so as to make the situation more holistically understandable and actionable—the discoveries. Experienced and expert professionals regularly apply the inquiring, designing, and discovering that Dewey, Schön, and Polanyi have described—identifying and changing the problematic aspects of a situation and creating a more coherent and actionable whole—in their respective fields to problems that are non-technical, unique, and obscure. In such cases, the shaping of their experiences in pursuit of relevant discoveries produces a more refined and integrated knowing identified by Polanyi that informs further practical action.

Professionals, however, also face problems involving even greater complexity and uncertainty: From time-to-time, professionals address new problems that not only are beyond the scope of typical professional expertise and experience, but which also require new collective action toward new collective outcomes. I sought to conduct a dissertation research study of professionals in situations involving issues beyond the range of available technical solutions and typical professional experience and also involving both uncertainty and collective action. These situations invoke a subset of Dewey's (1938) inquiring, Schön's (1987) designing, and Polanyi's (1966) discovering that I am labeling as organizing (Weick, 1979). Organizing occurs when problem setting and solving, inquiring, designing, and discovering by professionals meet the

following description—such activities occur under conditions of uncertainty, implicate collective concerns and potential conflicting interests of stakeholders, and require collective action on matters that transcend their technical capabilities and know-how. A study of such organizing is essentially inquiry about inquiry—inquiry into developing collective practical understandings created by inquiring practically under conditions of uncertainty.

Organizing within the relational and cultural complexes of practice. We commonly refer to professional skills, techniques, and routines in terms of professional practice. As commonly conceived, professional practices demonstrate the technical knowledge and skillful performances of individual professionals; further, such regularly performed activities provide sources of meaning and professional identities for those who are engaged in such practices (Schatzki, 1996, 2002). But, as previously noted, professionals who inquire and organize operate beyond the confines of professional technique and knowledge. Central to the concern of such activities is making discoveries that will help to develop new understandings and collaborative actions. For this reason, the study of inquiry and organizing cannot be limited to matters of typical professional education and training. A more expansive conception of professional practice is needed to identify a broader range of factors that may become significant to professionals engaged in inquiring and organizing, and that may influence and change collective understandings and established routines.[3]

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[3] This paragraph introduces questions of theoretical and empirical importance to professional life—if specialized knowledge and techniques of routine practices were to provide the sole basis for meaning and roles and identities in professional life, how can such practices ever change? And, how can the collective understandings of professionals also change to support and coordinate new forms of professional relations and interactions? The starting point to answer these questions is in adopting a more comprehensive conception of practice presented in this section.

Moving beyond skillful performances and technical knowledge, we can also recognize that everyday medical practice includes physicians, a supporting cast of other clinical professionals, equipment, an administrative infrastructure engaged in supporting functions, patients, and payers for services. In practical terms, a *practice* encompasses a broader complex of interrelated activities and interactions, established relationships, and formalized arrangements of human and material resources shared by multiple professionals in organizational settings (Rouse, 1996). Health Systems Innovation and Research professionals are inquiring and organizing within a larger complex of relations that make up the Health Sciences at the University of Utah and are required to account for their impacts on this larger complex of relations. Their efforts will establish new patterns of activities and arrangements of people and material things that will ultimately characterize what they do as HSIR professionals and in part constitute their *practice*. But their *practice* will also be impacted by and include broader features of the situations they face that may influence and change the performance of *practice*-based activities and the roles and relations of the professionals who perform them. Examples of such features will include the effects of specific organizational requirements and initiatives, changes in policies, new technologies, economic constraints, and changing patient needs and preferences. Thus a *practice* is better thought of as the entire situation and setting within which professionals interact, an entire "relational complex" (Rouse, 1996, p. 143) to which professionals belong rather than just the skills and knowledge they apply. This complex is not just about human relationships; *practice* also includes the knowledge, theories, discoveries, specialized equipment, practical achievements, and the other "made things" that exhibit and constitute professional culture (Pickering, 1995, p. 3). I have adopted the italicized form of the term *practice* to reflect

the broader relational, cultural, and dynamic conception of *practice* presented in this Introduction.

From this expansive *practice* perspective, an organization consists of and encompasses many such *practices*. HSIR professionals are organizing new relations of people, material things and the made objects of culture that are shaping an HSIR *practice*. Health Sciences at the University of Utah is a field of *practices* involving clinical and research professionals and their professional cultures; by interfacing with other Health Sciences professionals in fulfilling its organizational objectives, HSIR professionals are also engaging with and changing the relational *practice* complexes of those professionals and their cultures.

In what sense is *practice* also a cultural as well as a relational creation? *Practice* is cultural because it involves the developing of collective meaning and significance through changing activities, interactions, and relations as participants perform and engage with practical issues and problems. The situated and dynamic complex of activities and relations within *practice* provides the meaningful context for ongoing patterns of professional activities (Rouse, 1996, p. 135) and emergent possibilities for meaningful future actions (p. 152). *Practice* is shaped and changed by the dynamic features of a *practice* situation, including divergences from expected performances, and effects of changing activities, interactions, and relations; features of situations act as dynamic influences when they facilitate or hinder certain directions for future action. Because a *practice* is also a generator of meaning and significance for its participants, a *practice* is a cultural complex as well as a relational complex and is the means by which a professional culture is extended to new situations and settings (Pickering, 1995). Performances in *practice* may be explored through the cultural lens of the shared meanings, symbols, and understandings available to participants through their common participation in practice

(Reckwitz, 2002). Professionals who create new patterns of activities and relations through inquiring and organizing in *practice* respond to dynamic influences that become significant and, in the process, deploy cultural tools and resources that may help to reweave the web of habitual activities that make up professional cultures (Rorty, 1991).[4] *Practice* and professional culture are also persistently redefined and transformed by what is at issue and at stake in continuing a *practice* and by conflicts and differences in its reenactment (Rouse, 1996, p. 141). These conflicts may be engendered or influenced by competing cultures and traditions (MacIntyre, 2007). Such conflicts and differences in performance are evidence of vibrant cultures and traditions; the absence of such conflicts and differences in a culture or tradition may suggest that the culture or tradition is unhealthy or dying (MacIntyre, 2007, p. 222).

The broad conception of *practice* helps to frame research about issues of importance to the institutions, like Health Sciences at the University of Utah, that house professionals and provide the meaningful settings for their respective *practices*. Conflicts and differences in *practice* are played out in these institutions, such as academic medical centers, and in arguments over what institutions should become and how professional activities should be conducted in the future. HSIR, understood in terms of *practice*, has been created to facilitate change in interactions and relations within broader *practice* complexes in Health Sciences at the University of Utah and, in so doing, to challenge and renew the cultures and traditions of academic

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[4] Rorty (1991) conceived of a continuum of routines on one end and practical inquiry on the other hand; regularly performed activities may cause little cultural reweaving, but discoveries in inquiry may result in significant changes in cultural understandings and activities (p. 94). While Rorty uses the term belief, he emphasized that term referred to "habits of action" (p. 93) rather than psychological conditions. Culture in this sense is presented in patterns of activities and the logic of action they reflect (Geertz, 1973); in turn, cultural re-weaving is reflected in changes in the web of habits—adding to and dropping from the web certain actions and relations as they become more or less significant to further action (Rorty, 1991, p. 94).

medicine. By adopting a broad and dynamic conception of *practice*, I am seeking to adopt this relational and cultural perspective in understanding how HSIR organizers are positioning themselves to impact broader patterns of shared professional activities, interactions, and arrangements in their efforts to transform health systems.

Developing a practice study methodology. All researchers hold "at least some implicit body of intertwined theoretical and methodological belief" (Kuhn, 1970, pp. 16-17) that drives selection of relevant data (including which data should be ignored), the means of data collection, problem setting, evaluation, and even the most basic understanding of the world being investigated (Blumer, 1969). As noted by Bruner (1990), "research on *anything* will yield findings that mirror its procedures for observing or measuring. Science always invents a conforming reality in just that way" (p. 104). For these reasons, articulating methodological principles is central to this study.

A methodology consists of three broad components—a world view of the empirical world under study, conceptual tools to assist in data collection and analysis, and an interpretative method to explore relations among relevant data and draw appropriate implications (Blumer, 1969). In the practice study methodology, the world view is captured in the broad conception of *practice* summarized earlier and the within-*practice* stance I have adopted for this study. In my literature review, I develop conceptual tools from theories relating to social practices, learning, processes, power, ideology, complexity, culture, relational construction, and narrative theories, and from empirical studies of professionals engaged in transforming significant aspects of practice. These conceptual tools, which describe features of situations that may be highlighted by participants in an empirical study of *practice*, are available to be used by participants as cultural, dynamic, and narrative resources in their practice-building activities. The interpretative

method used by a practice studies researcher is captured in a narrative interpretive approach based principally on the practical competence of reading and the narrative structure of practical inquiry as introduced in the philosophical work of Ricoeur (1981, 1991) presented in the methodology chapter. Each of these components of methodology is introduced in the following sections.

Practice stance—establishing research positioning to understand collective professional action. My research followed the progressive practical actions of participants involved in organizing HSIR and their partial and differing perspectives of the situation. This research approach was informed by the expansive conception of *practice* described above and presents the participants' progressive practical inquiry, organizing, and collective professional action from their perspectives, rather than from an outside viewpoint. This flip of the research paradigm to study system transformation from the inside-out is captured in the term *practice stance*, which is suggestive of a within *practice* perspective that encompasses the positions of the participants who share the *practice* setting. A practice stance, which reflects my positioning as a researcher adopting "practice as a perspective" (Orlikowski, 2010), is grounded in the discussions of social practice theories and philosophical studies of scientific research in the literature review and is intended to implement the methodological design principles summarized in the methodology chapter.

By adopting a practice stance, I am seeking to understand the building of *practice*—the collective relations, actions, and arrangements that HSIR professionals are organizing. Conducting research from a practice stance should emphasize the following features of the practical world engaged by professionals:

- Such research should focus attention on what professionals do practically as they inquire, design, discover, and organize toward collective outcomes. In this respect, the practice stance promotes the presenting of a performative account of a slice of professional life (emphasizing what they do and come to understand) rather than a conceptual account (emphasizing what their actions represent in terms of theory).

- Research from a practice stance may consider routines and working "practices"—the established patterns of underlying activities, projects, processes, and arrangements of people and things—and changes to those patterns. A researcher conducting fine-grained studies of *practice* may catalogue such working practices and describe them with respect to their purpose, function, organization, and task structure (Schatzki, 1996, 2001, 2002).

- Such research should be sensitized to areas of practical conflict, lack of responsiveness to matters that deserve attention, and other sources of change "resistance" that are located in the situation, as postulated by Dewey (1938), rather than in the heads and hearts of participants.

- Research from a practice stance should explore specific organizational and systems level concerns by grounding such concerns in what matters and is at issue to involved professionals in the continuing performance of their activities in *practice*. The challenges of working across boundaries, developing new data and research, and integrating care mentioned earlier are not just abstract notions; these challenges are presented in everyday professional life in specific ways and may be studied in terms of a broad conception of *practice*.

- Such research is concerned with the matters that are at issue, in conflict, or changing at the edges of "professional practices" as traditionally conceived. Professionals may identify issues, conflicts, possibilities, and other matters of significance that arise in their everyday work and, in the process, reveal the underlying practical concerns in the situation that are driving the direction and scope of their inquiry and organizing efforts.

- By exploring issues, conflicts, and possibilities, a researcher adopting a practice stance may go beyond describing and analyzing underlying patterns of human interactions to explore their significance, including what is at stake in continuing or transforming those patterns. A focus on meaning and significance from the perspectives of involved professionals brings attention to culture—collective ways of acting, responding, and making meaning—as reflected in what professionals say, do, and make as they progress toward collective practical outcomes.

- Such research seeks to identify the dynamic factors in the broader *practice* situation and relational complex that are hindering and facilitating the change-oriented work of professionals. An emergent, dynamic, and transformative conception of *practice* encourages a study of *practice* to move beyond a mere description and analysis of ongoing day-to-day social or work routines.

- A dynamic view of *practice* identified through a practice stance will incorporate a narrative structure (Rouse, 1996, pp. 158-165). As noted by Rouse, ongoing actions make sense in part because we understand ourselves as being "within the middle of the story" (p. 164), and possible future actions make sense because they already belong to a "field of possible narratives" (p. 160).

- Research from a practice stance is also concerned with how new collective action develops from divergent perspectives and conflicting activities and arrangements. The interplay of divergent views and the drive toward consensus has a narrative structure. As observed by Rouse (1996), collective action sometimes presents "a shared concern to construct, enforce, and conform to a common narrative pattern within which everyone's endeavors make sense together" (p. 165). Such consensus is achieved "only through a continuing partial reconstruction of a shared sense of what the community has been about and where it can and should proceed" (p. 165).

In contrast to typical research employing either a micro-level or macro-level perspective to study professionals (Becher, 1999), the practice stance contributes to the exploratory, meso-level (Becher, 1999) professional and organizational research of HSIR organizing by assuring that this study considers both middle-level collective professional action that HSIR seeks to achieve and the multiple levels (Klein & Kozlowski, 2000) of environmental, organizational, professional, and individual influences and outcomes in play. Conducting research from a practice stance achieves this outcome by documenting and exploring the dynamic relations and interfaces between professional- and organizational-level concerns (Becher, 1999; Hoff & McCaffrey, 1996) and their implications for broader health care system transformation.

Cultural, dynamic, and narrative resources to sensitize data collection and analysis. A central concern of any methodology is collecting and analyzing pertinent data. Blumer (1969) envisioned that conceptual tools from available theories and studies would be applied in data collection and analysis, but only to the extent that concepts were pertinent to the empirical conditions of the world being studied. The expansive view of *practice* presented above emphasizes the need to consider a wide range of elements in changing situations that may have

implications for practical inquiry and organizing, including dynamic aspects of a *practice* placed at issue by changing situations. The literature review identifies additional conceptual tools—cultural resources, dynamic resources, and narrative resources—to aid in data collection and analysis. These broad categories of practice-based resources describe features of practice situations that may be presented in empirical research and used by professionals in their practice-building activities.

In applying the techniques and routines of *practice*, meanings of words and actions and matters of significance are historically established and provide the basis for mutually responsive interactions. On the edges of *practice* beyond established routines, in uncertain conditions or in the value conflicts envisioned by Schön (1987), new matters of significance arise, and new collective meanings need to be developed. Cultural resources are the discoveries and clues from inquiring and organizing that help to identify matters of significance, describe the meaning of new relationships and interactions, or suggest the need for further inquiry and meaning development. They are the features of *practice* situations reflecting gaps in communication and failures of coordination that drive experiments to improve outcomes. Cultural resources are available to be used practically by inquirers and organizers to drive further collective inquiring and organizing toward desired collective outcomes.

I have also identified certain categories of dynamic influences on *practice*—features of a situation that may hinder or facilitate achieving desired change outcomes—that may be present in situations where professionals are seeking to act under conditions of uncertainty. These categories of dynamic influences are analogous to Schön's (1987) design domains—separate but overlapping features of situations that are placed at issue and that must be crafted into a coherent and actionable whole. Such dynamic influences are revealed by what participants report and

how participants respond (or fail to respond) to some aspect of a situation that is uncertain, changing, or problematic. Influences have dynamic impact when they tend to make certain responsive actions easier to take or make others responses more difficult. Such influences also act as cultural resources when they push inquiry and organizing activities in certain directions, resulting in a shaping of discovery experiences as contemplated by Polanyi (1966), and the developing of new meaning.   The categories of dynamic features of situations I have identified are reflected in Figure 1.1.

Meaning/Possibilities: effects of meaning making, narrative features, future possibilities, identities

Expectations/Purpose: effects of norms, values, rules, purposes, beliefs, historical understandings, stakes

Knowing/Inquiring: effects of practical inquiry learning in experience, knowing, knowledge

Processes/Projects: effects of activity patterns, structures, arrangements, regularities

Space/Positioning: effects of spatial relations, positions, boundaries, hierarchies

Relating/Interacting: effects of social and material relations and interactions

Power/Ideology: effects of ideology, differential treatment, power relations, and power-reinforcing social alignments

Time/Emergence: effects of time, uncertainty, emerging conditions, changing situations

Figure 1.1. Categories of change facilitating and hindering dynamic features of practice situations. These features also generate cultural resources that are available to practice participants to construct meaningful collective action.
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The following are examples of dynamic influence that may be evident in collected data:

- Expectations and purpose—expectations, values, rules, purposes, beliefs, norms, and historical understandings; the enforcement or non-enforcement of norms, rules, or

expectations; and the presence of issues and conflicts concerning standards for performance.

- Processes and projects—activities and patterns of ongoing routines, including the effects of specific projects, tasks, and routines, and arrangements of people and things.

- Space and positioning—positioning within organizations and systems; boundaries, and conflicts at such boundaries; strategic positioning; spatial positioning and spatial relations.

- Power and ideology—aligning agents in the situation, responsiveness or resistance to dominant agents, conflicts with implications for power relations, and examples of ideology in action.

- Time and emergence—effects of uncertainty, emergent conditions, surprises, and attention to time, sequences, processes, or systems operations.

- Relating and interacting—effects of social relations, interactions with things, and relational interdependencies.

- Knowing and inquiring—learning, formal knowledge, practical inquiry to decide courses of action and to build know-how, reflection-in-action and knowing-in-practice (Schön, 1983, 1987), and the practical use of discoveries in further inquiry and organizing activities.

- Meaning and possibilities—storied accounts about what is at issue or significant, developing of new meaning in the situation, reconstruction of stories about what prior actions have been about, and developing new future possibilities.

Of course, not all situations will present evidence of specific instances of each category of dynamic influence. The key point is to sensitize data collection to the features of the situation that are influencing responses and outcomes and to consider such influences in the framing of interpretation.

I have also identified the narrative features of written texts that may act as narrative resources by helping to connect and promote understanding of changing *practice* situations including those involving inquiry and organizing by professionals. These narrative connections identify the narrative features of interviews, stories, and actions and serve as narrative resources that promote an understanding of cultural and dynamic features at work in a situation and of the situation as a whole. The narrative connections include:

- Narrative interactions: Narrative content in texts, including storied connections and interactions among participants, actions, and material aspects of a setting;

- Plots: Narrative content in texts that develops the relationships of events to establish their significance and explain causal and other relationships;

- Symbols: Narrative content in texts includes references to rites, rituals, norms, and systems of meaning that articulate practical experiences (Ricoeur, 1984, p. 57);

- Time: Narrative content in texts includes time-based connections among elements in the situation and perceptions of alternative possible futures; and

- Narrative accountability and narrative unity: Narrative content in texts may also include references to connections between actions and ethical norms and accounts that reflect achieving consistency among conflicting perspectives and narratives.

These narrative features of texts may also be evident as narrative features of patterns of action (Ricoeur, 1981). In this way, attention to narrative features presented in a situation help to connect interview accounts and actions with the dynamic features of the situation.

Figure 1.2. Typical dynamic effects of features of practice situations on future action. Collective action is built on a foundation of beliefs, processes, and positions but responds to emerging power relations, interactions, discoveries, and new possibilities.

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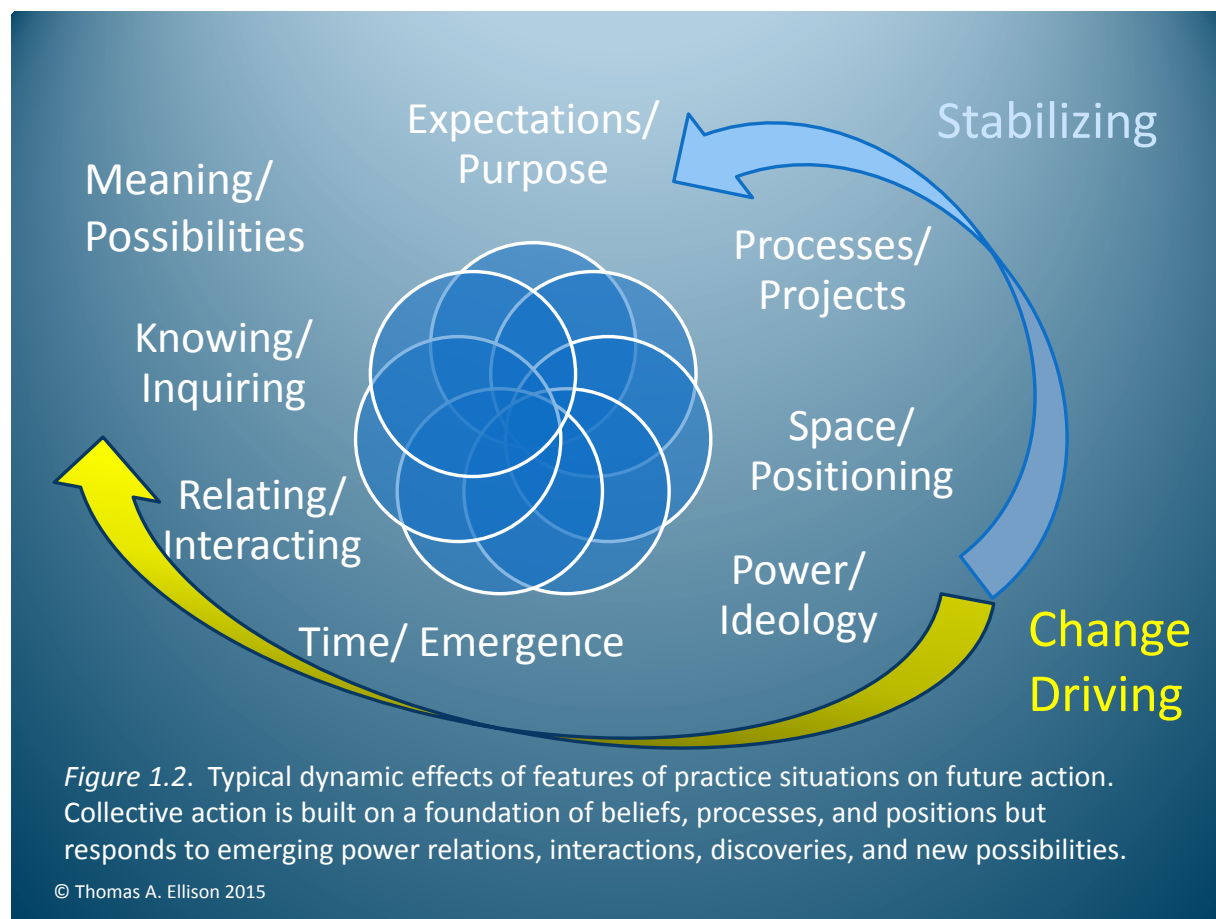
While cultural, dynamic, and narrative resources outlined earlier provide conceptual tools to enhance understanding of a changing *practice* situation, it is important to emphasize that these conceptual tools reflect real world conditions: In the hypothetical but typical situation depicted in Figure 1.2, cultural and historical expectations, the structure of existing processes and projects, and established spatial relations, including organizational boundaries and strategic positioning are situational factors that may restrain desired change; at the same time, realigning social and power relations, creating new relations and interactions, and developing discoveries through inquiry are concrete action strategies available to drive new change-oriented outcomes

and changes in the cultural ways of responding. Thus, while these cultural, dynamic, and narrative resources could be used to generate conceptual analyses, they will first be presented in interview accounts and in responsive actions as features of a real situation. In turn, these features are presented in a form of ongoing but incomplete narratives—narratives with possible future alternatives.

>*Reading and the narrative arc—developing a narrative-based interpretative method*. In light of the emphasis on situated practical action implicated both by a within-*practice* stance and the tools offered by cultural, dynamic, and narrative resources, what is an appropriate interpretative method for a researcher of professionals engaged in inquiry and organizing? The very structure of inquiring (Dewey, 1938), designing (Schön, 1987), and discovering (Polanyi, 1966) reflects the past, present, and future structure of narratives: Professionals identify from their past experience the key features of a situation that are problematic but suggestive of promise and then engage in ongoing experiments with a view toward achieving future collective outcomes. Inquiring and organizing in *practice* thus construct stories that are "(as-yet) untold" (Ricoeur, 1984, p. 74) but that make sense of developing situations by showing how actions meaningfully relate to each other and by creating holistic, narrative-based understandings (pp. 66-67). The meaning and understandings developed through inquiry and organizing in one situation, for example the organizing of HSIR, have implications beyond that particular situation through the narrative activity of *reading* (Ricoeur, 1981).

The competence of *reading* may be applied to narrative texts and also to human actions because completed actions reflect the essential features of narrative texts (Ricoeur, 1981). The *reading* of texts and the *reading* of action like a text provides the starting point for my work as a researcher of HSIR organizing. In Ricoeur's view, the reading of written discourse (and by

extension a reading of human action) allows a critical separation of the text (and action) from the particular intentions of the author (or actor) and the limits of the particular situation. This separation from intention and situation does not involve a typical inductive approach that generates abstract concepts and leaves the situational detail behind. Rather, his idea is to invite multiple readings of the text (or action) for its significance for future situations by potential readers who may appreciate the details of the reported situation and its differences and similarities with other situations. This description of *reading* enacts the past, present, and future structure of a narrative—actions fixed by writing (or completed human actions) may be assessed for relevance and interpreted for application in future settings. The "Building a Learning Health System" narrative contains my reading of texts and completed actions, creating a composite story of HSIR organizing that may be further assessed and applied by readers of this dissertation to their particular situations.

In turn, and consistent with the practical objectives of inquiry and organizing, the competence of *reading* may be used to develop a holistic, interpretative understanding of a situation. Also building on the work of Ricoeur (1981), this interpretative method incorporates an analysis of historical and underlying features of the situation and considers its future implications, a method that also has the structure of a narrative arc.[5] As illustrated by Figure 1.3, that narrative arc of past to future is created as follows—an interpretative understanding of the

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[5] Ricoeur (1981) has presented these elements theoretically as the hermeneutic arc. I have retained his narrative structure, which connects past, present, and future, and his movement between analytic elements and holistic understanding. I have restated the analytic elements in the terms of the situational features identified from a reading of interview texts, other texts generated or located during the research study, and actions. These features include those captured in the concepts of cultural, dynamic, and narrative resources introduced earlier and explored more fully in the literature review.

present may be enhanced by an analysis of historic influences presented in texts and completed action, including the features of situations identified as cultural, dynamic, and narrative resources; further, an analysis of present *practice*-based resources may be deepened by considering their implications for the future and for different situations.

Figure 1.3. The *narrative arc* narrative-based interpretative method. This method enhances current understanding of a situation through analysis of past factors and the projection of future possibilities for the situation and for other situations.

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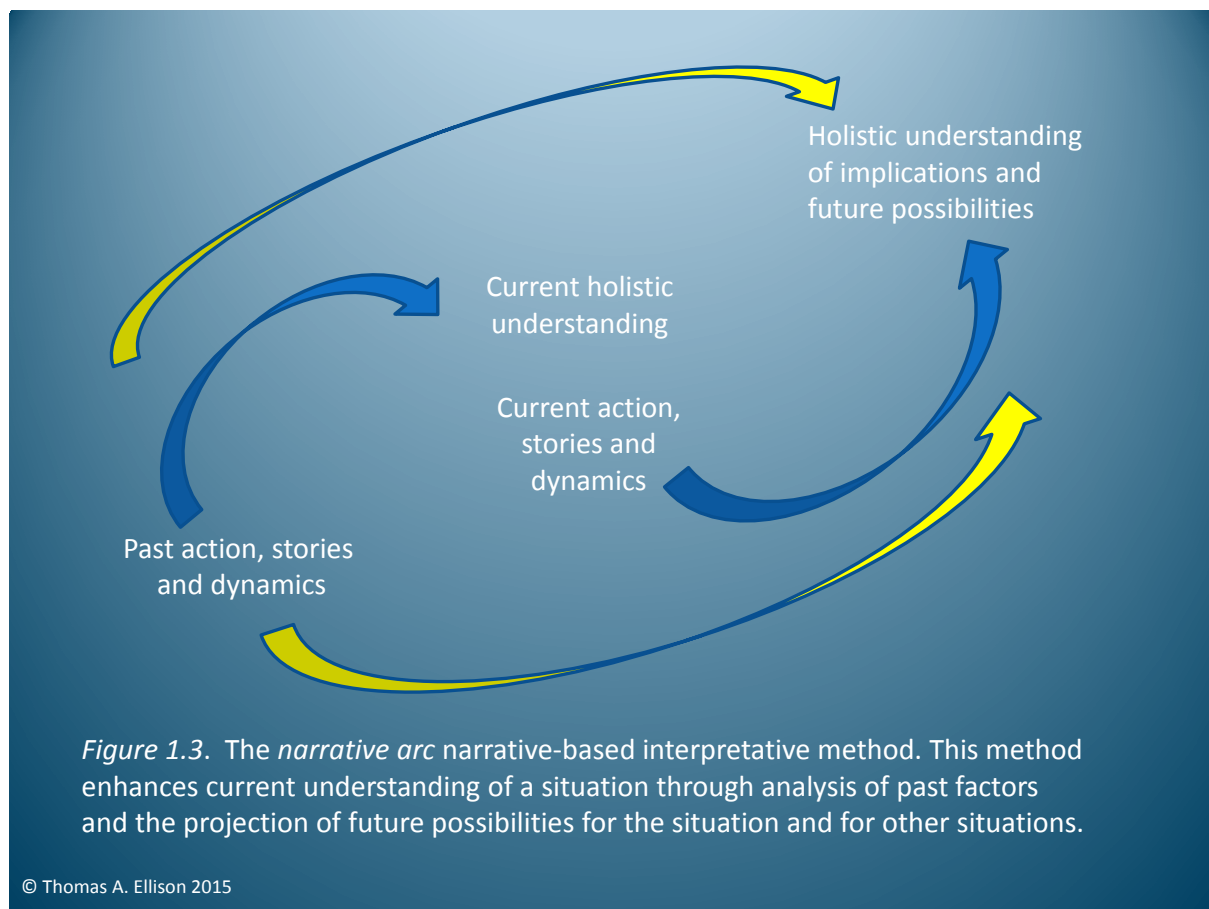
As explained more fully in the methodology chapter, this narrative-based interpretative approach invites a researcher to comment on the situation that is being studied in light of the relations among factors presented in collected data and to identify its implications for the future and for other situations. This approach allows a researcher to have an interpretative position while still honoring and preserving the essential features of texts, actions, and the potentially significant differences in understandings among participants. My reading of HSIR organizing for its implications for the future of the HSIR program, health systems innovation, and the

transformation of *practice* more generally are reflected in the chapter titled "Developing a Narrative Understanding of Practical Inquiry."

        Using the practice study methodology to understand how practices may be transformed. The practice study methodology is a way to study professionals engaged in collective, change-oriented activities. In contrast to typical research methods that seek to develop or apply concepts and generate researcher representations of what is going on (Rouse, 1996), the practice study methodology preserves situated dynamics, cultural and narrative features, and developing understandings of professionals as they inquire and organize under conditions of uncertainty. This approach makes sense as a way to study practical inquiry and organizing because it captures the narrative features of experience. Storied accounts of experience recount the features of situations that have been essential to action in the past and that may have significance for other situations (Sullivan, 2005, p. 198). Further, inquirers seek answers to problems in the context of ongoing practical activities, which are storied, and they reestablish meaning and the capacity for further action by using narrative connections from their experiences to integrate their analyses with practical concerns (p. 245). Through inquiring in conditions of uncertainty, we establish paths of action toward future possibilities when we can make sense of our ongoing stories in light of the conditions we are experiencing and the possibilities we can envision. The practice study methodology offers a way to capture the developing storylines of professionals—the lines of action taken and understandings developed by professionals as they inquire and organize toward change-driven objectives. These storylines can be read by others for application in other pertinent situations. The methodology also provides a narrative-based framework to present the cultural, relational, and dynamic influences that shape the direction of ongoing inquiry and organizing activities and draw implications for

future action. The study of HSIR organizing reflects those storylines of practical problem

solving by professionals who are working through the issues essential to the transformation of

health care delivery.

Summary of the Chapters

I have organized my literature review in three sections. The first section of the second

chapter develops the concept of cultural resources in connection with a review of literatures

pertinent to developing collective practical action using within-*practice* positioning. These

literatures include theories and studies grounded in social practices; theories pertinent to

professional learning; process and organizing theories; complexity theory; theories pertinent to

collectives including relational construction, power, ideology, and organizational learning; and

literatures exploring the relationship of *practice* and culture. The second section reviews

empirical studies of professionals engaged in significant changes in their respective *practices*,

and identifies various categories of situational features that may act to hinder or facilitate

action—the dynamic resources available to participants in *practice*. The third section reviews

narrative literature to identify narrative resources available to those participants to develop lines

of practical action.

The third chapter addresses the methodological design principles underlying the practice

study methodology and provides the details of the HSIR study design. The HSIR study,

following Blumer (1969) and Stake (1995), was exploratory and oriented to the basic empirical

conditions presented in the organizing of HSIR. This study of HSIR is exploratory in two

general respects. The study of organizing HSIR involved a unique situation and generated issues

of first impression. Further, the study represented the first application of the practice study

methodology and was exploratory with respect to research methods and procedures. Following

the guidance of Blumer and Stake for conducting exploratory research, the research proceeded with a flexible and progressive positioning with respect to data sources, issues, applicable concepts, and driving questions. Flexibility was especially called for in light of my intention to surface and preserve different and potentially conflicting perspectives of participants. This approach produced an effect on the research process that Blumer viewed as essential—the issues arising from the empirical setting drove the direction and procedures of the inquiry rather than the opposite.

I have presented the conclusions of this study in three chapters. The fourth chapter contains a composite narrative reflecting the actions undertaken and the understandings developed over time through HSIR organizing activities. Consistent with the practice study methodology, the "Building a Learning Health System" narrative reflects the multiple perspectives of participants and the matters at issue and of significance they identified. This chapter presents a developing history of gaps, issues, and problems that were presented in organizing toward the ambitious collective outcome of transforming health care delivery and the efforts of organizers to address them through new forms of collective action. The narrative accounts for a few of my comments as a researcher applying the practice study methodology and as reader of the issues and activities that arose in the organizing of HSIR. The fifth chapter applies the practice study methodology in developing an enhanced narrative understanding of practical inquiry from a more conceptual reading of the "Building a Learning Health System" narrative including implications for the work of HSIR organizers and health systems transformation. The sixth chapter summarizes my learning and the implications of the study for leadership and change theory, leadership and management practice, and exploratory inquiry.

Review of Literature

The Health Systems Innovation and Research Program is concerned with transforming how health care delivery is organized and ultimately how health systems function. Strategies to transform health care (Porter & Lee, 2013) contemplate that professionals will organize to integrate care across traditionally separate medical disciplines and established teams and expand professional activities to accommodate new measures of patient satisfaction and value grounded in academic disciplines outside of the medical care specialties.[6] HSIR professionals have been charged to reach across established academic and clinical boundaries, develop new research and data, and stimulate innovation in care delivery by integrating cross-disciplinary efforts. What existing literatures are pertinent to my chosen inquiry of professionals engaged in such efforts? What examples of empirical studies of collaborative professional action are pertinent to the study of such a unique situation? What conceptual tools can be derived from such literatures to help to identify significant features of the empirical world of professionals? These questions organize the following literature review.

This orienting review of broadly relevant literatures establishes that no established combination of theory and practices amounts to a research paradigm (Kuhn, 1970) concerned

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[6] Porter and Lee (2013) have identified six key health care system reform strategies that must all be implemented. Three strategies involve the reorganization of health care services—forming integrated practice units, integrating care across multiple facilities, and expanding excellent care geographically. Three other strategies involve supporting functions—measuring patient outcomes and costs, reimbursing for services based on full care cycles, and developing an accessible information platform. Implementing these strategies will require health care service providers to participate in new, collective activities with implications at the professional level (involving new teams and care integration), the organizational level (involving the broad range of health services and supporting functions), and the systems level (involving multiple organizations, regulatory agencies, payers, employers, and other players with interests in health care outcomes). Actions at such levels, however, are interdependent and are grounded in new forms of professional cooperation and organizing.

with collective professional inquiry and organizing in uncertain or changing situations. In the absence of dominant research paradigms and consistent with developing a performative account of organizing in *practice*, this literature review will summarize pertinent theoretical and empirical literature in terms of the features of *practice* situations—the *practice* resources—that are available to the participants in *practice*. These practice resources, which I have identified as cultural resources, dynamic resources, and narrative resources, are used by participants in *practice* to develop new collaborative understandings, to dynamically shape the directions and outcomes of their activities, and to make sense of their organizing work in uncertain conditions.

Cultural Resources in the Study of Practice

This first leg of the literature review uses theoretical and empirical literature to inform the study of *practice* and organizing from a cultural perspective. As presented in the Introduction, organizing is a form of practical inquiry that operates beyond the boundaries of technical skill and professional knowledge. Collective inquiry and organizing develop meaning, significance, and shared understandings through relational interactions that deploy cultural resources. This review explores a range of applicable theories to identify the cultural resources available to those participants who engage in organizing. These theories will be reviewed within the theme of *practice* as professionals organizing emerging collective culture.

Practice as professionals organizing emerging collective culture. The words of this section heading highlight some essential characteristics of professional life beyond the bounds of professional knowledge and technique. Such terms also present a generic narrative of change-oriented professional performances and outcomes under conditions of uncertainty: As introduced earlier, *practice* encompasses the relational complex (Rouse, 1996) within which professionals inquire, organize, and develop meaningful courses of action. Professionals are key

actors in *practice*, and they inquire and organize to fill the gaps and address the issues in *practice* that they identify. Their inquiry occurs under conditions of uncertainty and doubt where significant discoveries and features of the situation emerge and require responsive action. Their responsive action is grounded in what they discover as becoming meaningful and significant to *practice*, oriented to achieve collective professional, organizational, and system outcomes, and organized to create lasting changes in professional and organizational activities and culture. Hence, the theme—*practice* as professionals organizing emerging collective culture. These key terms— *practice*, professionals, organizing, emergence, collective, and culture—also provide the outline for the following review of the relevant theoretical and empirical literatures that provide the philosophical and conceptual grounding for my study of HSIR organizing. In the process, I will also position my practice study methodology outlined in the Introduction with respect to these literatures and emphasize how the developing of cultural resources of meaning and significance and narrative connections are central to the relevant theories.

Practice as culture; culture as practice—part 1. The theme and narrative of *practice* as professionals organizing emerging collective culture makes an essential connection between *practice* and culture—*practice* and culture both construct and are constructed through inquiry and organizing. This connection drives the practicing lives of professionals, the practice study methodology, and this study of HSIR organizing. Stated most simply, a *culture* is a framework of meaning created and demonstrated in collective life—webs of collective ways[7] of acting,

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[7] I intend the term *way* to convey the multiple senses of that term, including what constitutes acting or responding (way as a course of action or response); how acting or responding is performed (way as a manner or mode of acting or responding); a method of acting or responding (way as a regular or characteristic performance or response); the direction of acting and responding (way in the sense of

responding to others and to what is going on, and making meaning (Rorty, 1991, p. 10).[8]

Practice is the active demonstration of professional culture—ongoing connected performances

and relations that establish the setting for, and culturally grounded meaning of, further collective

action. Such further action not only achieves its productive objectives but also extends culture

through time to new situations and new relations (Pickering, 1995). Inquiry and organizing

create a two-way exchange between *practice* and culture where the currency is meaning and

significance: Cultural resources are deployed in the construction of meaning and suggest the

significance of ongoing organizing activities within *practice*; at the same time those

practice-based inquiries and organizing efforts become the sources of new interactions,

discoveries, and possibilities that may supplement available cultural resources. Enriched cultural

resources in turn may be used to give meaning to new, collective, change-driving activities and

relations—even to the extent that the meaning and significance of ongoing activities and

relations may be transformed (Rouse, 2002). That statement sounds abstract if culture and

meaning are conceived to be conceptual aggregations of intangible ideas. But another approach

to culture, one consistent with attention to demonstrated performances and relations, is available.

Following Geertz (1973), culture reflects a system of meaning and significance that is

demonstrated in action (p. 10) and that serves to reveal the meaningful "informal logic" (p. 17)

of actual performances. This position rejects the idea that culture is the hidden controlling force

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heading this or that way); available possibilities (way in the sense of pursuing an outcome in one or more ways); and moving forward (way in the sense of making way).

[8] When Rorty (1991) referred to a "web of beliefs" (p. 93), he expressly equated "belief" to "habits of acting," (p. 93) rather than to mental states. My use of his "web" metaphor extends to collective beliefs in the sense of established collective ways of acting, responding, and making meaning. I also acknowledge Geertz's (1973) adoption of Weber's webs of significance to describe culture (p. 5).

that determines beliefs, behavior, and practices and that can only be accessed through some form

of "long-distance mind reading" (p. 14). Socially performed action has a logic to the extent that

such action makes sense to others within the cultural framework of meaning that is operating.

That cultural system of meaning operates on symbols and other publicly available cultural

resources[9] recognized with that system as carrying meaning.[10] These resources go well beyond

the symbols of language to include:

- values, norms, rules and principles that guide behaviors and the visible artifacts

  including behaviors enacted and things produced (Schein, 1985)[11];

- rituals, routines, stories, symbols, and control and power structures (Johnson, 1992);

  and

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[9] In an active, performative view of culture, the symbolic system culture reflects must be understood in its contribution to meaningful collective action rather than through an analysis of the structure of the system and the relations among its elements (Geertz, 1973, p. 17). The concept of cultural resources I am offering is itself performative—a cultural resource is not a predefined element of an abstract system, but a gesture, action, thing, word, discovery, or other feature of a situation that is used by participants to convey or reach meaning. The active construction and use of cultural resources is broadly consistent with the following: Mead's (1934) concept of significant symbol as generating meaning in social interactions; Geertz's (1973, p. 10) focus on symbolic action; and Pickering's (1995) conception of practice as extending a culture of made things (p. 3) and constructing alignments among diverse features of culture (p. 94).

[10] As I am using the term, meaning arises within and is a property of interaction and experience; meaning is not an abstract idea or a construct developed through mental activity (Mead, 1934, pp. 75-82). Objects (including actions) are not pre-defined, but are constituted as being what they are and therefore as having meaning through experience, responsive interactions, and resulting adjustments (p. 77). For this reason, the meaning of a thing or action, and what is meaningful in a situation, may change over time.

[11] Schein (1985) in particular has emphasized that culture is grounded in unarticulated but shared assumptions governing the more conscious or performed levels of culture. While assumptions and beliefs may have some connection with individual action, it is unclear how collective action can be causally explained in the terms of unarticulated assumptions and how such assumptions came to be shared within the collective in the first place. Rather than plunge into philosophical debates, a performative account of culture gives priority to the actions themselves while recognizing that such actions make sense and are meaningful in light of publicly available cultural resources.

- things made by collective activity (Pickering, 1995), including knowledge, concepts, discoveries, facts, skills, machines, processes, and other meaningful relations.

A culture, then, is not only evidenced by meaningful collective actions within the relations of people and things that make up *practice*; a culture may also be described in terms of the tangible, publicly available features of *practice* situations that become meaning-carrying cultural resources, or that suggest the need for further meaning making. A feature of a practice situation becomes a cultural resource when it can be used to shape and communicate the meaning of ongoing performances and relations, suggest the significance of what is going on, identify an issue or gap requiring further inquiry, or contribute to a collective understanding of available courses for further collective action.

I will pick up this story of culture-building in a later discussion on culture. Introducing the relationship of practice, culture, and organizing at this point sheds some important light on the theories and concepts I will review: In addition to describing some conceptual tools that might inform an empirical study of a *practice* situation, the following discussion will emphasize how meaning, significance and narrative understanding is persistently involved in and essential to *practice* and how features of *practice* situations become cultural resources that drive collective meaning, significance, and understanding.

Practice theories and related literature. *Practice* is the first term organizing this part of the literature review. The expansive concept of *practice* has been presented in the Introduction along with certain references to the literature. This section will expand the earlier discussion to provide further elaboration of *practice* and some conceptual tools for approaching empirical research that relates to *practice*.

The activities of professionals within their practices may be identified as particular instances of social practices, which are socially produced patterns of related activities (Schatzki, 2001, 2002). Social practice theories have been applied to explain the ordering of social life (e.g., Giddens, 1984; Schatzki, 2002) and to describe and explain a range of regularly enacted activities in social settings, including ordinary activities (e.g., Bourdieu, 1977, 1990; de Certeau, 1984), the production of goods (e.g., Schatzki, 2002), and the research activities of scientists (e.g., Pickering, 1995; Rouse, 1987, 1996, 2002). The early development of these theories, as reflected by the work of Bourdieu (1977, 1990) and Giddens (1984), were principally offered to explain stability and replication of regularly performed activities rather than social change. To illustrate this point, Bourdieu has suggested that a social practice is generative only within historical constraints, making possible "thoughts, precepts and actions inherent in the particular conditions of its production—and only those" (1990, p. 55), while Giddens has characterized "the search for a theory of social change" as "doomed" (1984, p. xxviii). How does change occur in the context of regularly performed social practices and established arrangements of people and things? Exploring this question is not only of theoretical interest, but also of practical importance: What is at stake in professional life is building collective responsive capacities of professionals and their institutions to the changing needs, interests, and expectations of society and those they serve.

Practice theory literature pertinent to organizational and social science research over the past two decades includes the following (certainly incomplete) list:

- the writings of Orlikowski (2010) (classifying practice-based research approaches as emphasizing practice philosophy, a practice perspective, or practice phenomena);

- Pickering (1995) (a study of scientific practice as the extension of scientific knowledge and culture);

- Polkinghorne (2004) (a full exploration of the philosophical and theoretical roots and implications of practice theories from the perspective of human sciences and care);

- Reckwitz (2002) (distinguishing practice theory as a cultural theory of action from other cultural, social, and economic theories of action and addressing conceptual differences among identified theories relating to mind, body, knowledge, and other matters);

- Rouse (2006) (exploring the main philosophical themes and conceptual issues addressed in practice theories);

- Schatzki (1996, 2002) (developing a descriptive approach to practice organization and a social ontology based on social practices);

- Schatzki et al. (2001) (an edited volume with contributions from a range of practice theoretical perspectives); and

- Turner (1994, 2002) (challenging the assumptions and usefulness of practice theories from an individualist perspective).

In addition, because scientific research has been explored as a model of practice (Pickering, 1995; Rouse, 1987, 1996, 2002), certain other historical and philosophical commentaries about science and scientific knowledge (e.g., Barad, 2007; Fine, 1996; Rheinberger, 1997) also provide insights pertinent to an understanding of features that constitute *practice*.

Certain of the features of *practice* have also been described in the Introduction. My further review of practice theory literature will explore some of the constituents of *practice* and introduce some additional concepts and tools that may help to explore the actions of HSIR

organizers. In the process, I will position my practice study methodology with respect to

practice theories and establish the philosophical and empirical linkages between action occurring

in *practice*, narratives, and developing collective meaning and significance. I will then introduce

the strategy-as-practice literature, which extends practice theories to a field of empirical research.

  Practice as encompassing everyday social practices. Practice theories provide useful

resources to understand everyday life because those theories pay attention to everyday activities.

Such activities are generally organized as patterns of practical, socially responsive, and regularly

performed actions, which have been called social practices or sometimes just practices.[12]

Examples of such social practices include the cooking practices of chefs, the construction

practices of home builders, the instructional practices of teachers, the negotiation practices of

lawyers, and the diagnostic practices of emergency room personnel. As illustrated by these

examples, social practices are namable bundles of interrelated human activities. These social

practices are visible in the form of mutually responsive "doings and sayings" that are regularly

performed over time (Schatzki, 1996, p. 89). More significantly, social practices are organized

not only by the articulated rules and established tasks, projects, and end objectives apparent in

the performances but also through "shared practical understanding" (Schatzki, 2001, p. 2).

Practical understandings form the basis for collaborative human action: Understandings

accompanying practical activities, confer human speech and actions with readability and

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[12] The terms practice and practices are not used consistently in the literature. For purposes of the study of professionals, I have adopted a relational (Rouse, 1996) and cultural (Pickering, 1995) perspective of *practice* that is anchored in typical professional activities (which I will refer to as work practices, activity patterns, or routines), but that also includes structured arrangements of people and things, power, knowledge, narratives, and the full range of situational features that impinge on what professionals do. Work practices and routines are important because such activities act to both structure arrangements of people and things and become the building blocks of *practice* based on shared practical understandings developed in meaningful interactions (Schatzki, 1996, 2002).

significance, and make possible meaningful responses (Schatzki, 2002, pp. 72-76).[13] Mutually

responsive activities in turn create social orders in the form of arrangements of people and things

that are linked together (pp. 18-25). In this respect, organizations, networks, or systems can be

characterized as multiple bundles of interrelated activities and arrangements of people and things

(pp. 167-170).

Arrangements of connected people and things not only help to structure aspects of our

lives; through and in connection with such arrangements, humans and non-human entities relate

to each other and through such relating attain positions, construct identities, and locate meaning

(Schatzki, 2002, pp. 19-22). As suggested in the introductory discussion of *practice* as culture,

positions, identities, and activities become cultural resources when they become collectively

meaningful and significant and drive further collective action or inquiry.

The concept of *practice* introduced in the first chapter incorporates more than activity

patterns and arrangements by paying particular attention to dynamics and matters at issue and of

significance that arise in the performance of work, and by seeking a holistic, rather than analytic,

understanding of a changing practice situation. While the analysis of activity and arrangement

patterns may produce useful information about the structure of organizational life, my central

concern is to understand how changes in such patterns occur. Changed patterns are socially

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[13] As emphasized by Mead (1934), meaning is created in the process of a social interaction involving a gesture calling for a response and in the interpretation reflected by the response and is not supplemented by mental activity or ideas (p. 76). His point can be illustrated by simple examples—raising a right hand may be a gesture that calls for a particular response, as in the situation where the hand raiser is approaching an acquaintance or stepping off a New York City curb, and such hand raising may be a meaning-carrying response to a prior gesture, as where the hand raiser is voting for a motion, standing in a courtroom witness box, or responding to a professor's question. Each of these instances of a social act involving gesture and response carries very different meaning and significance as a property of a particular interaction and situation.

constructed outcomes that dynamically unfold within ongoing activities and arrangements. As

characterized by Schatzki (2002), social practices not only organize human life but also generate

the products of human activity: "Phenomena such as knowledge, meaning, human activity,

science, power, language, social institutions, and historical transformation occur within and are

aspects or components of the *field of practices*" (p. 2). The existing structures of human

activities and arrangements and changing features of a situation have dynamic effects—they

suggest and facilitate certain possible actions, while hindering other possible actions or rendering

other possibilities difficult to envision (Pickering, 1995; Rouse, 1996; Schatzki, 2002). A merely

descriptive approach seeks to identify certain stabilized patterns of social practices and

arrangements through analysis, and thereby describe the organization of these aspects of human

life; by comparison, a dynamic approach seeks to identify the features of a situation operating to

impact change outcomes and is therefore concerned with organizing (Weick, 1979).

A dynamic approach to *practice* introduces a certain messiness and uncertainty in

describing *practice* because sources of dynamic influence are not limited to historically

structured activities and arrangements and because pertinent social patterns and structures also

change over time. Even a regularly performed social practice, however described, persistently

changes based on changes in interpretation and meaning (Rouse, 2001, p. 193), local adaptations

in activity patterns (Fuller, 1993, p. xv; Turner, 1994, p. 84), and the failure to enforce norms,

rules, and expectations (Fuller, 1993; Rouse, 1996, 2001, 2002). Stated simply, "when

continuity is not enforced, discontinuity reigns" (Fuller, 1993, p. xv). Even small performance

discrepancies that cumulatively produce significant changes in activity patterns over time may be

reported as practice continuity rather than practice change by participants (Turner, 1994, p. 84).

Thus, the structures and patterns of activities and arrangements constitute important features of

practice situation and may, in certain situations, constitute cultural resources that become meaningful and significant to the continuation of *practice* as it has been previously performed. Nevertheless, the preceding observations suggest that merely identifying and describing such structures and patterns is not likely to enhance an understanding of how *practice* changes.

Practice as encompassing relations with meaning and significance. Rather than limiting the conception of practice to the features of social patterns and orders, the broader conception of *practice* introduces the relational and cultural construction of meaning and significance that occurs in *practice*. As presented earlier, a *practice* is considered to be an entire "relational complex" (Rouse, 1996, p. 143) of people, things, participations, responses, performances, interactions, relations, objects, and effects that are relevant to a changing situation. The term complex implies stability and the status of *practice* as on entity that do not exist; the relations that make up the configuration of *practice* settings are persistently changing, and the significance to the situation of any set of relations changes as well. Descriptions of *practice* boundaries are not meaningful to participants in *practice*; matters that become significant and meaningful to *practice* are not confined within existing patterns of activities, professional or organizational boundaries, or other stabilities in professional life. I follow Rouse (1996, 2001) in recognizing that *practice* includes all the features and relations evident in a situation that become significant, meaning-generating, and response-producing: "What a practice is, including what counts as an instance of the practice, is bound up with its *significance*, i.e., with what is at issue and at stake in the practice, to whom or what it *matters*" (Rouse, 2001, p. 193). Matters occurring within *practice* become significant when they both make sense and take on meaning and importance to participants in the light of other ongoing *practice* activities and achievements (Rouse, 1996, pp. 166-178). These activities and achievements become

important cultural resources to the extent that they help to frame future collective action. In the field of scientific practices commented on by Rouse, the significance of research findings is not merely assessed against theory or what previously has constituted codified knowledge; rather, new discoveries have significance in the implications of such findings for the ongoing research program and the related allocation of resources, equipment, and commitments of people and time. In this respect the features of a situation trump the intentions, subjective evaluations, and even the analyses of participants—matters in a situation become significant to the extent that future possibilities for action are suggested as available or constrained (p. 150) by the relations among the people, things and emerging features of the situation. What *practices* encompass is partially but crucially marked by the possibilities for future action arising within ongoing *practice* that are available to be enacted. As an example, the research discovery of a marker for a disease or an effective diagnostic protocol may supplement available knowledge within a specific medical discipline, but will only become significant to clinical *practice* if the relations among features of diagnostic situations, including staffing, equipment, procedures, training, and the management of patients, can be organized to deliver the diagnoses suggested by the discovery. In this example, the significance of the discovery to *practice* is developed by collective organizing that works out the discovery's usefulness rather than by its relationship to theory or prior scientific knowledge.

    Practice as reflecting narrative structure and understanding. The unfolding of responsive actions to matters of significance that emerge within *practice* over time has a narrative structure and reflects narrative understanding (Rouse, 1996, pp. 158-165): Such actions have a history, involve present relational interactions in a meaningful situation, and are oriented toward future possibilities. But a focus on the narrative form of understanding makes an

additional point: Actions only make sense in light of the ongoing stories in which actors find themselves participating and how future possibilities might play out in "a field of possible narratives" (p. 160). The narrative understandings underlying intelligible action thus reflect both a grasp of ongoing action and its history and the probable consequences of completed future actions. In this sense, actions within *practice* reflect what Rouse (1996) has identified as narrative enactment—intelligible actions within *practice* are preceded by the construction and reconstruction of understandings that have narrative structures (p. 163). Rouse's position reverses typical views that stories are creative structures imposed on otherwise un-narrated occurrences and sequences of events and are therefore constructed to be about the matters described by them. Rather, Rouse has asserted that the very intelligibility of actions within *practice* is based on the narrative understandings embedded in the ongoing patterns of interaction and that such stories in construction are therefore essential features of *practice* and practical understanding. These stories are incomplete and subject to revision for several reasons: Participants in a *practice* situation have different perspectives and act within stories that have multiple possible endings; further, certain ongoing actions and possibilities are facilitated and others are resisted by features of the situation. New discoveries from inquiry may open new fields of possibility. Such stories may also be indicative of discoveries that could be transformative to a *practice* situation, where ongoing stories are reconstructed to consider new possibilities and reflect changing understandings about what really matters in conducting practice activities (Rouse, 2002, p. 338).

Collective meaning and significance, then, are intertwined within *practice* through narratives. The story of culture building introduced earlier is a story that plays out within narratives of practice situations with actual histories, actors, storylines, relations, and other

features serving as cultural resources to communicate collective meaning and suggest significance.

Practice theories and the practice study methodology. The works of Reckwitz (2002) and Orlikowski (2010) provide particularly useful orientations to practice theories and background for the practice study methodology I have proposed. Reckwitz classified practice theories as cultural because they locate explanations of action and social orders in knowledge, shared understandings, and meanings established through culturally available systems of symbolism. In his typology, cultural theories are to be fundamentally distinguished from economic theories, which characterize action in terms of individual interests and intentions, and from sociological theories, which explain action in terms of collective values and norms (pp. 245-246). Among all theories he identifies as cultural, practice theories identify the concept of "practice" as the location of appropriate social analysis, as distinguished from conversation between humans, texts and discourse, or the cultural idea of mentalism, which posits the mind or mental processes as the source of meaning and action. Orlikowski further distinguishes practice-theoretical literature and research based on whether the concept of *practice* is employed to refer to philosophy (*practice* as ontologically constituting social life and organizational reality), theory (*practice* as a theoretical lens or perspective to enhance understanding of organizational phenomena), or empirical phenomenon (*practice* as the practical doing of activities within or constituting such *practice* (p. 23).

Both Orlikowski (2010) and Reckwitz (2002) identified the multiple and potentially ambiguous uses of the singular term "practice." Reckwitz was particularly concerned with identifying what "practices" were for purposes of social analysis so as to retain the distinction he offered between cultural practice theories and other cultural theories of action based on

interpersonal, subjective interactions, discourses, and socialized products of mental activities. Reckwitz identified two separate uses of the term *practice* in theoretical literature—the singular practice (in the sense of praxis), which refers to practical human action, and the plural practices, which represented routinized and interconnected patterns of behavior and related understandings, know-how, motivation, and other features that may only be explained and understood as a whole and may not be reduced to particular elements.[14] Using Orlikowski's typology, either praxis (practical action) or practices (routinized patterns of activities) as characterized by Reckwitz could be approached as empirical phenomena; in his typology, however, only the routinized patterns that constitute practices are the constituting features of social life. These routines have ontological and theoretical significance by allowing human actions to be recognized and understood as meaningful and responsive. Such patterns and understandings embedded in practices may or may not incorporate relational interactions, discourses, and mentally intended action indicative of the other cultural sources of action identified by Reckwitz, but the performances of practices reflect meaning and significance independent of those other sources of cultural understanding (Reckwitz, 2002).

As noted in the Introduction, my empirical study and research framework for practice studies has adopted a broad conception of *practice*, which extends the conception of practices proposed by Reckwitz (2002) in the following respects:

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[14] By way of comparison, Pickering (1995) used the singular and plural of "practice" but with different implications. He also adopted a cultural perspective to "practice," describing scientific culture as "the 'made things' of science—in which I include skills and social relations, machines and instruments, as well as scientific facts and theories" (p. 3). Pickering was concerned with "scientific *practice*, understood as the work of cultural extension" (p. 3) and distinguished the smaller scale everyday practices consisting of repeatable laboratory activities of scientists, which were merely resources of "practice" and aspects of "culture" (p. 4). In Pickering's terms, scientific "culture" and "practice" are the facilitators of meaning, understanding and cultural transmission, while "practices" are merely tools of the trade.

- The broad conception of *practice* builds on the culturalist perspective identified by Reckwitz by acknowledging the systems of collective meaning and symbolism and the cultural resources that are available to create new collective meaning within *practice*.

- *Practice* incorporates relational interactions, discourses, and other forms of cultural understanding as *practice*-embedded dynamic resources as well as possible empirical examples of sources of collective meaning and significance, rather than distinguishing such factors as sources of meaning that are independent of *practice*.

- The broad conception of *practice* also encompasses the entire relevant situation therefore incorporates "practices" (in the sense of routinized patterns of activities) as meaning generating and as additional sources of dynamic influence.

- Rather than limiting social analysis to particular sets of regularly performed activities, the conception of *practice* in the Introduction does not predetermine the attributes or level aggregated activity that may be implicated in any use of the term "practice" or "practices." As specific examples, an empirical situation might reflect patterns of activities and relations termed "practices" that are (i) routinely and regularly followed over time (historically determined practices), (ii) newly developed and focused on changing historical practice patterns (transformation-oriented practices), or (iii) appropriately aggregated to represent the totality of all activities of similar professionals (such as professional practices). Each of the foregoing examples would fall within the scope of *practice* to the extent they were to become matters of significance that are influencing ongoing inquiry and organizing activities.

- The level of analysis of *practice* for purposes of any study utilizing the practice study methodology will be defined empirically by the scope of matters placed at issue, requiring change, or contributing to transforming of *practice* in the specific situation.

By adopting a strong form of "practice as perspective" as identified by Orlikowski (2010), the practice study methodology need not and does not take any position as to whether social and organizational reality in institutions is constituted within *practice* or whether *practice* in every instance is the smallest unit of analysis appropriate for organizational phenomena. Rather, the practice study methodology is intended to sensitize empirical research to matters of significance to *practice* and its direction; by doing so, emerging empirical conditions and developing understandings of participants, rather than the historical scope of routine performances, will determine what matters are of significance in understanding how a *practice* should be characterized. These situated conditions and understandings presented in the research process, then, have determined the scope of the *practice* situation that has been incorporated into my interpretation of HSIR organizing.

Strategy-as-practice literature. Practice theories have been the basis or subject of a growing body theory and literature in the strategy development area known by the title "strategy-as-practice," (e.g., Golsorkhi, Rouleau, Seidl, & Vaara, 2010; Jarzabkowski & Spee, 2009; Johnson, Langley, Melin, & Whittington, 2007) and in the area of technology studies (e.g., Leonardi & Barley, 2008; Orlikowski, 1992, 2000, 2007).

Strategy-as-practice research and theory applies aspects of practice and strategy theories principally to emphasize the practical activities of people engaged in doing strategy work. At one level, this emphasis has invited inquiry into the details of what strategy practitioners at all organizational levels actually do in the making of strategy, but strategy research has also

typically sought to understand the effects of aggregated activity on organizations and society (Whittington, 2006). Based on these purposes and utilizing Reckwitz's (2002) distinction between strategy praxis and strategy practices, Whittington has proposed a basic research-oriented framework based on the concepts of strategy practitioners (the makers, shapers, and doers of strategy), strategy practices (the patterns of activities and related resources available to guide and support specific activities), and strategy praxis (defined as the specific activities performed in *practice*). In his model, strategy practitioners are conceived as reflexive, artful improvisers who enact organizational strategy by applying, adjusting, and improvising around practical resources embedded within available activity and resource patterns. A review of the strategy-as-practice literature (Jarzabkowski & Spee, 2009) also used Whittington's emphasis on practitioners, practice, and praxis to create a framework to characterize strategy-as-practice theoretical literature and research studies. Their work introduced the idea that strategy-as-practice literature could be appropriately characterized based on the presented levels of analysis of strategy praxis (representing interconnected patterns of activities connected to wider concerns) and the level of action of individual or aggregated strategy practitioners. Through 2009, a significant percentage of the identified empirical studies involved either individual or aggregated organizational actors acting at micro or meso organizational levels. The literature review, however, emphasized that a wide range of methods and perspectives were employed in the studies. Methods and theoretical resources reflected in the summarized studies included applications of identity and role theories, ethnomethodology, cognitive psychology, and discourse analysis. Similarly, the studies contained a wide range of examples of what constituted a "practice" for purposes of the studies. The authors observed that even the practice theory perspectives that formed the impetus for strategy-as-practice work were not used in a consistent

way in the summarized studies and were supplemented by a wide range of other theoretical perspectives. The literature review confirmed that practice theories have not been used to develop consistent research approaches to strategy-related practices in organizational settings. The review nevertheless suggested that practice-related research may constructively help to conceptualize and empirically document connections between the collective activities of practice participants and groups and outcomes of organizational interest; such organizational outcomes of interest included those involving strategic and organizational processes and desired organizational change.

Fenton and Langley (2011) have theorized the importance to strategy practice studies of including narrative content, in the form of strategy texts, and also by introducing a narrative perspective to the typology proposed by Whittington (2006) and employed by Jarzabkowski and Spee (2009). Their analysis has provided further essential connections between practice-based and narrative studies of organizational phenomena. In general, these authors were not merely concerned with the content of strategy texts but how narratives within organizations were essential for sensemaking, creating culture and identities, constructing the meaning of experience and ongoing action, and even developing actions essential to organizing. More particularly with reference to Whittington's focus on practitioners, practices, and praxis, Fenton and Langley (2011) have asserted that strategy in practice is accompanied by corresponding "practitioner narratives," "practice narratives," and "praxis narratives" (p. 1177). These authors have recognized that such narratives are not likely to be presented in full form in empirical settings; they therefore have called for research that takes "an integrative narrative-based perspective on strategy as practice" focused on the developing of shared understandings while considering "the fragmented, partial, multi-level and continually 'becoming' nature of such storytelling"

(p. 1178). The narrative approach proposed by Fenton and Langley would cover the full range of narrative content from large picture discourses to the antenarratives (Boje, 2001) that foreshadow possible narratives before stories can be told.

The strategy-as-practice literature is subject to the important critique that it has become overly focused on the micro activities of individuals. In part, this conclusion is supported by the gaps in strategy-as-practice research identified by Jarzabkowski and Spee (2009), and also by the application of cognitive, identity, and other individually-oriented theoretical perspectives imported into the studies they reviewed. Practice theory concepts also are accompanied with research agendas that have methodological implications (Miettinen, Samra-Fredericks, & Yanow, 2009). While ethnography, ethnomethodology, and activity theory provide alternative methods for studying practices in detail (Miettinen et al., 2009), Nicolini (2011) has cautioned that a practice-based approach need not always require micro studies. In his view, such a position would undercut one of the essential purposes of practice theories, which "is to substitute the dominant belief that subjects are the ultimate source of meaning and knowledge with the view that knowledge and meaning reside in a nexus of practices (Schatzki, 2001)" (p. 603).

Chia and MacKay (2007) have asserted that the continuing emphasis on individual actions and intentions apparent in the strategy-as-practice literature fails to make a necessary break from process theory traditions, which I will include in a discussion of organizing. This failure has resulted in continuing the typical locus of research and analysis at an individual level—whether individual human participants, or the individual organizations that house their practices. Their complaint also extends by implication to the very distinction between micro and macro levels of analyses; the distinction between what is micro and macro reflects a similar entity orientation and implicates the continuing problematic need to theorize and conduct

research documenting how individual actions contribute to organization- and macro-level outcomes. These authors have alternatively proposed to use practice theories "to 'flatten' such macro-micro distinctions by insisting on the primacy of a dynamic and emerging field of practices as the starting point for social analysis" (p. 224). Within such an orientation, "both micro- and macro-entities are viewed as secondary stabilized instantiations of practice-complexes: individual agency and/or structure are no longer accorded ontological primacy in this explanatory scheme of things" (p. 224).

The strategy-as-practice literature also is subject to criticism from a perspective raised by technology studies and their concern with the effects of human interaction (interpersonal) and material interaction (human interaction with technology and other things). How technology is used in material interactions may constitute what the technology becomes in practical use and also who the operators become through the use of the technology (Leonardi, 2009). The idea that meaning and identities are constituted within *practice* (Schatzki, 2002, pp. 19-22) is particularly confirmed by technology studies. Technologies become meaningful (i.e., constituted with collective meaning) to *practice* through use and are identified (i.e., constituted with identity) by how they are used rather than by their technical capabilities. More critically, technology users also become identified in part with how they use a technology and whether the results they produce through such use contribute to collective activities in ways that are collectively recognized as meaningful or not meaningful.

Orlikowski (2007), an early adopter of practice theory perspectives (see Orlikowski, 1992, 1996, 2000), has argued that materiality should be considered a persistent feature of organizational life, in the same way that sociality is featured. The failure to account for impacts of material things as more than just an occasional concern, in Orlikowski's view, arises from

over-reliance on human-oriented approaches to understanding as reflected in the strategy-as-practice literature summarized in the preceding few paragraphs. Her proposed "sociomaterial" perspective does not privilege either a human or material view of organizational life, recognizing instead that "materiality is integral to organizing" and "that the social and material are *constitutively entangled* in everyday life" (p. 1437). This view of entanglement posits that there are no independent entities that are not partially or wholly constituted through social and material interactions that occur in practice (p. 1438). This position would substitute a fully relational perspective for an entity perspective in practice studies by emphasizing that any such entities are products of relations occurring within *practice*.

The preceding summary of certain practice theory literature further helps to orient my research study of HSIR organizing and the practice study methodology. The summary of strategy-as-practice literature emphasized the particular orientation of existing research to activities and the impacts of relational interactions. These areas of emphasis are preserved by sensitizing research and interpretation to dynamic resources operating in specific research situations and the cultural resources that carry meaning through *practice* narratives. On the other hand, the strategy-as-practice literature review (Jarzabkowski & Spee, 2009) suggested that research studies had been approached from a wide range of theoretical perspectives and that practice theories or concepts had not been consistently used. The practice study methodology I am using in this research seeks to provide a *practice*-located alternative methodology that could be usefully employed to understand *practice*-embedded dynamics and changing *practice* situations in a wide range of settings. Consistent with the objectives of Chia and MacKay (2007), the proposed methodology focuses on the dynamics that exist in a field of practices and would employ a narrative-based approach (Fenton & Langley, 2011) to capture and emphasize

the dynamic sensemaking and organizing that may be evident in changing organizational situations.

Professionals and professional learning. My organizing theme for this portion of the literature review is *practice* as professionals organizing emerging collective culture. The second key term, professionals, captures aspects of the literature generally related to the professionals and the professions. Professionals are commonly thought to engage in practices by performing skillfully and applying professional knowledge. The broad conception of practice forces a rethink of that simplistic proposition: Professionals are collectively engaged within *practice* and act not only to apply skill but also to inquire and organize with respect to other matters that become meaningful and significant to continuing or transforming *practice*. How does the existing literature of the professions relate to this expanded conception of *practice*?

The literature of the professions. Within each profession, much of the work of professional life has been focused on achieving predictability and control in professional performances through educating, developing formal and informal rules of practice, and developing and refining particular practice settings that display and influence professional performances (Argyris & Schön, 1974). The study of professional life is becoming increasingly important for a very different reason: Professionals are the gate keepers to institutions that lie at the heart of advancing societies, including those institutions providing health care, education, and justice (Scott, 2008), and such institutions need to change to meet changing societal requirements. In turn, changing requirements imposed on professionals run the high risk of creating perceived or real conflicts with the traditions, histories, and values the professionals share within each profession (MacIntyre, 2007).

Professionals in the different professions share similar challenges. Organizations employing professionals are impacted by macro-level change involving globalization and economic and societal forces; in turn, these organizations adopt meso-level managerial initiatives that impact professional roles and organizational structures involving professionals (Becher, 1999).[15] New technologies, changing knowledge requirements, and new techniques funneled through organizations all require changes to professional activities and relations at the micro level (Becher, 1999). Organizational objectives adopted in response to such factors may not consider and even may compromise the traditions and values of the professionals those institutions manage (MacIntyre, 2007). Conflicts between managerial and professional rhetoric (e.g., Hoff, 2003) and organizational and professional commitments (e.g., Thompson & Van de Ven, 2002) may be implicated. These tensions can contribute to practical issues for professionals and unexpected outcomes. As one example, professionals have frustrated outcomes from new technology and revisions to production processes they favored by the unintended misunderstandings they socially created that limited their use of the technology (e.g., Leonardi, 2009). On the other hand, professionals have achieved outcomes desired by an organizational initiative, but only by tapping knowledge through social connections that extended beyond organizational boundaries (e.g., C. A. Olson, Tooman, & Alvarado, 2010; Reardon, 2004). Not all resulting professional challenges have technical solutions; professionals

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[15] Becher (1999, pp. 61-88) has identified a hierarchy of change forces affecting professionals. At the broadest conceptual level are social changes, which include changes in internationalization, economic pressures, and policies. At a middle level of impact are changes in the contexts of professional services including changes in client attitudes, business values, and managerial requirements. Becher also has acknowledged forces at the cognitive and practice levels, which include changing knowledge, techniques, specialties, sub-specialties, technology, and quality standards.

may be required to explore adaptive responses that implicate changes in values (Heifetz, 1994; Heifetz, Grashow, & Linsky, 2009). Where professional activities become inconsistent with changing environmental conditions or organizational requirements, professionals must inquire and organize to develop adaptive responses. What theories help to explore professional life when it extends to matters beyond the technical prescriptions of the professional disciplines?

Each profession maintains an infrastructure dedicated to research matters pertinent to the discipline and to educate and train its professionals in essential knowledge and skills. A starting point for a broader view of professional life is through the work of academic disciplines outside of the professions. Interest in professional life from outside of the professions has been principally focused on the professions themselves rather than on professionals or collective professional action. As summarized by Scott (2008), the professions have principally been approached theoretically and in studies oriented to macro level matters. These macro concerns have included consideration of broader forces shaping the social environment and the structuring and effects of large-scale social aggregates, such as professions, institutions, and sets of similar organizations. Using Scott's (2008) typology, some of the sociological work concerning the professions has focused on their distinctive functional characteristics, including specialized knowledge and skills and the norms, rules, and regulations that affect professional activities within each of the respective professions.[16] A more comparative approach to understanding professions as vehicles for the exercise of monopoly and political power also developed in the 1970s. While this work was grounded in the historical development of the professions (e.g.,

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[16] Although such analyses tend to be profession-specific, general approaches to education and development activities across professional boundaries may be developed (e.g., Shulman, 1998), and comparative approaches to the professions have also been applied (e.g., Becher, 1999).

Larson, 1977), the comparative approach encompassed a conflict perspective that explored how the professions have established monopoly positions (Larson, 1977) and have competed with each other for exclusive control over particular sets of professional activities (Abbott, 1988). These perspectives ignore the work of professionals and focus on the aggregated, macro effects of such actions.

A third perspective urged by Scott (2008) is an institutional perspective on the professions, of which he is a leading proponent. Scott's institutional perspective seeks to understand not only how the professions have become incorporated into institutional settings, but also how professionals act as institutional agents—the "definers, interpreters, and appliers of institutional elements" (p. 223). These elements consist broadly of rules, norms, and beliefs that professionals construct for institutions to regulate and prescribe action and to give meaning in organizational life (p. 222). These constructions in turn create legitimacy of the professions, guide professional behavior, and support generally held cultural views affirming the moral authority and wisdom of professionals and the societal significance of their institutions.

While Scott's (2008) institutional framework is principally concerned with the impacts of larger social forces and aggregated professional and institutional activities, his framework recognizes that professionals collectively fill creative, communicative, and problem-solving roles that help to construct and change both professions and institutions. He also identified certain forces endogenous to the professions that have been drivers of changes to the professions and institutions, including increased specialization, expansion of knowledge, and changes in professional functions. In this respect, Scott's framework starts to identify operative relationships among the functional, conflict, and institutional perspectives he identified: Understanding how functional changes in collective professional and institutional activities,

roles, and structures occur should be grounded in identifying the collective responses of impacted professionals to shifting forces and the conflicts such responses may produce.

Researchers studying professionals typically have employed either a macro level of analysis, focusing on the aggregated effects of professional activities (e.g., Abbott, 1988), or a micro level of analysis, focusing on individual professionals (Becher, 1999). Meso-level attention to the shared activities of working groups of professionals in organizational contexts is less common. These shared activities are the constructive drivers of professional and institutional structures and functions identified by Scott (2008). As summarized by Becher, only a limited amount of empirical research concerning the professions or professionals could be characterized as meso-level research exploring issues arising at the interface of professional and organizational concerns. As noted above, such research is of growing importance because forces of broad social change increasingly impact practicing professionals through changing organizational settings and requirements. In turn, the imposition of new organizational requirements compels inquiry and organizing by professionals to make changes in aspects of their collective activity patterns and arrangements.

New collective engagements and achievements of professionals oriented to transforming health care delivery will be built upon new understandings from discoveries about what works and what is important as professionals experiment collaboratively across traditional disciplines. The physicians and other medical care professionals who organize to implement health system transformation strategies (Porter & Lee, 2013), including the professionals who collaborated to organize the Health Systems Innovation and Research Program at the University of Utah, must address practical challenges in their organizing activities that are beyond the concern of their technical knowledge and skills. These challenges will arise in organizing across established

professional and organizational boundaries by creating integrated practice units, measuring patient-level outcomes and costs, integrating care across facilities, and expanding care geographically (Porter & Lee, 2013). Practical challenges will arise in developing and accessing practically useful health care data and research, which will require measuring patient outcomes, measuring costs, developing new payment strategies, and building new information infrastructure (Porter & Lee, 2013). Health care reform strategies will impact patients by requiring the practical integrating and evaluating of care involving multiple specialties and facilities across full care cycles (Porter & Lee, 2014). These challenges reflect underlying categories of generic issues in health care— boundary issues, data/research issues, and integration issues—that must be confronted by the collective organizing actions of those professionals. The storyline of how new understandings may arise from confronting these issues is compelling: By collaborating across boundaries, professionals learn from each other, attend to new measures of outcomes developed from the contributions of multiple disciplines, and develop enhanced understandings about how to organize new forms of integrated care. In turn, exemplars of integrated care, communicated through stories of cross-disciplinary achievements, become the building blocks of organizational and health system transformation. Engaging with these issues will require learning outside of classrooms and beyond the scope of typical professional performances.

Learning theories pertinent to professionals in action. Dewey's (1938) concept of inquiry covered in the Introduction links closely to his more comprehensive philosophy of learning through experience (Dewey, 1988). As summarized by Elkjaer (2001), Dewey's (1938) concept of inquiry is a method of learning through dealing with uncertain conditions, and his concept of experience (Dewey, 1988) provides for the content of knowing that occurs from such

experiences through reflection. Experience provides for such reflective learning opportunities by offering new opportunities to grapple with unfamiliar problems and use past experience to understand changing conditions (Dewey, 1988). Dewey's (1938, 1988) theories are based on the recognition that activities and experiences are socially situated. These theories share a common foundation with the work of Lave and Wenger (1991), which has emphasized situated learning through participation in practices. More particularly, they define learning as occurring through participation in communities of practice; as Lave (1996) described with reference to such communities of practice, "rather than particular tools and techniques for learning as such, there are ways of becoming a participant, ways of participating, and ways in which participants and practices change" (p. 156). From Lave's (1996) perspective, the constructing of learning through participation in practices is the equivalent of constructing "identities in practice" (p. 156). Her work started out to explore the so-called informal learning that occurred in apprenticeships, and she concluded "that it was not just the informal side of life that was composed of intricately context-embedded and situated activity; there is nothing else" (p. 155).

As introduced in the first chapter, Schön (1983, 1987) also approached the issue of knowledge in professional practices as a situated activity. He acknowledged the importance of research-based technique to address known problems but questioned that professional expertise could be based solely on the application of such knowledge. Schön (1987) criticized the positivist view of practice knowledge in part because the application of theoretical knowledge could not provide technical answers to address situations of uncertainty, uniqueness, and value conflict regularly faced by professionals; further, he observed that scientific research and theoretical knowledge could not account for the artistry in practices that was evident in the performances of professionals who successfully addressed such situations. In situations of

uncertainty, uniqueness, and value conflict, theoretical knowledge cannot be applied because the solutions are not clear, the problems are not sufficiently defined, or the situation is otherwise indeterminate. Nevertheless, gifted professionals find ways of using "the nontechnical process of framing the problematic situation" (Schön, 1983, p. 41) to "organize and clarify both the ends to be achieved and the possible means of achieving them" (p. 41). The learnable knowledge reflected by the "artistic ways of coping" (p. 42) with problematic situations and associated phenomena does not count as rigorous from a positivist perspective, but dealing with such issues is central to professional practice. As an alternative to a positivist epistemology, Schön (1983) proposed an epistemology for practical professional activities that honors the knowing embedded in "spontaneous, intuitive performance of the actions of everyday life" (p. 49), a knowing-in-action (p. 50). Schön (1987,) distinguished between "know*ing*"-in-action, which is reflective of the spontaneous, dynamic quality of ongoing intelligent action, and "know*ledge*-in-action," which is the constructed description of such "knowing" that makes explicit what was otherwise the tacit intelligence evident in the ongoing action (p. 26). Through reflection on such knowing-in-action, a form of tacit understanding is made a more explicit form of knowledge. As an epistemology of practice, Schön (1987) was not interested in a reflection that could facilitate the historical recounting of events; rather, his concern was to identify a still pertinent "*reflection-in-action*" (pp. 49-69) that directs thought toward the assumptions of routine actions, possible strategies of action, the unique circumstances of the situation, the consequences of experimental approaches, and other factors relevant to ongoing action in practice. Such reflection-in-action occurs during the period of time, what Schön called the "action-present" (p. 62), when such reflection may still be pertinent to the flow of action. Schön (1987) postulated that this reflection-in-action is central to the artistry of professionals who reframe problems, experiment,

and develop approaches to unique, unstable, or otherwise problematic situations. While research-based technique in the professions plays a central role in practice, it occupies a "limited territory bounded on several sides by artistry. There are an art of problem framing, an art of implementation, and an art of improvisation" (p. 13).

Schön (1987) made a particularly compelling case for the art of design applicable to all professionals. While his more detailed design examples described the practices of architects, he analogized design artistry to Deweyan inquiry and its process of converting indeterminate situations to actionable ones in "a reflective conversation with the materials of a situation" (p 42). "Designers construct and impose a coherence of their own," and act within a "web of projected moves and discovered consequences and implications, sometimes leading to reconstruction of the initial coherence" (p. 42). The constructions of professional artistry include the artifacts designed by professionals, which may include drawings of architects, the arguments of lawyers, and the diagnoses of physicians. Importantly, professionals not only are makers of artifacts, but also of their practice methods, situations, roles, and broader practice contexts. Thus, in applying the art of design, "[practitioners] frame problems and shape situations to match their professional understanding and methods, they construct situations suited to the roles they frame, and they shape the very practice worlds in which they live out their professional lives" (pp. 42-43). This reflective design process stands out against everyday professional activity described by Schön (1987) as "countless acts of attention and inattention, naming, sensemaking, boundary setting, and control" (p. 36), through which the practitioners "make and maintain worlds matched to their professional knowledge and know-how" (p. 36). It is therefore through engaging in reflection-in-action, that practitioners "remake a part of their practice world and

thereby reveal the usually tacit processes of world making that underlie all of their practice"

(p. 36).

Dewey (1938, 1988), Lave and Wenger (1991), and Schön (1983, 1987) each have

identified how professional learning occurs in action oriented to discovery and experience with

problematic situations. A certain knowledgeable grasping together of circumstances and action

can only be accomplished in action (Schön, 1987, p. 83). These learning philosophies suggest

that learning and knowing are not only situationally embedded but are essentially social and

relational in nature. For this key reason, learning and knowing are not merely properties of

individual persons or products of a personal mental activity of reflection. The knowing that

develops through experience is not only implicated in the individual performance of professional

activities, but in the collective construction of actionable *practice* situations and *practices*

themselves (Schön, 1987). Certainly, timely reflection-in-action may reveal an underlying logic

that both promotes artful problem framing, designing, implementing, and improvising and may

make explicit the tacit knowing that is embedded in artistic professional performance. But even

without surfacing tacit knowledge, the knowing obtained in action is demonstrated by the active

reconstructing of a *practice* situation through the very activities of problem framing, designing,

implementing, and improvising. In the work of organizing, these activities are collective

undertakings. The underlying logic of collective *practice* reconstructing is revealed in responses

to emergent conditions, dynamic influences, and relational interactions that occur beyond the

scope of technical performances. *Practice* reconstructing is evident in changing collective

priorities, directions, and activities that achieve progress toward desired practical outcomes. As

noted earlier, collective activities are held together by practical understandings (Schatzki, 2002)

that have a narrative structure (Rouse, 1996). The reconstructing of *practice* is preceded and

accompanied by the constructing and reconstructing of narrative understandings about what is significant in ongoing stories shared by participants in *practice*.

In summary, the learning, inquiring, organizing, and designing activities described above reflect storylines of culture building through *practice*. Features of a situation are artfully constructed into meaningful new relations through inquiring and organizing, resulting in a remaking of the *practice* situation. Those features brought into new relation to each other become cultural resources for constructing and expressing new practical understandings that arise while organizing- and designing-in-action. In turn, those understandings become significant cultural resources informing the redesign of current solutions and the framing of future design problems. Professional culture is extended through this practical process of organizing and designing.

Practical inquiry and professional knowing. My study of the organizing of the Health Systems Innovation and Research program is centrally concerned with the collective practical actions (and action trajectories) of professionals who are working to effect meaningful change in health care delivery and those who have something at stake in the success or failure of those efforts. What is the nature of the learning and knowing that might be featured in such a study? Much of the literature within each of the professions reflects similar underlying premises concerning knowledge (Schön, 1987): Knowledge essential to professional practice may be abstracted from specific conditions, taught as concepts, and applied through analysis. Further, the quintessential professional activity is the rules-based application of such disciplinary knowledge. These two sentences reflect the assumptions of "technical rationality" (Schön 1983, 1987). Even the surfacing of tacit knowledge through the reflection-in-action proposed by Schön could be misinterpreted as a way to generate new technical rules to be applied through analysis.

Technical rules and doctrines, however, do not provide a starting point for understanding professionals engaged in inquiry and organizing under conditions of uncertainty where the technical prescriptions do not apply. Different forms of knowing are more directly relevant to developing new, collective, and practical achievements.

Professionals develop experiential knowing and competence through experience that does not involve applying abstracted theoretical or disciplinary knowledge (Dewey, 1988; Dreyfus & Dreyfus, 1986; Jarvis, 1999; Lave & Wenger, 1991; Rouse, 1987, 1996; Schön, 1987; Sullivan, 2005). Schön (1987) proposed to look instead to professional knowing that demonstrates artistry in dealing with problematic situations through reflection-in-action (pp. 32-36). Dealing with problematic situations involves practical issues that are approached by drawing analogies and metaphors from prior experience (Sullivan, 2005, p. 198). Professionals make use of experience through narrative thinking rather than by applying abstract concepts (Bruner, 1986; Sullivan, 2005). Stories of experience focus on the key details of situations essential to progress and that may have significance for other situations (Sullivan, 2005, p. 198). Further, inquirers seek answers to problems in the context of ongoing practical activity, which has a narrative structure; even scientific analysis they undertake must ultimately be reintegrated with practical assessment of what is going on and how best to proceed (pp. 244-245). Inquirers reestablish meaning and the capacity for further action by using narrative connections from their experiences to integrate analysis with practical concerns (Sullivan, 2005, p. 245). This knowing is further embedded as inquirers reshape and integrate their experience as they seek to discover what is hidden but suggested by their ongoing work (Polanyi, 1966). In this way, inquirers establish action trajectories toward future possibilities; inquirers get into action and change problematic aspects of situations as they make sense of their ongoing stories and develop future possibilities.

Understanding, knowing, and meaning that arise in the course of practical inquiry are socially constructed and relational creations (Gergen, 2009a, 2009b). These understandings reflect a local knowing-how (Rouse, 1987) that is exhibited by situationally responsive and meaningful action. If a situation is uncertain, then what becomes known is whatever an inquirer discovers through practical inquiry and organizing that facilitates further action toward possible future outcomes. Professionals understand these situations and act knowledgeably without articulating or applying theoretical knowledge claims; rather, such local knowing is best illustrated and communicated by its useful incorporation into further practical actions (Rouse, 1987), reframing of problems, and move-testing experiments (Schön, 1987). In turn, local discoveries and knowing become cultural resources that may be incorporated into the ongoing webs of activities, cultural beliefs, and significance that form the background for meaningful action (Geertz, 1973; Rorty, 1991).

The essential purpose of the practice study methodology I am developing and applying is to capture and explore these locally situated understandings and matters of collective meaning and significance to participants in inquiry and organizing efforts. Importantly, the methodology seeks to explore these activities for what they are—reports of the practical interpretative activities of the professionals involved, where interpretation "is taken to be the working out of the possibilities open within a situation rather than the translation of theories and beliefs" (Rouse, 1987, p. 48). The distinction between practical interpretation and theoretical application is critical: Such practical interpretations are "concerned with how one lives, and how one makes sense of how others live" (p. 48), with "coming to see what is at issue in how someone lives" (p. 48), and with "what is the matter" (p. 49); by contrast, theoretical application is concerned

with placing ongoing activities within a predetermined or presupposed theoretical framework.[17] The practice study methodology focuses research on what matters and makes sense to participants and does not seek to apply, generate, or confirm theoretical propositions.

Importantly, the possibilities that may be presented in a situation are not developed from externally-derived theories. Rather, in practical action "what is understood is the way one's actual situation hangs together and makes sense as a field of possibilities for interpretation" (Rouse, 1987, p. 63). Such an interpretation takes the form of practical action. "Above all, it is the way one's situation has a direction to it, pointing beyond itself toward future possibilities" (p. 63). In turn, future possibilities may act as cultural resources in developing new meaningful collective action toward such possibilities.

Organizing as processes of organizational becoming. Organizing is the third concept in the theme *practice* as professionals organizing emerging collective culture. This section of the literature review captures aspects of the literature generally related to organizing and process theories. As introduced in the first chapter, HSIR professionals are engaged in organizing new activities and arrangements with implications for health systems transformation. These organizing activities can be conceived as constituting ongoing processes focused on achieving change in organizational outcomes.

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[17] Rouse's (1987) criticism of theoretical interpretative approaches is particularly telling. Any situation is open to conflicting potential theoretical claims. Each theoretical frame brings with it certain language to explain theoretical positions, but, as Rouse observed, "there is no nonlinguistic, pretheoretical fact of the matter to which we could appeal to resolve disagreements about how the world is" (p. 47). Thus, "deciding what is true is equivalent to deciding which sentences to accept. But sentences are acceptable only on the basis of their relation to other sentences we already accept" (p. 47). Theoretical "truth" therefore must ultimately be reduced to what participants collectively recognize as meaningful through their "shared sense of what is the case" (p. 47). A researcher cannot provide a theoretical truth perspective to a situation that brings any more meaning than has already been experienced and evidenced by the actors in the situation.

As memorably emphasized by Weick (1979):

> In the interest of better organizational understanding we should urge people to stamp out nouns. If students of organization become stingy in their use of nouns, generous in their use of verbs, and extravagant in their use of gerunds, then more attention would be paid to process and we'd learn about how to see it and manage it. (p. 44)

Weick's (1979, 1995) concepts of organizing and sensemaking are reflections of a process orientation. A process orientation in organizational studies attends to ongoing actions, events, dynamics, and emergence as distinguished from substances, contents, stabilities, and orders (Hernes & Maitlis, 2010; Langley & Tsoukas, 2010). As summarized by Langley and Tsoukas (2010): "A process orientation prioritizes activities over product, change over persistence, novelty over continuity and expression over determination. Becoming, change, flux as well as creativity, disruption, and indeterminism are the main themes of a process worldview" (p. 2). A process orientation may be reflected in certain positivist research seeking to infer causal connections between independent and dependent variables or in exploring connections of variables to processes; a stronger form of process research, however, seeks to identify events and sequences with generative potential (Sminia, 2009). Orienting to process is frequently reflected by the extensive use of gerunds and verbs (Langley & Tsoukas, 2010; Weick, 1979).

Weick's (1979) particular theory of organizing is based on the need to reduce ambiguity confronted in uncertain situations; organizing proceeds through processes of making sense of ongoing events consensually, establishing mutual expectations, and crafting interdependent roles and actions directed to achieve desired outcomes that remain fluid. Organizing is thus fully process oriented—sensemaking re-interprets events to create "plausible histories" (p. 13) in order to explain present and future actions. According to Weick (1995), the sensemaking that occurs in organizations involves retrospectively imposing new meaning on past events (the sense) while also enacting a part of the environment to be further acted upon (the making). Sensemaking has

a certain logic—"How can I know what I think until I see what I say?" (Weick, 1979, p. 133). From a performative, *practice* perspective, this logic may be restated as "we won't know what is meaningful or significant to our situation until we act and understand the implications of what we've made." Sayings that occur during sensemaking and organizing, in turn, make connections among events that are better framed using narrative understanding rather than evaluative or argumentative approaches (Weick, 1995). As noted by Weick (1995), "the requirements necessary to produce a good narrative provide a plausible frame for sensemaking. Stories posit a history for an outcome. They gather strands of experience into a plot that produces that outcome" (p. 128). Of course, not all stories can be fully told when initially experienced. "People are often thrown into pre-existing organized action patterns. They experience the middle of a narrative but only the vaguest beginnings or ends" (Weick, 2011, p. 145) and act on the belief that narrative fragments will ultimate form a story that can be told. As suggested by the earlier discussion of practice as culture, sense and meaning are not only communicated by temporal sequencing and final outcomes but also by the other explanatory logic in the narrative connections made among past events, current situations, and future possibilities identified in a storyline. Such identified narrative features may take on collective meaning and significance to participants in the situation, acting as cultural resources. This capability grounded in narrative understanding allows us to make sense of what is going on through partial storylines before the endings or outcomes occur.

The process worldview exemplified by Weick's concepts of organizing and sensemaking has been used in organizational research for the development of organizational strategy (e.g., Sminia, 2009), and more specifically for the understanding of emergent strategy (Mintzberg & Waters, 1985). This particular process view of strategy has provided the starting point for the

developing strategy-as-practice literature and studies reviewed earlier. The process orientation

has also been applied to a number of different organizational phenomena using a range of

methods (Hernes & Maitlis, 2010), including those addressing organizational change (e.g.,

Orlikowski, 1996; Tsoukas & Chia, 2002; Weick & Quinn, 1999). The focus on organizational

change is particularly relevant to the study of HSIR organizing. Tsoukas and Chia (2002) have

argued that change rather than organization should have ontological priority in organizational

change studies and that organizations should be reconceived in terms of "*organizational*

becoming" (p. 570). Such a shift is consistent with prioritizing the significance of change-

oriented actions, including those implementing flexible organizational structures, changing

culture, attending to power and politics, assuring organizational learning, and redefining

managerial actions around attaining collective vision and fostering risk-taking, experimenting,

and learning (Burnes, 2012). As noted by Tsoukas and Chia (2002):

> Unless we have an image of change as an ongoing process, a stream of interactions, and a flow of situated initiatives, as opposed to a set of episodic events, it will become difficult to overcome the implementation problems of change programs reported in the literature. (pp. 568-569)

The narrative-based practice study methodology utilized in this dissertation study shares

a process orientation in common with process and organizing theorists and process and

sensemaking research. The proposed research framework implements a process orientation by

attending to dynamic influences in changing organizational contexts, the use of processes as

dynamic resources, and the narrative connections that may create process-like attention to plot-

connected actions and sequences of events. In contrast, however, to certain process studies, the

concept of dynamic resources is sensitized to relations among collective actions and features of

situations in understanding how changes to *practice* occur (Chia & McKay, 2007; Gergen,

2010). Further, the methodology does not seek to identify process variables or sequences with

pre-theorized causal effects on organizational outcomes. Such approaches would be inconsistent with a research methodology based in practice and narrative theories, which should be oriented to relational dynamics and narrative connections evident in empirical settings and data.

Emergence and uncertainty. The fourth concept of the theme *practice* as professionals organizing emerging collective culture relates to emergence and uncertainty. The previous points have explored literatures pertinent to professionals operating outside the boundaries of technical rationality to address matters at issue in *practice* through inquiry and organizing. As emphasized by a process perspective, such activities occur in the context of changing influences and the emergence of new matters of significance. Theories based on complexity sciences prioritize change over stability and are particularly useful to understand the dynamics of emergence and its impact on "*organizational becoming*" (Tsoukas & Chia, 2002, p. 570).

Complexity and system theories have been used to enhance understanding of organizational structure (e.g., Hatch & Cunliffe, 2006; Marion, 2008; Stacey, Griffin, & Shaw, 2000), leadership (e.g., Griffin & Stacey, 2005; Uhl-Bien & Marion, 2008; Uhl-Bien, Marion, & McKelvey, 2007; Wheatley, 1999), organizational learning (e.g., Senge, 1990; Stacey, 2001), and organizational change (e.g., E. E. Olson & Eoyang, 2001; Shaw, 2002). These theories share a common focus on the dynamic effects of emergent patterns of interactions (Marion, 2008; Stacey et al., 2000), relationships (Stacey, 2001; Wheatley, 1999), and self-organization (E. E. Olson & Eoyang, 2001; Wheatley, 1999) in creating holistic and adaptive organizational outcomes. This orientation to interactive dynamics, relational engagement, and the connection of such factors to holistic and adaptive achievements is shared by the practice study methodology employed in this dissertation study of HSIR organizing.

These theories derive from work within the fields of chemistry, biology, physics, and cross disciplinary science studies and therefore provide analogies or models to inform how organizations work (Stacey et al., 2000). The modeling, however, can be fairly abstract. As an example, a key focus of complex adaptive systems (*CAS*) theory is to identify the dynamic mechanisms that emerge from complex interactions (Marion, 2008). As presented by Uhl-Bien et al. (2007), such mechanisms pertinent to leadership in organizations may include "resonance/aggregation," "catalytic behaviors," "dissipation and phase transitions," and "accreting nodes" (p. 308). Modeling at this level of abstraction does not immediately translate into images of social or material interactions that may be present in organizational settings. Alaa (2009) has reviewed pertinent complex adaptive systems literature and identified a number of drivers of dynamics anticipated by CAS principles. These factors include: Intangible social construction factors that promote communication, collaboration, team work, and trust (pp. 23-24); and tangible adaptive factors that promote inter-relating, interdependence, flexibility, problem-solving, and obtaining quick feedback through experimentation (pp. 24-25). Alaa also acknowledged the importance of enabling infrastructure, which includes considerations of hierarchy, organizational structure, cultural factors, management and leadership factors, rules, power, and external influences (p. 25). She also emphasized how control factors tend to reinforce relationships, enhance system stability, and promote system equilibrium within an edge of chaos (p. 25). These insights may be used to analyze change promoting or hindering dynamics in the study of organizing activities.

As suggested by Stacey et al. (2000), complexity thinking should be distinguished in certain respects from systems thinking in the understanding of social organizing activities. Systems thinking has historical links to mechanistic models of organizations. The residual

consequences of this history are reflected in part in the attention to mechanisms and emergent factors operating within bounded systems. A typical systems approach incorporates two premises that are inconsistent with a broad concept of *practice* and the objectives of the *practice* stance utilized in my dissertation research. First, systems thinking takes an outside view of a system and its subsystems and mechanisms; such a view may assume that all of the parts and operations of the system, including human action, are subject to applicable rules or laws (pp. 57-61). In contrast, a broad conception of *practice* assumes an open rather than bounded perspective on the situation and seeks to understand the transformative effects of social and material interactions and a broad range of other dynamic features of the situation. Second, the principles and tools of systems approaches are framed to be applied by managers in the context of organizational hierarchies in order to achieve control. In contrast, research conducted from a *practice* stance attempts to preserve the perspectives of the participants engaged in organizing activities in order to enhance adaptive capacities to emergent features of *practice* situations.

Stacey et al. (2000) have recognized that these assumptions grounded in principles of managerial control may limit an open and transformational view of organizations and the potential for organizers to achieve transformative outcomes. In contrast, these authors look to the complexity sciences and the work of Mead (1934) as creating a "transformative teleology" (p. 37) that holds the possibility for fundamental transformation of a situation through "complex responsive processes of relating" among people (pp. 186-189). In their view, an organization is better modeled in terms of such relational processes rather than as systems. Stacey et al., 2000) contrast a transformative teleology, and its constructive view where the future is driven by responsive micro interactions to unpredictable ends, with two alternative teleologies they assert are implied in typical forms of systems thinking: A rationalist teleology reflects a managerial

view where the future is driven toward goals by human rational choice and motivation, and a

formative teleology encompasses an unfolding over time where the future is revealed in new

forms of what already exists (p. 26).

The practice study methodology adopts a world view that is consistent with the

emergence and complexity perspectives summarized above. The methodology is sensitive to

responses to relational and material interactions, which generate dynamic influences that impact

organizational outcomes. The methodology also seeks to identify new meaning and

understandings that are socially created within responsive interactions. The practice study

methodology extends the principle of responsiveness beyond a focus on human interactions by

recognizing that a *practice* situation may be dynamically transformed by responsiveness to a

broader range of relational, cultural, organizational, political, and knowledge-generating factors

present in the changing *practice* situation. In this key respect, the broad conception of *practice*

may usefully expand research inquiry and analysis of situations involving practical inquiry and

organizing to consider relevant features of the situations while still retaining the inside-out and

bottom-up perspectives that are essential to understanding professionals in changing situations.

Collective action and outcomes as relational and social construction. The fifth

concept of the theme *practice* as professionals organizing emerging collective culture addresses

achieving coordinated collective action and outcomes rather than merely individual outcomes.

HSIR organizers and others who would transform health care organizations and systems must

address how to leverage local discoveries made by individuals and small teams into

organizational and system changes that will transform health care delivery. As presented earlier,

such changes will require cross-disciplinary cooperation and integration that transcend the limits

of disciplinary knowledge and typical professional training. But the earlier discussion on

professional learning and knowing stopped short of addressing how collective outcomes may be achieved. The starting point is to revisit the relational origins of collaboration embedded within *practice* as the term has been presented in the Introduction.

    Relational interactions and relational construction. The broad conception *practice* allows all activities to which it refers to be understood as a part of dynamic, unfolding, social undertakings that address concrete situations offering particular professional challenges. While this sense of the term *practice* aggregates professional activities, *practice* does not merely aggregate a portfolio of abilities held by individual professionals at any one point in time or the cumulative results of individual actions; rather, *practice* refers to the activities of multiple professionals that are coordinated in their relations through time in response to each other and to specific situations. As noted earlier, the coordinating of new activities depends in substantial part on developing new practical understandings among participants who are engaging and interacting in those new collaborative undertakings. These understandings and coordinations are developed in relational interaction and are co-creations of such relations (Gergen, 1994, 2009a, 2009b).

    The works of both Scott (2008) and Becher (1999) reviewed in the discussion of professionals and the earlier discussion of health system reform strategies suggest a space for inquiry about professionals that has seen limited theoretical and empirical development. This inquiry space is located between the level of the individual professionals and attention to their professional skill and knowledge development, on the one hand, and the inquiry concerning the large-scale aggregation of professional activities, which adopt macro-, profession-, or organization-level perspectives, on the other hand. This inquiry space would be functionally "meso" (in the sense of "middle") in location and scale, with a central focus on collective

professional action in organizational contexts. The inquiry space would also be "meso" (in the sense of "multi-level" (Klein & Kozlowski, 2000) in its conceptual and analytical focus on identifying dynamic, relational connections within small and larger groups and in organizational contexts. This meso-level inquiry space is depicted on Figure 2.1.

Figure 2.1. Meso-level inquiry space. Meso-level research considers influences and actions from multiple levels with particular attention to the influences on and effects of mid-level (meso-level) collective action.
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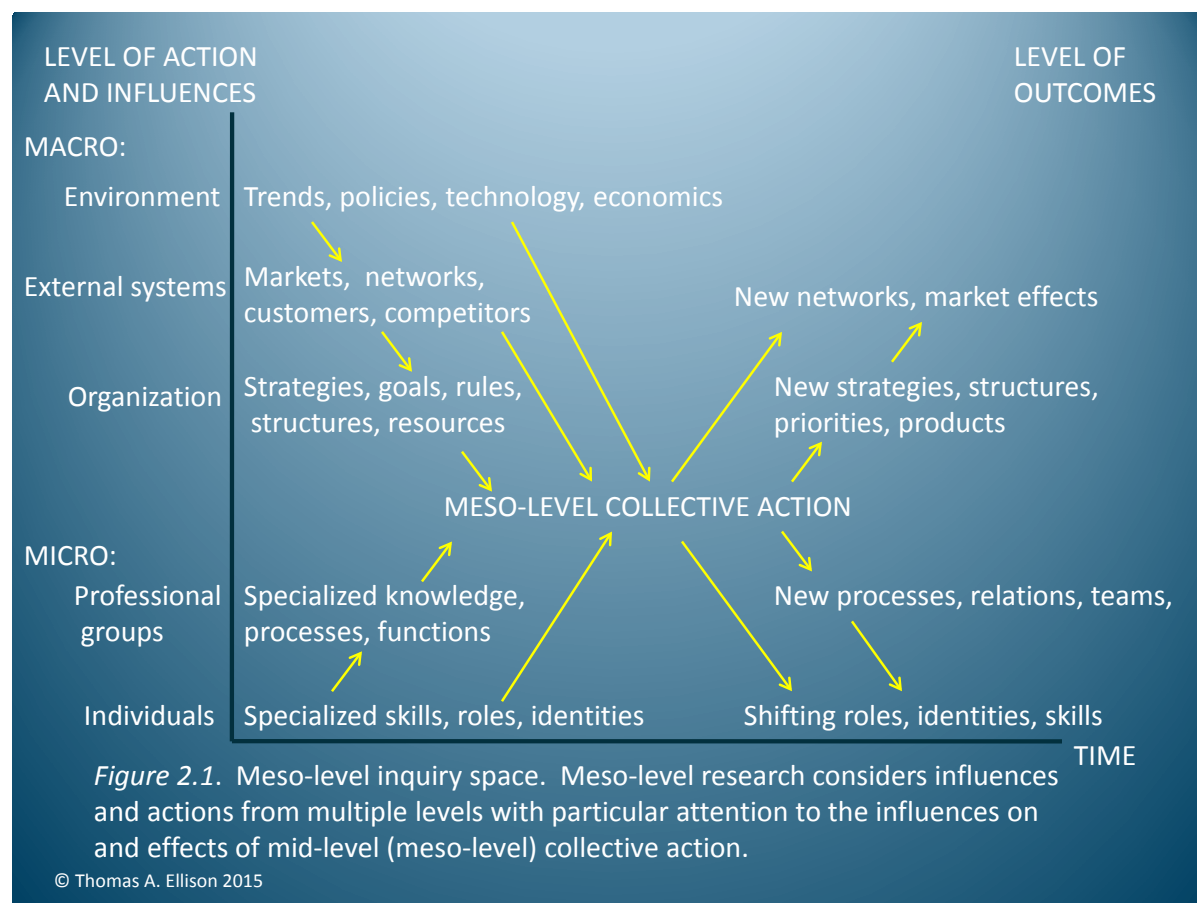
Such an inquiry space may further be relationally "meso" in two respects: Such an inquiry space may reflect the identifiable locations (in time and space) of the collaborative re-organizing of ongoing relations and interactions (Barad, 2007; Gergen, 1994; Uhl-Bien, 2006) among professionals and aspects of the organizational environment in shared and changing contexts; also such an inquiry space may metaphorically represent a "space between" (Bradbury & Lichtenstein, 2000) professionals and their sponsoring organizations where meaning is re-created and narratives are reconstructed (Rouse, 1996), and also where interdependencies and

co-evolution become evident through such changes in their relational interactions (Bradbury & Lichtenstein, 2000).

Identifying meso-level inquiry about collectives helps to move such research from an individualistic perspective—one focused on individual action, dyadic interactions among individuals, the aggregated effects of activities of individuals, and the consideration of groups, professions, and organizations as individual entities; in place of an individualistic perspective, a meso-level research space opens research inquiry to consider the full range of relational creations and dynamics—the social and material interactions, cultural creations, power relations, and other collective relations and concerns that define collective life. The expansive conception of *practice* captures this meso-level space by describing an emergent relational and cultural complex (Rouse, 1996) as the appropriate unit for collective interpretation and analysis.

Social alignments and power relations. Rouse (1987, 1996) has emphasized that an understanding of dynamics in *practice* is not solely based on dyadic relational interactions, but also the alignments of other participants in the *practice* setting and the extent to which those alignments reinforce (or fail to reinforce) the power dynamics present in the situation. This observation starts to refine the operative building blocks of effective collaboration—new collective action and collective achievements are constructed from relational interactions that operate to realign responses and social relations within *practice*.

Rouse's (1996) observations are based on the situated and dynamic conception of *social alignment* proposed by Wartenberg (1990). Wartenberg (1990) identified the essence of power in the different social responses of participants in a situation: In his view, power relations only exist to the extent that participants in the situation align socially and act to "simultaneously empower and disempower" other social agents (p. 148). An example of how social alignments

constitute power relationships used by Wartenberg is that of judge and prisoner—a judge has power over the prisoner because the surrounding social agents and systems are oriented to the judge's ruling and coordinated to carry out the stated consequences of that ruling (pp. 153-154). This observation that power is embedded in how participating social agents respond to the players in a power relationship directly contradicts the common conception of power as an object possessed and wielded by one agent over another. Wartenberg's concept of power also expands the focus of social analysis beyond those agents directly involved in relational dyads of power to the responses and positioning of other agents in larger fields of social action. In technical terms, these other social agents create the power relationship of the central agents by orienting to the central pair and coordinating responsive actions in specific ways that facilitate outcomes desired by the dominant agent and hinder outcomes desired by the subordinate agent.

Wartenberg's (1990) conception of power not only reinforces a holistic, situational perspective, but also undercuts a traditional view of power as a structured and static phenomenon. Because power can be conceptualized as being constituted through the interactions of central agents and other participants in a specific situation, Wartenberg argued that power is necessarily time-sensitive and dynamic. The time sensitivity of power can be illustrated by observing that social agents typically orient to a prior event (for example, the decision of a judge) while coordinating their responses toward a future outcome (for example, to place the prisoner into a jail cell). Specific instances of power therefore occur over time and have a narrative structure. That power relations are dynamic does not mean that they are change-producing. The prisoner example emphasizes how the particular structure of all social relationships was oriented toward producing an expected result through the anticipated and routine responses of others who were positioned to contribute to that result. Most relationships

in organizational settings are structured to produce known results consistently, and such

alignments tend to reinforce power relations that are in place. Of course, power relations in

practice are less highly structured than prisoner/jailer relations may be subject to resistance and

other change-oriented responses from peripheral agents. For this reason, executives supported in

power in such situations might be inclined to minimize the potential for dynamic and changing

interactions in those alignments by taking actions that are oriented toward preserving status quo

relationships in order to increase the probabilities of power-reinforcing responses. As

Wartenberg (1990) observed:

> Since a situated power relationship is itself constituted by the ongoing actions of the
> aligned social agents, in order to maintain his power the dominant agent in such a
> relationship must act in a way that does not disturb the ongoing patterns of actions that
> these agents engage in. The *present* actions of a dominant agent count on the *future*
> actions of the aligned agents being similar to their *past* actions. But this faith in a future
> whose path can be charted entails that the dominant agent not act in a way that challenges
> the allegiance of his aligned agents, for only through their actions can that future be made
> actual. (pp. 169-170)

This observation helps to reframe any discussion about the leading change based on

positional authority. A leader who seeks implement change by creating urgency, change-

oriented visions, new coalitions, quick wins, empowered agents (Kotter, 1996) may also need to

modify the social alignments that have supported the leader in power. Conversely, failed change

programs may be explained in part in terms of the tendency of such leaders to pursue change

strategies in ways that will not interfere with the relational bases of their own power.

Power is not assured of its successful exercise by reason of professional status or position

in a practice setting. As summarized by Rouse (1996), "[Power] is . . . heterogeneously

embodied in people, institutions, practices, social structures, and . . . the things people act with,

on, and among. Power exists only through being reproduced, and it is continually reshaped by

the ways its reproduction is resisted" (p. 184). Attention to power relations and the dynamic

resources presented by peripheral social alignments is central to an understanding of how collective action and achievements are constructed.

Knowledge alignments as collective learning. Rouse (1996) has extended the concept of power alignments (Wartenberg, 1990) by analogy to explain how scientific research practices become informative over time and in different locations to other scientists engaged in such practices.   Scientific research practices are developed locally in unique situations and are differentially reproduced, extended, and modified in the ordinary course of ongoing research. The situated and differential enactment of research practices creates a high potential that the results of any particular research program will not be responsive to or extend the work that preceded it. In Rouse's view, research practices are nevertheless made informative through the epistemic alignment of other researchers who orient themselves to research methods and findings and coordinate actions in ways that extend and reproduce certain research practices and results in new settings while isolating or contradicting certain other methods and findings. Generalizing this view further to encompass a broader range of professional practices, essential knowledge claims concerning professional practices, practice activities, and discoveries from practical inquiry are constituted as meaningful, relevant, and significant in the first instance through the dynamic and changing alignments of the practical activities of other professionals in *practice*. It is these practical activities of other professionals that determine the meaning, relevance, and significance of discoveries, by applying, adapting, extending, and discarding knowledge claims that previously arose in *practice*. Research discoveries of scientists and local discoveries of other professionals in practice serve as dynamic resources when they result in changes to research programs or practical professional activities. Such discoveries act as cultural resources

when they contribute to a reassessment of what is collectively meaningful and significant in such ongoing programs and activities.

A typical approach to scientific knowledge commented on by Rouse (1996) would merely look at the content of the research results. Similarly, typical discussions of professional knowledge are content-oriented, focused on specialized knowledge and skills. The concept of epistemic alignment, in the sense of a social alignment oriented to practical knowing, seeks to highlight how research results are used practically. *Practice*-oriented knowledge may take the form of useful activities and local discoveries as well as reported research results. Such practice knowledge may be taken up in *practice* by others who recognize such knowledge as significant and informative of what activities they should pursue and the ways and qualities of pursuing those activities. As an example, a scientific finding may provide certain content knowledge, but the finding will only create a social alignment oriented to practical knowing to the extent that finding also results in implementing in practice a modified medical procedure that is adopted into practice. Such epistemic alignments would not just incorporate the content of the original finding, the knowing what of research, but also include the ever-developing practical knowing how and what to do. That practical knowing would include "the gradual adaptations, reproductions, extensions, and standardizations of these localized activities" (Rouse, 1996, p. 185). In this sense, social alignments concerning practical knowing "enable these localized activities and achievements to be informative just as power alignments enable particular constraining or coercive actions to be effective" (p. 185).

Ideology. Power and social alignments further implicate ideology and its role in organizational life. Ricoeur (1991) has noted that social and institutional affiliations give rise to influence of ideology, and ideology as explained by Ricoeur may affect the collective actions of

participants in *practice* and their social alignments. A brief detour to explore his views will illustrate why an empirical investigation of organizations should be sensitized to any effects of ideology presented in the *practice* situation.

Ricoeur (1991) has asserted that all human understandings are at some level mediated by collective participation in cultural and historical traditions, institutions, and social groups and by their related languages and other systems of symbolism. Ideology is not simply a negative phenomenon of group life; rather, ideology articulates essential features of a social group's identity, makes important connections to a group's founding events, promotes each participant's belonging to the collective, and encourages member compliance with group standards. Nevertheless, ideology may have negative effects by simplifying and distorting existing conditions, promoting a change-resistant view of social experience, and justifying acts of domination. These negative effects result directly from ideology's character and operations. Ideology becomes operational as a motivator of social action by offering a simplified scheme that can replace rigorous thought with beliefs, rituals, stereotypes, and maxims. The content of ideology forms an "interpretative code" that "is something *in which* men live and think, rather than a conception *that* they pose" (p. 251). Because "we think from it rather than about it" (p. 251), an ideological code may distort collective understandings. Further, ideology may create a temporal lag in recognition and inertia in dealing with what is new. Thus, "what is new can be accommodated only in terms of the typical, itself stemming from the sedimentation of social experience" (p. 251), and what is marginal can become intolerable. This sedimentation of experience is presented in the form of representations, which narrow "the field of possibilities" available for interpretation and create "ideological closure, indeed . . . ideological blindness (p. 253). Such closure and blindness serve the conservative function of promoting integration with a

social organization: "What ideology interprets and justifies is, above all, the relation to the system of authority" (p. 252), and that relation gives rise to the possibility of domination through the hierarchical and political aspects of organizations. Ideology directly promotes domination by providing rationales that legitimize exercises of authority and justify the systems that implement dominating schemes.

Ricoeur (1991) has promoted a critical analysis that would separate these functions of ideology from any particular system of thought or interpretive content in order to identify where ideology is evident as an interpretative code that reinforces authority. An interpretative code may be in operation where there is empirical evidence of simplifying explanations, organizational rhetoric, enforcement of rules, or emphasis on hierarchical structures or authority, as examples, and also evidence that participants in the situation are relying on such activities as being meaningful in an unquestioning way. Similarly, the potential presence of ideology should be explored in situations where it might be acting as a dynamic resource by limiting interpretations or possibilities, distorting perceptions, producing an inability to act, or justifying systems of authority. Ricoeur's process of stripping the effects of ideology away from interpretations that are influencing and limiting action is intended to promote more objective understanding and promote "unrestricted and unconstrained communication" (p. 268).

Organizational learning as collective action that transforms practice. The earlier discussion of situated learning and professional design activities was framed in terms of individual action and learning outcomes. Organizational learning literature addresses learning at a collective level. The problems and opportunities of organizational learning have been conceived in terms of organizational decision making procedures (Cyert & March, 1992), evolving organizational routines (Nelson & Winter, 1982), and developing appropriate mental

models and holistic thinking by organizational leaders (Senge, 1990). Argyris and Schön (1978, 1996) extended Dewey's (1938) concept of inquiry to an organizational level by designating individuals as agents of the organization who engage in inquiry in accordance with organizational rules and roles. In their view, organizational learning occurs when changes in behavior are evident within the organization and resulting learning is "embedded in the images of the organization held in its members' minds and/or in the epistemological artifacts (the maps, memories, and programs) embedded in the organizational environment" (Argyris & Schön, 1996, p. 16). Each of these approaches reflects an assumption that learning consists of the appropriation of explicit and generalizable knowledge that may be incorporated into designed organizational processes and artifacts, and the minds of organizational members.

Recognizing learning and knowing as situated social and relational activities creates the opportunity for a different perspective on how collective learning occurs in organizations. Learning and knowing of significance to an organization occurs in social and relational interactions that are pursuing discoveries important to organizational objectives. While this statement suggests the essential learning mechanism, it does not fully explore how such discoveries might serve as dynamic resources and become transformative to organizations.

Brown and Duguid (1991) built on the work of Lave and Wenger (1991) to emphasize the collective learning that results from "*becoming* a practitioner" rather than "learning *about* practice" (p. 48). Such learning is collaborative and communal, occurring within existing and emergent groups—communities of new relations that arise in the course of activities—that may or may not be formally recognized by an organization. In professional worlds, these open-ended, boundary-crossing communities are relational constructions of *practice*. Organizational learning in this respect is not fostered by the organization's structured training activities, but by the

learning that occurs by engaging in the work routines and relations within the informal communities that are pursuing organizational objectives. Examples would include cross-disciplinary teams working to develop new medical protocols or to facilitate protocol implementation across different medical teams. Such activities in medicine are outside normal educational processes of the separate disciplines and are deeply dependent on practical knowing gained from experience. The organization's role in such organizational learning is not just to structure such groups as an exercise of authority or conduct training activities abstracted from the context of work performances; organizational learning is fostered by the "*detection* and *support* of emergent or existing communities" (p. 49) that are operating within the organization, facilitating a constructive becoming-in-practice of their respective participants, and structuring the organization as a productive community of such communities (p. 55). Some of these communities are well established by professional disciplines, but, and increasingly essential to change, other informal communities may emerge through collaborative activities that cross disciplinary boundaries.

As noted by Brown and Duguid (1991), the collective learning that occurs in communities of practice is not a passive enterprise, and is centrally implicated in innovation that helps to reshape organizations. Using terms similar to those employed by Schön (1987) in describing the art of design, "the process of innovating involves actively constructing a conceptual framework, imposing it on the environment and reflecting on their interaction" (p. 51). This conceptual framework is not based in theories, but practical attention to how an innovative product or process will interface with the environment and ongoing work routines. The art of design and inquiry toward innovation does not operate to locate predetermined right answers waiting to be discovered. Innovation results from actively reconstructing aspects of the

environment to allow the environment to be responsive to what a new process or product offers.

In an example used by Brown and Duguid (pp. 52-53), the dry copier was rejected as a new means of preserving an original, but was recognized as innovative when the dry copier's ability to make copies of other copies was deployed to change work practices and the way people collaborated within organizations. This active restructuring of a situation to accommodate a new process or machine reflects organizing as presented in the Introduction. The features of the situation that are restructured have the potential to become cultural resources to create new meaning and understanding about how an innovation may become significant by changing work routines and working relations. The medium of innovation, then, is cultural—new interpretative meanings and understandings arising in dealing practically with new things made in *practice* allow sense to be constructed and congruence to be achieved in the changed patterns of *practice* activities.

Another key observation linked to Brown and Duguid's (1991) learning framework is the importance of difference. While a typical view of learning assumes knowledge is theoretical content abstracted from situational detail, organizational learning is anchored in detecting, preserving, and enhancing the effect of situational differences. Emerging discontinuities in the environment and emerging communities of practice must first be recognized. The potential for innovation and the ability of an organization to respond to discontinuities in the environment are both enhanced to the extent that the organization is "*reflectively structured*" (p. 54) to amplify the separate and competing perspectives of communities of practice. In health care, the separate perspectives of the clinical and scientific disciplines must be positioned in constructive dialogue, engagement, and potential conflict in order to shape organizational outcomes. Scientific research could be deployed to change clinical practice procedures. Similarly, clinicians might shape the

direction of future scientific research in ways that could improve care. The organization might benefit from such work by producing better outcomes and by documenting lower costs. In order to promote such constructive engagement and mutual learning, clinical and academic professionals would engage with those from other disciplines to explore and discover new ways of becoming practitioners of their respective disciplines that benefit from the knowledge and concerns of the other disciplines. From a *practice* perspective, professionals from different disciplines must engage in *practice* with other *practice* perspectives so as to learn new ways of practicing that become meaningful and significant to their respective *practices*. Ultimately, what counts as *practice* collectively to the practitioners must be transformed in some significant respect as a result of such engagement with and learning from professionals who are different.

Brown and Duguid (1991) also emphasized the central importance of narratives and story-telling as the means for collective learning. These authors adopted a practice-based perspective to collective learning and knowledge that avoided separating "learning from working and, more significantly, learners from workers" (p. 41). Narratives and stories of *practice* provide the details of the journeys that are undertaken in *practice* and therefore provide useful examples of ad hoc decision making under changing conditions rather than just the maps or models of desired outcomes. Story-telling in *practice* provides a process to render coherent accounts from incoherent situations. As noted by Brown and Duguid, in commenting on the ethnographic account of a situation involving a malfunctioning machine, "[t]he process of forming a story was, centrally, one of diagnosis" (p. 44); solving the problem involved piecing together of incomplete documentation, customer reports, technician's stories of prior problems, and observations of the machine's function into coherent possible stories "to provoke old memories and new insights" (p. 44). More tests of possible solutions provoked more memories

of other potentially comparable situations and more stories. Narratives thus provided both the source of accumulated *practice* wisdom and the means to create instructive accounts of possible problems and solutions based on such wisdom.

In summary, capacities for collective action are grounded in relational interactions and experiences that produces (to extend Tsoukas and Chia (2002)) a collective becoming; that collective becoming is grounded in learning in the form of becoming-in-practice through participation in collective activities and inquiring with respect to matters of concern to emerging communities, and a becoming-collectively-aligned to important practical discoveries acquired in connection with such learning. Because knowing within collective participation arises through experience over time, such knowing has a narrative structure and may be captured through stories about matters of significance—cultural resources—that are available or are discovered in such activities. Such resources should not be deployed to limit the diversity of perspectives that arise within emerging communities in *practice*; rather the cultural resources from multiple communities and perspectives—reflecting the learning that has arisen through participation across multiple *practices*—should be preserved and placed in constructive dialogue in work situations to maximize adaptive and innovative potential for the entire organization.

Meaning and significance as cultural construction. My organizing theme for this portion of the literature review is *practice* as professionals organizing emerging collective culture. The sixth key concept of this theme is culture. I commenced this literature review with a developing story about culture-building to express the essential relationship between practice and culture: Activities involving inquiry and organizing within *practice* draw upon and construct new cultural resources of meaning and significance while extending culture to new situations. At the same time, such activities may transform culture by creating new cultural

resources that renew and enrich its existing stock of such resources—resources that hold

meaning and significance. So far, this literature review has identified certain categories of such

resources relating to:

- *practice* (including features of *practice* structure, aspects of situations that become

  meaningful and significant, sources of dynamic influences within *practice* that hinder

  or facilitate certain outcomes, and *practice* narratives);

- professionals (including the macro-, meso-, and micro-level factors that impact

  professional performance, the practical inquiries and designing undertaken by

  professionals, and their practical discoveries);

- organizing (including organizing, sensemaking, and the effects of processes in

  action);

- emergence (including emerging features of situation, dynamic mechanisms, and

  effects of uncertainty); and

- collective (including relational interactions, power relations, social and knowledge

  alignments, and matters pertinent to communities of practice and organizational

  innovation).

Within each of these broad categories, features of a *practice* situation become cultural resources

when they can be used to shape and communicate the meaning of ongoing performances and

relations, suggest the significance of what is going on, and contribute to a collective

understanding of available courses for further collective action.

    Culture as practice; practice as culture—part 2. The features of a *practice* situation

become cultural resources and contribute to building culture when new connections are made

between culture resources—new connections of meaning and significance—that change

established ways of collectively acting, responding, and making meaning. The relations among features of a situation matter, not just the features themselves; and those relations become significant when they suggest that desired practical outcomes may be facilitated by changing ways of acting and responding. This point will be illustrated by exploring in greater detail the two-way exchange between culture and *practice* introduced earlier.

As suggested by Rouse (1987, 1996), a discovery in scientific *practice* becomes meaningful in light of the procedures followed, the historical progression of accepted knowledge, the ability to publish findings, and, most critically, the suggested paths for further research. Each of those features of the situation becomes a cultural resource when it contributes to the framing of the meaning and significance of the discovery. Meaning and significance are established in part in light of objectives and possibilities for further action—when the discovery enhances the understanding of participants in the scientific *practice* about future courses of action. In this sense, the contribution of culture to *practice* becomes clear: Practitioners within *practice* operate within webs of cultural meaning and resources that carry and signify meaning; those practitioners depend on those cultural resources in setting paths of collective action and coordinating their ongoing activities. Inquiry and organizing activities of professionals in *practice* do not arise in a vacuum, but in the context of features of their situations that have culturally derived meanings and that may be used as collective resources to coordinate the undertaking of such activities.

Culture therefore frames collective meaning and significance within *practice*, but how does the return leg of the two-way trade in meaning and significance occur? As suggested by the hypothetical scientific discovery, particular features of a *practice* situation become cultural resources in that situation only when they shed light on the situation and help to supply meaning

and significance to action in relation to other features of the situation that are also partially defining of meaning and suggestive of significance for future actions and possibilities. Inquiry and organizing activities in *practice* serve not only to replicate the ways of acting, responding, and making meaning that evidence current culture, but also to make new connections among diverse features of a situation including available cultural resources through new interactions, discoveries, process changes, creating social alignments, and making other new associations (Pickering, 1995). A scientific discovery may act as a cultural resource when it readily suggests the next significant step for the scientist's research program in connection with other key factors—equipment calibration, publication deadlines, funding sources, as examples—which are also factors driving the research program. These factors all act as cultural resources available within scientific *practice* to the extent that they contribute to frame the meaning of the discovery for the practical pursuit of the research program. On the other hand, the same discovery may have no obvious meaning for clinical *practice* in the view of scientists. The ability to sequence genes was originally just a scientific discovery. Nevertheless, a discovery may become a cultural resource to clinical *practice* when clinicians act to explore the implications and significance of the discovery and its possibilities to create future diagnostic or therapeutic procedures or enhance treatment outcomes. Over time, genetic testing has moved from a clinical experiment to become a widely available practice that has in turn informed the significance of various treatment options. As illustrated by the potential impact of the scientific discovery on clinical practice, new connections among features of *practice* situations do not merely operate to extend static features of a single culture to new situations; exploring new connections among diverse features of a *practice* situation through inquiry and organizing activities may also serve to change a culture to the extent that *practice* participants act to create new meaning and explore possible

significance for *practice* change in the new connections. While the scientific discovery in the preceding example could be characterized as having extended scientific *practice* and culture, the same discovery has also provoked a significant change in clinical *practice* and culture.

The foregoing discussion identifies an operative starting point for *practice* and culture change—change is possible when inquiry and organizing activities make new connections among features of the *practice* situation that are relevant to future practical action. What is the nature of these connections and how might they result in significant changes to the collective webs of acting and relating that make up culture? The new connections are made by constructing new relations among such features (Pickering, 1995), including by attending to new features that may potentially relate to something in *practice* that already matters. A functional connection may be drawn between process improvements initiated in one area of patient care and process issues that need to be addressed in another area. Conceptual connections may be drawn between findings or research procedures in different fields of science that affect future research. Experience with new technology may practically inform how to achieve desired goals. Other types of connections could be suggested. In each case, certain features of a situation become significant in relation to other features, and the new relations are established when they can be characterized as meaningful and significant. In turn, these new connections among cultural resources may compel adjustments to culturally accepted ways of acting and responding to the extent that they supplement and re-weave webs of meaning and significance (Rorty, 1991, pp. 93-110). A scientific discovery may initially have significance only to the scientists engaged in scientific *practice* who expected the outcome and provoke little re-weaving; but the same discovery may also serve to re-weave the webs of significance for clinical *practice* unexpectedly when the discovery is later understood by clinicians to suggest new possibilities for

diagnostic and therapeutic procedures. Cost accounting and tools to develop efficient processes have no apparent connection to medical treatment until experiments with such tools suggest how the ways of structuring patient care may be improved by reducing cost and improving patient experience. Both of these situations involve inquiry (Dewey, 1938) into what may practically be done to improve patient care, the discovery of new meaningful connections between cultural resources available in the practice situation, and organizing to restructure collective established ways of acting and responding. In this way, organizing in practice becomes central to re-weaving cultural beliefs and transforming established ways of performing and relating. Some new meaningful connections among cultural resources will suggest changes in ways of acting that will require more re-weaving of webs of significance, and some will require less; as usefully suggested by Rorty (1991), situations calling for habitual performances, on the one hand, or Deweyan inquiry on the other can be thought of as creating a continuum of situations characterized by a minimum of cultural re-weaving at one end to a maximum of re-weaving at the other (p. 94). In any case, however, cultural ways of acting and responding get added and dropped through this re-weaving that occurs in performing new activities in *practice*. In this exchange occurring between culture and *practice* that occurs in *practice* performances, the webs of cultural resources include more complex interconnections among what remains important about prior *practice*, new discoveries, and new *practice* methods. New interconnections embedded in cultural webs of understanding and action allow practitioners to increase their responsiveness to matters of collective significance in *practice*.

Developing collective meaning and significance through open-ended inquiry. The preceding discussion about building culture raises the stakes of inquiry and organizing in *practice*. How can inquiry and organizing proceed to solve practical problems, generate new

meanings, and transform culture in the process? An understanding of these questions depends in part upon understanding how inquiry (and organizing as the collective form inquiry) operates through and constitutes meaning. More fundamentally, however, this understanding is promoted by recognizing that inquiry and organizing do not apply technical tools of particular professional disciplines, but are cultural activities driven by commitments to resolve issues that matter to *practice* and culture.

Dewey (1938) emphasized that inquiry to resolve a problem is progressive but highly provisional, moving from vague notions of possible solutions to experiments that demonstrate how ideas may really operate to change situations and build holistic coherence and understanding (pp. 105-119). Ideas[18] operate to direct perception to matters in a situation that are assumed relevant—assumed "facts"—and conceptually organize those identified "facts." But neither ideas nor facts are fixed in inquiry; testing may prove that other matters are really the "facts" that count—matters of significance—when such matters operate in interaction with modified ideas to enhance holistic understanding and resolve the problem. In terms of meaning, inquiry generates meaningful propositions about the relations among provisional facts that matter, ideas, and solutions; meaning changes as new relations are explored among matters in the situation that may be significant. In Dewey's (1938) terms, a more relevant meaning is developed from a series of provisional, "intermediate meanings" (pp. 111-112). In my terms, progressive inquiry multiplies meaningful relationships among significant features of the situation and possibilities offered—cultural resources—in ways that build holistic understanding.

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[18] Following Dewey (1938), an "idea" is a possibility—a forecast of a possible solution to a practical problem if certain actions are taken—rather than a disconnected product of mental activity (p. 109). An idea creates relations among key conditions, problems, available actions, and anticipated solutions.

As long as this inquiry process continues, driven by commitments to achieve a holistic understanding of constructive new possibilities and next actions, inquiry holds the potential to generate new insights, relations of significance, and meaning that will inform collective action.

Dewey (1938) warned that the process of developing meaningful relations among ideas and conditions of a situation may be cut short by the acceptance of a particular meaning—by an early determination of what is the case (pp. 111-114). At such a point, the "*facts of the case*" (p. 114) are presented without qualification and predefined relations of those facts are substituted for further inquiry. This cutting off of inquiry occurs regularly within established technical areas of theory and practice where experience has established relevant definitions within a larger system of established relations, for example, within a particular scientific discipline. In uncertain conditions, however, adopting a particular meaning, for example through an early application of technical solutions assumed to be relevant,[19] may terminate inquiry and leave the (now former) inquirers with an unresolved, vague situation and a newly constituted puzzlement about how to proceed in light of the vagueness. These observations suggest two counterintuitive features of inquiry and organizing: The objectives of inquiry and organizing should be as focused on constructively continuing such processes rather than just in ending them with well-intended solutions and organizational structures; and, as a corollary, inquiry and organizing should be as attentive to vagueness—the gaps in knowing and practical performances—and not just manipulations of technical conditions as drivers of such ongoing processes.

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[19] Heifetz (1994) has similarly warned against the application of technical solutions to adaptive situations. The cutting short of inquiry and organizing may suggest why technical solutions frequently do not produce intended consequences.

Studies and commentaries about scientific research practices illustrate these propositions

in action. Within scientific practice, scientists demonstrate a cultural commitment to pursue

possible scientific discoveries because something that matters to their practice might result from

such discoveries (Rouse, 2002, pp. 337-345). Because a discovery cannot be known in advance,

what might be at stake in a discovery cannot be fully understood and the commitment of

scientists cannot be framed in terms of goals or in any other specific way (p. 338). It

nevertheless is a commitment to pursue inquiry toward some possibility that is anticipated but

fully hidden (Polanyi, 1966, p. 21). Discoveries are pursued by working to identify what is

different in a research situation rather than reproducing known outcomes (Rheinberger, 1997).

Such differences become significant to the practice of science because they provide an

inexhaustible source of new, promising problems (Polanyi, 1996, p. 68) and inform the direction

and possibilities of further research (Rheinberger, 1997, Rouse, 2002). Although procedures

may be refined in conducting research, scientific practice is only justified by a cultural purpose

of research that future discoveries, pursued in accordance with the values of science, will lead to

new, even surprising, understandings (Polanyi, 1966, pp. 68-70); [20] it is this purpose that justifies

the program of science rather than its established procedures (p. 70). When scientists confront

vagueness and gaps that arise in their practice, they are responsive to the norms of science in

pursuing further research to refine what they know about the situation. The normative need to

pursue discoveries drives research as much as an interest in generating new technical or

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[20] Polanyi (1996) distinguished scientific genius, a purely unarticulated, *tacit* form of knowing, from expert diagnosis and skillful performances of all types, which involve a combination of practical "knowing how" and intellectual "knowing what" (p. 7). He viewed such expertise and skill as reflecting a "somewhat impoverished form of discovery" (p. 6) or knowing.

specialized knowledge. In this sense, pursuing discoveries is a scientist's way of making new meaningful connections among available cultural resources. In the process of fulfilling the broader purposes of science, science renews its own culture and traditions (Polanyi, 1966, p. 74).

Scientific discovery presents an analogy to organizing under conditions of uncertainty where practical and intellectual solutions are not available: Scientists and organizers knowledgably pursue usefully coherent solutions they can anticipate but cannot fully describe to problems presented from their experiences in *practice*. While *practice* incorporates technical performances and conditions, *practice* also encompasses areas of vagueness, problems, issues, and practical gaps that drive inquiry and require organizing (Rouse, 1996). Professionals in the relational complex of *practice* (Rouse, 1996) pursue real possibilities that may be discovered through inquiring and organizing; therefore, practice encompasses the conditions of cultural renewal in the process of discovering and working through those possibilities. In this respect, *practice* reflects the features of Rheinberger's (1997) "experimental systems" (pp. 27-28) located within scientific practice. Although he described experimental practice as a "system," he was very clear that his concept is not based on systems theories, but rather the practical perspectives of scientists. Technical conditions of ongoing performances, including "instruments that embody the heavy load of knowledge taken for granted" (p. 20), operate to highlight areas with promising vagueness that become objects of inquiry.[21] In turn, discoveries, regardless of how vague, become active forms of knowing when they are incorporated into the technical conditions that help to shed light on subsequent discoveries. But such discoveries only matter if they

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[21] Emphasizing their value as a form of knowledge, Rheinberger (1997) describes these objects as "the more fragile software of epistemic things—this amalgam of halfway-concepts, no-longer-techniques, and not-yet-values-and-standards" (p. 36) operating with experimental hardware.

operate within a cultural framework to create meaning: A discovery only has value to the extent that it can be named and develops meaning over time through interpretative connections with other cultural resources and possibilities (pp. 36-37).

Building on Rheinberger's experimental systems, inquiry and organizing by professionals in *practice* may be thought of as creating open, dynamically generative cultural inquiry systems with very practical objectives—using discoveries to understand practical problems differently, change conditions, and make indeterminate situations more actionable. In order to produce such discoveries, inquiry and organizing cannot operate as a closed system of technical production; rather, as suggested by Rheinberger, inquiry and organizing must act to create "settings of emergence, change, and obsolescence" (p. 21) and generate questions rather than answers (p. 28). Professionals not only apply skills and knowledge that are a part of the taken-for-granted hardware of *practice*; professionals remain open to new matters they discover to be significant and use such discoveries as the interpretative software to improve *practice* and renew the cultural traditions of the professions. Such matters of significance are generated inside the emerging settings of *practice*, where they interact with other cultural resources to determine "what it means to be a scientific—or a broader—culture" (p. 36).

Summary of practice-related theories. So far, this literature review has been organized around theoretical literature pertinent to practice, the work of professionals, and the processes of inquiring, organizing, operating within collectives, and culture building.

The reviewed theoretical perspectives share overlapping interests in situated action, organizing, learning, and the knowledge that may be ascertained from a study of such activities (Corradi, Gherardi, & Verzelloni, 2010). As examples of these shared interests,

- situated learning theorists (Lave & Wenger, 1991) and organizational learning and innovation theorists (Brown & Duguid, 1991) have expressed the importance of following and understanding participation in communities of practice;

- process theorists (Weick, 2010) have called for attention to practical activities and situated details while complexity theorists have called attention to the complexity of micro interactions and responsive social processes (Stacey, 2001; Stacey & Griffin, 2005; Stacey et al., 2000); and

- practice theorists have recognized the importance of understanding processes in the constitution of practices, structures, stability, and change (Feldman & Orlikowski, 2011).

These complementary lines of theory may reflect the pre-paradigmatic status (Kuhn, 1970) of theories and studies broadly related to practicing, organizing, and collective learning—theories that are interested in the same empirical situations while approaching them with very different language. These theories and studies contribute to analysis and interpretation of actual *practice* situations precisely because they are concerned with similar empirical phenomena—features of *practice* situations including the activities and effects of ongoing performances—that should be accounted for in conducting organizational research involving professionals. These features include the organization and function of social practices and arrangements (Schatzki, 1996, 2001, 2002) and the cultural norms, rules, and understandings that underlie such social structures; professional norms (Rouse, 1996, 2001, 2002; Schatzki, 1996, 2002); the activities of professionals engaged in design and inquiry (Dewey, 1938; Schön, 1987); features of operating processes, including organizing and sensemaking (Weick, 1979, 1995); emergent features of practice situations and complexity dynamics (Alaa, 2009; Stacey, 2001); power and other social

alignments (Rouse, 1996; Wartenberg, 1990); and collective activities to build relational understanding (Gergen, 2010) and collective learning (Brown & Duguid, 1991). These features of *practice* situations are available as cultural resources to help professionals to build meaning, significance and coherence as they work to organize new *practice* arrangements in conditions of uncertainty. Also, as the next section of the literature review will explore in greater detail, in light of empirical studies pertinent to *practice*, the features and performances of *practice* situations are available as dynamic resources that serve to facilitate or hinder future courses of action in *practice* (Rouse, 1996; Schatzki, 2002)

Dynamic Resources in the Study of Practice

Central to the practice study methodology is the concept of dynamics—certain features and performances within *practice* will facilitate certain directions of action and outcomes while others will hinder certain directions and outcomes (Rouse, 1996; Schatzki, 2002). Such features and performances are not conceptual constructs, but actual features of situations, performances, and effects of responsive actions that dynamically influence directions and outcomes of action. What are examples of such features that may be evident and operating in *practice* situations?

This section of this chapter will explore the dynamics of *practice* in the light of some of the theoretical literature reviewed above but also with respect to certain available empirical studies of professionals in changing *practice* situations and organizational contexts. Although such studies were undertaken by the researchers for different purposes, the studies contained useful examples of professionals engaged in inquiry, organizing, and related activities as they sought to change their practices or respond to changing organizational situations. These studies also provided an empirical basis for developing categories of dynamic influences in *practice* situations, which I have presented in Figures 1.1 and 1.2 in the Introduction.

Identifying examples of professionals responding to changing organizational situations. I identified empirical studies relevant to practical inquiry and organizing by professionals by conducting broad database searches to identify a pool of possibly relevant studies involving professionals, changes to their professional activities, and organizational change.[22] I then applied inclusionary and exclusionary criteria to abstracts and texts of studies in the pool[23] to identify meso-level studies that involved significant, relational changes in professional activities with implications at the group or organizational level. While this approach almost certainly did not identify all relevant studies, it provided a sufficient pool of studies to allow me to identify pertinent empirical conditions involving dynamic influences in *practice*, develop common themes, and explore methodological considerations.

The above approach proved adequate to identify a few dozen studies for detailed review from several hundred studies initially identified as potentially relevant by database searches. Most of these studies were conducted in health care settings, but a few were conducted in business, manufacturing, education, and human service settings. The identified studies were undertaken for a fairly limited number of purposes that can be categorized as: (i) evaluations of

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[22] Such studies proved to be difficult to locate for several reasons. Unlike studies involving organizational change, studies featuring changes in practice activities cannot be identified by searching for key terms or consistently deployed descriptive language. Further, researchers in those studies I did identify have not approached studies of professionals in changing situations through a consistent theoretical lens. For the foregoing reason, this review of the empirical literature did not attempt to present a complete review of relevant empirical studies.

[23] As examples of exclusionary criteria, programmatic evaluations of organizational changes, mergers, or other matters assessed at an organizational level of analysis were eliminated because they did not provide insights into the relational factors that might be implicated in *practice*-level change. Similarly, the evaluation of individual level matters including career change, burnout, training, the implementation of simple technologies, and research involving attitudes were excluded as not implicating sufficiently the group and organizational relations involved in the situations being studied.

organizational change and program development initiatives from perspectives implicating

changes in professional activities, (ii) investigations of professional adaptation to organizational

change and, in the case of the United Kingdom health care system, policy-driven change; (iii)

studies principally involving aspects of learning or professional knowledge; (iv) studies of

technology implementation; and (v) one additional study principally exploring organizational

subcultures. This brief summary illustrates that many of the studies identified to be relevant to

the study of professionals engaged in changing *practice* situations were in fact principally studies

of some other cluster of phenomena or were principally undertaken for some other conceptual

purpose. As is implicated in some of the research purposes, the studies not only reflected

different purposes but also a diversity of conceptual approaches to similar underlying

phenomena.

The methods used in the identified studies were substantially qualitative, with case

studies, grounded theory studies, thematic analyses, action research studies, and ethnographies

included in the qualitative mix. These qualitative studies accounted for the specific

characteristics of the changing practice situations and professional responses to those situations.

Therefore, the identified studies not only provided a pool of relevant examples of professionals

engaged in activities pertinent to practical inquiry and organizing, but also have informed the

development of the practice study methodology introduced in the first chapter.

The variety of conceptual and methodological approaches reflected in these studies

suggests that research of professionals engaged in changing practice situations is in an

exploratory stage. The body of research covered by this review does not rise to the level of a

paradigm of normal science (Kuhn, 1970); rather, the exploratory activities of these researchers

represent early fact gathering that provides a necessary base for subsequent theoretical activity.

Applying the reasoning of Kuhn, because such early fact gathering is not driven by predetermined theoretical perspectives about how professionals inquire about practical concerns and organize to change their collective practice activities, all facts may prove to be relevant. Further, such research tends to be conducted in available settings and using conceptual frameworks that are close at hand to the researchers. The use of multiple theoretical perspectives to explore similar phenomena is also not surprising according to Kuhn: "No wonder, then, that in the early stages of the development of any science different men confronting the same range of phenomena, but not usually all the same particular phenomena, describe and interpret them in different ways" (p. 16).

      Representative empirical studies. Approximately half of the empirical studies identified by my search process either involved practice teams or expressed implications for significant changes in professional activities in team contexts. Because these team-based studies are particularly pertinent to the meso-level research involving inquiry, organizing, and practice dynamics, I have selected a few of these studies to introduce the relevant empirical literature. These selected studies included a longitudinal, multiple case study of clinical practice change within multidisciplinary teams assessed from a knowledge network perspective (C. A. Olson et al., 2010); a single case study of new technology implementation for physician order entry from a role network and social structure perspective (Davidson & Chismar, 2007); an ethnographic study of design engineers implementing new technology (Leonardi, 2009); and an action research project to create new primary care teams using cooperative inquiry groups and employing a complexity theory perspective (Mash et al., 2008). Even these brief descriptions of just four studies illustrate the diversity of conceptual and methodological perspectives that may be brought to the empirical study of professionals in changing practice situations requiring them

to inquire and organize. The brief summaries below are also offered to suggest the complexity

of situations and potentially relevant features of practice situations that give rise to inquiry and

organizing activities.

C. A. Olson et al.'s (2010) three-hospital comparative case study described and explored

changes to ongoing professional activities. In each hospital situation, multidisciplinary clinical

teams were charged with modifying practices in order to achieve the clinical objective of

reducing antimicrobial resistance. The authors adopted a team learning perspective that

emphasized the collective acquiring, producing, and applying of knowledge, creating solutions to

team problems, and implementing changed practice activities to reflect the new knowledge. This

learning perspective focused the authors' attention on how practice-improving knowledge was

acquired and the nature and uses of identified types of knowledge. While typical training and the

dissemination of medical information was pertinent, the study produced a much more varied

picture of the practice-adapting activities of the project teams. The authors employed a

purposeful selection strategy to provide diversity of perspectives and identified functional

knowledge networks as the focus of analysis. These networks extended beyond organizational

boundaries and produced knowledge in the form of local understandings that facilitated further

action. The methods allowed the authors to discover the importance of practical knowledge from

prior experience—knowing how, as distinct from scientific knowing what—as critical to learning

and organizing. The study also documented the use of informal and relationship-based sources

of knowledge, including locally-based evidence from practice, as key elements of the adaptive

process. The authors discovered that important clinical changes were initiated as a result of

efforts to close an observed gap between desired and actual clinical outcomes evidenced by

locally-produced data rather than as a result of organizationally-prescribed criteria. The study

demonstrates the importance of experimental inquiry, including framing problems by teams and progressive refining of possible solutions into tested operating protocols.

Olsen, C. A. et al. (2010) have documented cases of professionals engaged in inquiry and organizing. Through a learning theory lens, the authors noted that change processes were experimental and improvisational, requiring repeated cycles of experiential learning (Kolb, 1984) consisting of strategizing and implementing trials, followed by assessing and adjusting approaches. The authors concluded that these processes were best described as bricolage—a making do with resources at hand (Levi-Strauss, 1974, p. 17). In the terms used in this study, learning and desired change outcomes resulted from progressive inquiry and organizing to improve a problematic situation. Inquiry and organizing among professionals involve local activities that generate and are accountable to local understandings and the filling of performance gaps with locally-generated discoveries.

Leonardi (2009) undertook an ethnographic study of new technology that was implemented by engineers in the automobile design process. This study documented the organizing of new patterns of social interactions (co-worker conversations) and material interactions (engagement with the technology) as the engineers struggled together to understand and implement the new technology. Based on the extensive observations of both social and material interactions, this researcher demonstrated that the social interactions of engineers produced perceptions about the capabilities of the new technology that influenced how the technology was used. Actual use, in turn, was evaluated against the standards of functionality adopted socially, rather than the technical features and purposes actually intended to be served by the system; such actual use created a perception that the technology lacked capability in relation to the socially-determined expectations. The result of these interactions with co-workers

and the system was a decline in use of the new technology over time and the failure of the change initiative. Indirectly, the capabilities and roles of the engineers themselves were limited as a product of both social and technological interactions that resulted in the limited use of the new technology.

Leonardi's (2009) study has established that both social and material interactions were significant factors in determining the ultimate success or failure of the organizational change initiative that was promoted through new technology adoption. The documentation of material interactions revealed the importance of technologies not only as devices to be engaged by humans in effective performances within *practice*, but also as non-human agents with influence over who the human agents became as they engaged with and became partially defined by the operation of the technologies. The study also revealed the complex interrelationship of dynamics that influenced ongoing professional activities and intended organizational change outcomes: The nature and content of the actual human and material interactions and the ultimate outcomes and implications of such interactions cannot be predetermined, even if the organizationally prescribed change objectives may be. Because the social and material interactions were dynamic and involved unpredictable responses, the nature and results of change processes varied as a function of interactional dynamics. In Leonardi's study, the pattern of social interactions and material interactions with technology caused the engineers to reject a particular technology and, in so doing, to frustrate organizational improvements they actually favored.

Technology implementation is frequently treated as a technical matter to be addressed by training. Leonardi (2009) has demonstrated that the introduction of new technology may create uncertainty and stimulate practical inquiry and organizing described in the Introduction. Further, this study is significant in identifying how social and material interactions operate dynamically

in ways that hinder or facilitate successful adoption of the technology and other intended outcomes. In this situation, the pertinent dynamic factors were evident only through extensive, fine-grained observation typical of ethnographic methods, which were well suited for a study of the empirical world under study—the developing use of new technology. As illustrated by the following study, other methods and conceptual frames may provide other evidence of dynamic factors in different situations not requiring or permitting extensive observation.

Davidson and Chismar (2007) used role network analysis in a single case study of the implementation of physician order entry technology to document a series of complexly interrelated changes that resulted from the initiation of three distinct organizational change processes. In contrast to Leonardi's (2009) ethnographic approach and its detailed focus on specific interactions, these authors employed a role network analysis to identify dynamic implications of broader patterns of interactions, established social structures, role interdependencies, and the aligning of social structures with technology capabilities. Their analysis also identified the institutional triggers of changes to professional activities and not merely the technology drivers of such changes. By attending to social structures and alignments, these authors noted professional status and power at work in the form of the deference of other team members to the technology use preferences of physicians. The authors observed that the nurses, pharmacists, and other technical personnel accommodated physician preferences even where it required more work. They described such deference as enacting "institutional social structures of hierarchy, status, and autonomy for physicians" (p. 754), an enactment that, in the authors' view, could have undercut the effectiveness of the entire organizational change effort. This study presents a further example of inquiry and organizing activities of professionals with a focus on larger scale dynamic factors that influenced desired change outcomes.

Mash et al. (2008) have reported on the outcomes of an action research study involving the formation of clinical practice teams. Earlier efforts by managers to form teams had failed to produce effective teams. The authors adopted a self-organizing approach, influenced by complexity theories, and implemented cooperative inquiry groups to improve team success by utilizing structured cycles of planning, actions, observation, and reflection. The inquiry groups identified a number of factors as critical to implementing changes in practice including the number of formal and informal interactions of team members, inclusive communication opportunities that clarified goals and produced coordination, the use of feedback, persistent realignment of professionals to achieve effective teams, cross-boundary team membership, and the openness of upper management to experimentation. Changes to team activities and performance were ultimately driven by the learning that had occurred through cooperative inquiry. This study provides a further example of practical inquiry and organizing to change ongoing practice activities with implications for broader care delivery transformation.

The preceding brief summaries of four empirical studies introduce certain common features of ongoing organizing activities of professionals that occur in changing *practice* contexts. These common features include progressive inquiry involving experience and experimentation oriented to achieving practical outcomes; human interactions and interactions with technology and other materials in the construction of changed practice conditions; creating and applying new knowledge in the form of practical understandings that are particular to the situation and based on local discoveries; confronting and adjusting to some degree to existing organizational structures, roles, power relations, and expectations; and similarly confronting and adjusting social and professional structures, roles, power relations, and expectations. As will also be explored below, activities and interactions effecting significant changes in *practice* also

implicate professional and managerial discourses and related narratives, social and professional

identities, and meaning.

Thematics of visible performances and dynamic influences. Studies involving

professionals engaged in organizing reflect common activity patterns and themes. A thematic

summary of these studies facilitates identifying features of situations that may be hindering or

facilitating certain outcomes—dynamic factors. In turn, developing a framework of such

dynamic features may help to sensitize empirical research to the presence or absence of such

factors (Pickering, 2001). The themes and categories of factors I have highlighted in the

following sections are offered to reveal features of situations involving professionals engaged in

inquiring and organizing. Consistent with this purpose, the following observations are offered as

"thematics of the visible" (Pickering, 2001, p. 165), rather than a conceptual map of factors

causing or explaining phenomena associated with practical inquiry and organizing.[24]

Theme 1: Professionals engage in progressive, experiential, and experimental inquiry

focused on achieving practical outcomes. The empirical studies I reviewed have reflected a

common general situation: professionals faced clear practical objectives that required changes in

their regular activities and relationships, but also uncertainty about how to go about changing

activities and achieving the outcomes. Under such conditions, the professionals engaged in

activities that constituted practical inquiry as conceptualized by Dewey (1938). As reviewed

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[24] The following thematic summary is necessarily qualified by the limited number of studies identified.
No particular study reflected all of the patterns of activities and themes, and a larger number of studies
might produce additional or different patterns and themes. Also, each of the identified studies was
idiosyncratic to a certain degree; the studies described fact- and context-specific information that was
assessed in a diverse range of settings. For these reasons, the results of this thematic summary cannot be
said to have generally applicable implications and will not be presented in such a light.

earlier, Dewey (1938) has asserted that we experience the full context of our unique situations and engage in inquiry to resolve specific issues involving confusion, obscurity, conflicts, questions regarding the significance of matters, and other problems that arise from the experience of situations. Inquiry is progressive in the sense that it involves multiple framings of questions, ideas, and possibilities to be explored experimentally by putting them into operation to generate observations and new facts. Those results can then be the basis for further refinements of questions and possibilities. The studies of Leonardi (2009), C. A. Olson et al. (2010), and Mash et al. (2008) reviewed above each emphasized progressive questioning, experimenting, and experiencing a changing situation as essential to achieve desired practical outcomes. Professionals do more than just interact and dialogue with each other to achieve these outcomes; they engage fully with the features of the entire situation they inhabit. In this broader sense, experience directed to changing a *practice* has been characterized by:

- the bricolage of making do with what is locally available, including locally-derived, project-based evidence (C. A. Olson et al., 2010);

- accessing informal learning and knowledge resources, including those outside of an organization (Reardon, 2004);

- engaging in co-teaching as a method for creating new teaching processes and stories to communicate the learning from those shared experiences (Roth, 1998);

- seeking out real-world problems to be grappled with in an organizational setting (Elkjaer, 2001);

- investing in new relationships and skills to address activities displaced in a changed situation (Zell, 2003);

- adopting situation-specific provider-patient relationships to enhance patient adherence to medical advice (Lutfey, 2005); and

- engaging in progressive inquiry as an essential feature of individual and organizational learning (Elkjaer, 2001).

While learning is central to achieving new practical outcomes, training is not a sufficient source of such learning; rather, professionals learn by changing their activities in ways that promote achieving new practical outcomes (Elkjaer, 2001; C. A. Olson et al., 2010). Critical aspects of the learning have included performing different activities and talking to others to figure out new professional requirements. These activities were essentially experimental in character. As examples in the context of institutional change initiatives, professionals developed an understanding of new technology and new work patterns through dialogue with other users and the provisional use of the technology (Davidson & Chismar, 2007; Leonardi, 2009). Initiatives targeting changes in the work of medical practice teams (Davidson & Chismar, 2007; Mash et al., 2008; C. A. Olson et al., 2010; Spooner, Chapple, & Roland, 2001) involved working through issues and engaging team members in different roles as ways of adapting to new, externally imposed standards or technology.[25]

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[25] It is interesting to note that the studies involving individual physician adaptation have not particularly emphasized the importance of experience or inquiry in the adaptive process even though each of these studies has documented evidence of change related to professional activities over time. These studies involved grounded theory (Hallier & Forbes, 2004; Hoff, 1999, 2003) and quantitative survey (Thompson & Van de Ven, 2002) methods. It may be that the particular theoretical or thematic perspectives of such methods rendered progressive experience and inquiry as background factors. Nevertheless, the Hoff and Thompson and Van de Ven studies in part support an inference about the importance of differences in experience with the situation, since each of those studies has produced evidence of differences among similarly situated physicians that could have been explained with reference to differences in experiences. Thompson and Van de Ven even called for further research regarding the specific conditions that would produce such individual differences.

Action research projects (e.g., Cook, 2006; Mash et al., 2008; Viitanen & Piirainen, 2003) provide particularly useful insights concerning progressive experimental inquiry because such studies report on change-related processes. As examples of such processes:

- Professionals using cooperative inquiry to form new clinical practice teams engaged in multiple cycles of planning, actions, observation, and reflection over a nine-month period (Mash et al., 2008). Group members generated information from such collective inquiry and then made group decisions about which information was critical to further action steps.

- Another multiple-step process involved assessment, skill development, and the construction of new activities over time to achieve desired changes in professional routines (Viitanen & Piirainen, 2003). The study not only explored changing activities of professionals but also emphasized the importance of asking questions and surfacing cultural and organizational factors that impacted the development of new activities.

- Cook (2006) reported on a multi-phase project that sought to develop inclusive practices for early child care and education. The project utilized mentors whose activities focused on supporting "the process of setting-based thinking, putting research into practice and providing data for the evaluation" (p. 420). The data included a set of indicators that were used for evaluation, but the use of those indicators for evaluation was less important to change outcomes than the way the professionals worked toward the indicators through "critical reflection on and in practice" (p. 431).

- Two other studies employed action research to overcome excessive reliance on technical perspectives and capabilities among professionals by seeking to enhance aesthetic capabilities (Bleakley, Farrow, Gould, & Marshall, 2003) and the use of metaphors (Ragsdell, 2000).

- A particular strength of action research evident from the preceding studies was the ability to tease out limiting assumptions and engage multiple perspectives in the early stages of program design so that discoveries could be enacted in changed practice activities.

The action research projects themselves were structured as observable inquiry processes that were focused on resolving problematic aspects of changing situations through progressive experimental and reflective activities. In this respect, these studies may be characterized as involving action research inquiry about the practical inquiry processes of the professionals in the changing situation—the collaborative inquiry that was undertaken by a group in each of the reported research settings.[26]

Professionals who engage in progressive inquiry start from an uncertain position and therefore must address key questions that underlie the developing of prudent courses of action: "Where are we going? Is this desirable? What should be done?" (Flyvbjerg, 2001, p. 60). Using Aristotle's typology for intellectual virtues, these questions do not primarily ask what works

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[26] Although he was not making reference to action research, Dewey (1938) made a strong argument for the study of inquiry itself as essential to the management of practical affairs:

> As a mode of conduct, inquiry is as accessible to objective study as are these other modes of behavior. Because of the intimate and decisive way in which inquiry and its conclusions enter into the management of all affairs of life, no study of the latter is adequate save as it is noted how they are affected by the methods and instruments of inquiry that currently obtain. (p. 102)

(techne or know how) or what is known (episteme or theoretical know why), but must start with the value-based consideration, described by the term phronesis, of what is good or bad with respect to action under the specific conditions.[27]

Studies I reviewed have reflected intellectual pursuits that can best be described as examples of phronesis. These studies have documented examples of such prudent action relating to:

- experimenting with technology to develop workable patterns of use (Leonardi, 2009);

- developing new practical knowledge, including by using informal sources of knowledge (Reardon, 2004) and relying on locally-derived evidence rather than external standards (Cook, 2006; C. A. Olson et al., 2010; Spooner et al., 2001);

- relying on everyday, practical knowledge rather than research results (Mylopoulos & Scardamalia, 2008);

- adopting a professional development approach that relies on situated knowledge (Truscott & Truscott, 2004);

- relying on self-organization rather than managerial control in establishing new practice configurations (Mash et al., 2008);

- relying on established clinical performance standards[28] with longer histories of evidentiary validity (Maisey et al., 2008);

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[27] According to Flyvbjerg (2001), Aristotle's intellectual virtues can be summarized as distinguishing between scientific knowledge derived through analysis (episteme), craft and art oriented to instrumental production (techne), and ethics involving deliberation about values with reference to practical action (phronesis) (p. 57). Flyvbjerg observed that phronesis has no corresponding modern term but nevertheless can be understood as concerned with the prudence of practical action rather than theory or techniques (p. 57).

- developing new roles and interdependencies in group activity contexts (Davidson &
  Chismar, 2007);

- experimenting with co-teaching to produce new teaching knowledge (Roth, 1998);

- accommodating different professional roles and expectations (Spooner et al., 2001);
  and

- establishing shared dialogue to work through practice change issues (e.g., Cook,
  2006; Mash et al., 2008; Viitanen & Piirainen, 2003; Zell, 2003).

The identified action research studies (Cook, 2006; Mash et al., 2008; Viitanen & Piirainen, 2003) are also examples of prudent practical action—action research used "the experience of trying to improve some practical aspect of a real situation as a means for developing our understanding of it" (Cook, 2006, p. 419). Lying at the heart of action research and other research involving evaluation and development activities are the phronetic questions asked by Cook (2006): "How is practice characterized as worthwhile? What should count as evidence of worthwhileness? Who decides? How can knowing facilitate action?" (p. 423). Cook also observed with particular reference to action research designs: "The use of

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[28] An emphasis on the values and prudence of action may help to balance efforts to reduce matters of professional judgment to quantitative performance standards, especially where more difficult to assess clinical practice attributes such as consultation skills and continuity of care are involved (Exworthy et al., 2003). Expanding on the concept of human care, Polkinghorne (2004) has cautioned against the trend to establish technical performance standards as the overriding criteria for the performance of care in the human realm. He has argued that such care should be based on a "reflective understanding" (p. 176) that underlies professional judgment in particular decisions. Such judgment is situationally attuned, is based on "the full human capacities for interacting with other persons," integrates "personal and cultural learning," and integrates "imagined scenarios of responses to an action, and of emotional reading of possible actions in the situation" (p. 176). Effective care involves matters of prudence that extend beyond the mere application of technical knowledge and evidence-based results.

collaborative action research offered a means of getting close to finding out what might produce new understandings and how that might link to a change in practice" (p. 432).

Based on the foregoing discussion, empirical research of professionals engaged in inquiry and organizing should identify the activities and outcomes of progressive inquiry, experimentation, and practical experience. Such activities may include repeated cycles of experience, experiments, reflection, new activities, and inquiry directed to the resolution of problematic aspects of situations. The phronetic orientation of activities and local knowing of the professionals in these studies are additional characteristics of activities directed toward changing practices. Inquiry into such activities and outcomes will document how inquiry and organizing activities actually proceed and promote understanding about how *practice* might ultimately be changed in significant respects as a result.

Theme 2: Achieving new practical outcomes is facilitated or hindered by the dynamics of social and material interactions. The case study of C. A. Olson et al. (2010) and the action research project of Mash et al. (2008) establish the importance of social interactions in organizing to create a *practice* or change *practice* activities. Social interactions have been demonstrated to be critical in different contexts including:

- developing team teaching protocols (Roth, 1998);

- creating multidisciplinary teams (C. A. Olson et al., 2010) and primary care practice teams (Mash et al., 2008; Spooner et al., 2001);

- implementing pilot projects (Cook, 2006);

- improving team effectiveness and group learning (Reardon, 2004); and

- working collaboratively to adapt to a departmental realignment in higher education (Zell, 2003) and material changes in clinical practices (C. A. Olson et al., 2010; Spooner et al., 2001).

These studies have emphasized the organizing and other change-promoting social interactions that occurred in response to changing situations or to create such changes. The studies I have identified did not feature interactions within stable professional routines.

The purposes of social interactions in changing situations have included enhancing communication, coordination, and good relationships (Mash et al., 2008), achieving collaboration and dialogue among a broad range of participants in action research contexts (Cook, 2006; Viitanen & Piirainen, 2003), and engaging in shared dialogue about change itself (Zell, 2003). Further, social interactions have helped to create or access knowledge necessary to implement required practice changes and adopt new practice roles. This new knowledge has resulted from practical and informal learning through peer-to-peer interactions and from knowledge sources outside of the organization (Reardon, 2004), interacting within observed knowledge networks (C. A. Olson et al., 2010), learning through new activities (Roth, 1998), and engaging in practical problem-solving (Elkjaer, 2001; Gard et al., 2002). Leonardi's (2009) study also emphasized the critical importance of social interactions in creating interpretations of a changing situation. As illustrated by that study, not all interactions produce favorable outcomes; in that situation, social interactions contributed to a limiting and distorted interpretation of new technology that reduced the perceived functionality of the technology and frustrated the purposes of an organizational change process.

Social interactions have been a central feature in studies where changes to existing work patterns among agents were involved. Such changes in patterns were positive occurrences, for

example, in a situation where changes to internal role networks helped to implement organizational objectives (Davidson & Chismar, 2007). Changes in patterns of interaction also were negative, for example, where an instance of technology implementation resulted in a narrowing of the professionals' practice and social roles (Eriksson-Zetterquist, Lindberg, & Styhre, 2009). The absence of adequate social interaction was implicated in three of the identified studies that explored the failure of organizational change efforts. The failure of an effort to create a learning organization was attributed, in part, to over-reliance on training conducted at a remote location from the work site and the failure to form permanent groups to engage with problematic work situations that would have provided real learning opportunities (Elkjaer, 2001). The prescription to fix an earlier, failed effort to implement clinical practice teams included providing opportunities for genuine dialogue and negotiating complementary roles among group participants (Mash et al., 2008). The failure of participants in a consolidation of academic departments to identify with the new departmental structure was attributed to the lack of sufficient social interactions and the failure to build meaningful interpersonal connections (Mills, Bettis, Miller, & Nolan, 2005).

The preceding observations suggest that professionals who are required to significantly change their *practice* do so by first changing the nature of their interactions and relationships in essential respects. They achieve desired changes in the patterns of their activities by developing new understandings and knowledge through inquiry and new interactions. In turn, these understandings, which develop over time in changing situations, facilitate the organizing of teams and projects, and also new forms of relational engagement with the potential to change collective professional performances and organizational structures and outcomes.

Leonardi's (2009) study of technology implementation summarized above also emphasized the importance of interactions with non-human aspects of the situation, *material interactions*. Material interactions have human and organizational effects. As examples:

- Implementing a new physician order system resulted in changes in human roles and social interactions and created new social interdependencies (Davidson & Chismar, 2007).

- Installing a new purchasing system reduced the need for professional judgment and experience and created narrowed roles of professionals (Eriksson-Zetterquist et al., 2009).

- Delivering nursing services to remote locations through technology significantly changed the patterns and quality of nursing care and resulted in more rule following and lower levels of psychologically and socially supportive care when compared to the care offered in face-to-face clinics (Oudshoorn, 2009).

The Leonardi (2009) study has revealed a further important point about the effects of social and material interactions—because the social and material interactions were dynamic and involved unpredictable responses, the nature and results of change processes were emergent and varied as a function of interactional dynamics. Other studies have similarly viewed practice change processes as emergent (Lau et al., 1999; Korica & Molloy, 2010) and even opportunistic (Lau et al., 1999). In view of such dynamics, interactions may produce surprising outcomes. Leonardi emphasized that the engineers in question understood the nature of the planned change and even favored it, but nevertheless ultimately traveled along a path of interactions that caused them to reject the technology and frustrate an organizational change they favored.

Unanticipated results also appeared in the studies by Hoff (1999, 2003). These studies had built on the earlier work of Hoff and McCaffrey (1996), which had demonstrated that adaptive strategies of physicians in response to health industry and economic change were negotiated by physicians in light of work setting differences and that change was not experienced uniformly. The latter two studies also involved physicians in transitions from clinical practice to management (Hoff, 1999) and as employees experiencing change in a large health maintenance organization (Hoff, 2003). The 1999 study concluded that physician-managers created divergent identities based on whether they chose to affiliate predominantly with organizational or professional values; these physicians did not cohesively adopt a professional affiliation as contemplated by sociological theory. The 2003 Hoff study demonstrated that physician-employee views of professional work and organizational life developed socially, changed over time, and were intended to create positive expectations and faith about employee life, even at the expense of reducing physician adaptive capacities. These studies together have provided strong indications that social interactions and material interactions of professionals in changing *practice* contexts produce adaptive actions and outcomes that are both emergent and divergent. Importantly, the Hoff studies demonstrated that choices and changes regarding practice activities and subsequent interactions preceded and governed professional attitudes and identities, not vice versa.

In summary, future research of professionals in changing situations should be sensitized to the dynamics of social and material interactions and the intended and unintended consequences of such interactions. These interactions and outcomes might be revealed in a number of specific collective activities, include marshalling or creating of discoveries, engaging in other collaborative learning activities, communicating, conversing, and negotiating. Such

activities may also involve changing group structure, membership, or roles, and generating team-based learning or other coordinated action. As also suggested by a few studies, the surprising and divergent nature of occurrences in changing situations may be associated with the emergent and dynamic nature of interactions.

Theme 3: Professionals in changing situations generate and apply practical knowledge derived from local discoveries and constructions. Professionals engaged in changing professional situations addressed specific challenges that arose under unique conditions. Their collective actions were driven by local knowledge discovered through practical inquiry and matters that came to their attention as having significance. Capturing local variations in situations and experiences that occur as professionals inquire and organize may produce important insights about changing practices that could otherwise be missed. A number of empirical studies illustrate this point:

- Adaptive activities of professionals involved a bricolage of informal and relationship-based sources of knowledge, including locally-based evidence from ongoing practice activities and practical know-how from prior experience (C. A. Olson et al., 2010).

- Adaptive strategies used by physicians in response to major industry changes were created based on the characteristics of specific work settings and therefore were not experienced similarly by all physicians in the changing situations (Hoff & McCaffrey, 1996).

- Physician-managers in the context of organizational change adopted identities based on specific work choices rather than evidencing a common professional response that might have been anticipated from macro-level theories about professionals (Hoff, 1999).

- The unique patterns of interaction of professionals with each other and with technology helped to explain technology adaptation (Davidson & Chismar, 2007; Lau et al., 1999; Leonardi, 2009).

- Locally produced patterns of communication, dialogue, coordination, and collaboration were critical to change in professional activities (Mylopoulos & Scardamalia, 2008; Reardon, 2004; Zell, 2003), especially in reported situations involving action research (Cook, 2006; Mash et al., 2008; Viitanen & Piirainen, 2003).

Efforts to change professional procedures and routines have depended on professional relationships, dialogue and communication for an important reason—discoveries and understandings generated in changing practice situations, including the perspectives of individual professionals, were socially constructed (Gergen, 1994, 2009a, 2009b). Empirical studies have adopted a social construction view of knowing in a wide range of professional situations and for various research purposes, including research

- documenting learning by science teachers (Roth, 1998);

- documenting successful change of clinical routines by a multi-disciplinary team of medical professionals (C. A. Olson et al, 2010);

- demonstrating how adopting new technology in clinical settings was accomplished and limited by accommodating physician use patterns (Davidson & Chismar, 2007);

- evaluating a professional development model by applying principles of situated knowledge and scaffolded learning techniques (Truscott & Truscott, 2004); and

- exploring shifting roles of physicians in constructing patient advice in ways most likely to promote adherence by individual patients (Lutfey, 2005).

As emphasized by Gergen (2009a), dialogue lies at the center of meaning creation, and such dialogue may contribute to transformative outcomes by promoting innovative collaborations.[29]

Research methods and data collection techniques should be sensitized to identify how locally situated knowledge is generated and applied to create tangible changes to collective *practice* activities, relations, interactions, and arrangements and enhance prospects for larger-scale transformation (Gergen, 2009a). Such knowledge is likely to be evidenced by knowing-in-action based on experience and discovering new understandings from inquiry that can be put to use in implementing observable changes to professional routines and arrangements.

Theme 4: Professionals in changing situations seek to reorganize professional, organizational, and social structures and roles, and, in the process, engage with established power relations, and embedded leadership. One of the more salient features of the studies I have reviewed is that professionals responding to changing situations regularly engaged with and changed organizational and professional roles and structures. In the health care field, four studies involved significant changes to physician or other professional roles in clinical contexts (Davidson & Chismar, 2007; C. A. Olson et al., 2010; Spooner et al., 2001; Viitanen & Piirainen, 2003), three studies involved transitions of physicians from clinical to management roles (Hallier

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[29] Even identified quantitative research involving professionals can support the conclusion that important aspects of knowledge are socially constructed. Sicotte, Pineault, Tilquin, and Contandriopoulos (1996) were unable to find statistically significant changes in hospital resource utilization rates by reason of feedback and concluded that group practice structure and social relations mediated the impact of feedback on resource utilization. Thompson and Van de Ven's (2002) quantitative study using longitudinal data identified that the relationship between organizational and professional commitment was not static and was not similar for individual physicians in the study who were undergoing employment transitions under similar circumstances. Recognizing the fact that individual differences were not explained from the quantitative data, the authors called for additional research to understand the relationship of organizational and professional commitment under specific conditions applicable to particular individuals.

& Forbes, 2004; Hoff, 1999; Thompson & Van de Ven, 2002), one study involved the transition of physicians from private clinical practice to employment status (Hoff, 2003), and Mash et al., (2008) addressed new clinical team formation. Three studies involved role adjustments within organizations resulting from new technologies (Davidson & Chismar, 2007; Eriksson et al., 2009; Leonardi, 2009) and an additional four studies involved role changes resulting from proposed or enacted reorganizations (Elkjaer, 2001; Gard, Lindström, & Dallner, 2002; Reardon, 2004; Zell, 2003). These studies illustrate how organizational objectives impacted groups of professionals and their ongoing roles and activities.

Professional as well as organizational structures were implicated in these studies. The Zell (2003) study observed the "process of working through resistance to change in a professional bureaucracy" (p. 87) in an academic setting, while Hoff (1999) also observed a developing hierarchy of clinical managers in a health care study. Professional boundaries were also implicated. Viitanen and Piirainen (2003) sought to expand the influence of a group of professionals at the borders of the professional subculture while encountering managerial and cultural limitations. Similarly, Eriksson-Zetterquist et al. (2009) noted negative work role impacts at the boundaries of professional jurisdiction in connection with new technology implementation. The qualitative studies involving physician transitions to management also reflected how divergent managerial and professional perspectives were brought into conflict (Hallier & Forbes, 2004; Hoff, 1999). Broader social structures also have been acknowledged in some studies as professionals worked collectively to achieve new practical outcomes. Aligning social structures with technology was implicated in the studies of Davidson and Chismar (2007) and Eriksson-Zetterquist et al. (2009). Adaptive learning activities of professionals in

organizational settings have been facilitated by broad social alignments that reach beyond organizational boundaries (Mash et al., 2008; C. A. Olson et al., 2010; Reardon, 2004).

As professionals engaged with existing roles and structures, they also engaged with established organizational and professional power relations. Power relations were evidenced in hierarchical managerial relations and decisions that may have adversely affected adaptive activities of professionals. As examples:

- Viitanen and Piirainen (2003) clashed with a "not-to-be-crossed invisible line" (p. 185) concerning cultural expectations about professional competence. This particular action research project, which was designed to expand the boundaries of professional expertise, drew an immediate, corrective managerial response.

- Elkjaer (2001) noted the managerial rejection of professional projects was an indicator of the absence of a learning organization.

- Eriksson-Zetterquist et al.'s (2009) study of deskilling that resulted from new technology emphasized the importance of the interplay of technology with power relations. While the authors supported the view that technology itself was politically and professionally neutral, they observed that "when technology is bundled with politics, ideology, and managerial procedures and practices, substantial organizational effects may be generated" (p. 1164).

Power relations were not exclusively revealed by managerial action. Hoff (1999) also noted the selective use of information for coercive purposes by physician managers in clinical settings. Deference to physicians was further evidence of the presence of power relations in other studies (e.g., Charles-Jones, Latimer, & May, 2003; Davidson & Chismar, 2007; Huby et al., 2008).

Studies that dealt with issues involving organizational structure and mid-level management were largely silent on the importance of the organization's executive leadership. In contrast, however, the studies did contain some references to *practice*-level leadership where change-oriented activities were involved. Essential leadership identified by the studies I have reviewed as embedded in practice roles has included the work of mentors (Cook, 2006; Viitanen & Piirainen, 2003); project champions (Lau et al., 1999; C. A. Olson et al., 2010); group leadership focused on adaptation (Zell, 2003); supervisory support and guided delegation (Gard et al., 2002); and local leader support (Spooner et al., 2001). In medical contexts, the importance of physician engagement (Spooner et al., 2001) represented a form of practice-embedded leadership, even where deference to physician prerogatives was also required (Davidson & Chismar, 2007). In contrast to the presumption of physician deference, but furthering confirming the practice-embedded nature of leadership, Maisey et al. (2008) emphasized the importance of focusing on the influence of nurses in changing situations. These authors observed inconsistent physician support for changed care conditions and noted that reported practice improvements associated with performance-based incentives would not have occurred if earlier quality improvement efforts had not placed nurses in a position to deliver improved results. The participatory nature of activities oriented to changing aspects of practice in the action research studies (Cook, 2006; Mash et al., 2008; Viitanen & Piirainen, 2003) could be also reframed as examples of distributed leadership (Gronn, 2002, 2003) or shared leadership (Pearce & Conger, 2003), even though the studies do not use those terms or concepts.

Theme 5: Professional responses to changing situations involve discourses and narratives and implicate identities and meaning. Empirical studies I have reviewed have reported the use of narratives in the form of stories of professional experiences in changing

situations. As an example, Roth (1998) emphasized the importance of meaningful stories of shared teaching experiences that held the potential to preserve and extend knowledge created from professional experiences. A number of studies have explored the use of managerial and professional discourses and rhetoric—speech that expresses the positions and values associated with traditional management and professional roles. While discourses have been employed to communicate values and affiliations, such discourses also have helped to reveal conflicts. Discourses and rhetoric have been implicated and even placed in conflict by organizationally driven changes to professional routines. In some studies, discourses were inconsistent with ongoing activities (Checkland et al., 2008; Hoff, 2003); in other studies, the professional and managerial discourses themselves were in conflict (Bleakley et al., 2003; Charles-Jones et al., 2003; Hoff, 2003; Huby et al., 2008).

Discourses have been evident in studies exploring professional identity (e.g., Charles-Jones et al., 2003; Checkland et al., 2008; Huby et al., 2008) and the impact of power and status (e.g., Charles-Jones et al., 2003; Huby et al., 2008) in change contexts. Identity has been linked to discourses since both relate to professional and organizational affiliation, roles, role changes, and other professional activities involving *practice* (Hallier & Forbes, 2004). Such affiliations, roles, and activities in *practice* are sources of meaning that are expressed through narratives (Rouse, 1996). Further, meaning and identity are linked together both by broader professional and cultural discourses and by more specific and situated stories and sensemaking (Weick, 1995) in changing *practice* situations.

Professional identities and related professional roles, narratives, discourses, and rhetoric have been implicated in a range of different changing situations, including the following:

- Physicians transitioning to manager roles created divergent professionally- or organizationally-oriented identities (Hoff, 1999). The different outcomes were explained as functions of different organizational subcultures and related beliefs.

- Organizational rhetoric has been used to influence expectations and faith of employed physicians in the context of significant organizational change (Hoff, 2003). Based on longitudinal data, Hoff (2003) was able to demonstrate how both rhetoric and expectations changed over time.

- Adopting technology that narrowed the scope of professional discretion has resulted in a narrowing of social roles of professional purchasers and thereby causing "deskilling" (Eriksson-Zetterquist et al., 2009), a concept loaded with negative implications for professional identity.

- In contrast, voluntary physician participation in a quality improvement program was motivated more by personal and professional pride than by incentives offered for participation (Spooner et al., 2001). This study illustrates how engaging with other professionals to achieve desired changes in practice activities may also have positive implications for professional identity.[30]

The relationship between narratives, discourses, meaning, and identity may be explored by reviewing key elements of three studies involving significant changes in practice activities.

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[30] Other studies have also discussed similar phenomena involving narratives, discourses, and rhetoric, including the use of contrasting managerial and patient-centered discourses (Charles-Jones et al., 2003); references to professional autonomy (Exworthy et al., 2003); the adoption of a variety of relational roles to enhance patient adherence to medical protocols (Lutfey, 2005); professional identities and status as linked to power (Robinson & Cottrell, 2005); and the use of narratives along with rich pictures to reduce over-emphasis on engineering technical skills and to promote culture change (Ragsdell, 2000).

Two of these studies are intertwined physician practice change studies that involved health care contract changes in the United Kingdom (Checkland et al., 2008; Huby et al., 2008) and the other is a grounded theory study of physicians who underwent practice transitions to clinical management (Hallier & Forbes, 2004). The two British health contract studies involved overlapping research teams reporting on different aspects of a study conducted at the same four clinics. The study of Checkland et al. (2008) explored long-standing professional discourses that emphasized the importance of holism in patient care. These discourses had become central to the identities of general practitioners. These researchers concluded that observed behaviors promoted by changes in contractual requirements were inconsistent with the holistic practice of medicine articulated in professional discourses. The authors did note, however, that they expected the general rhetoric of practice to be brought into line with actual practices over time. Huby et al. (2008) used narrative approaches to focus on the stories told about medical practice characteristics by professionals at the individual clinics in the study. These narratives varied locally, but were also related to more general professional discourses about medical practice. The narratives not only were offered for public consumption but also were rehearsed internally as a part of sensemaking (Weick, 1995) that created after-the-fact meaning from practice experiences for the benefit of the entire practice staff. These authors also noted inconsistencies between changes in practices and the narratives that reflected historical conditions, concluding that the narratives tended to continue because they were promoted by physicians in power and could not be challenged directly. Professional identity was not mentioned as implicated by the more narrowly-crafted narratives. In the third pertinent study involving aspects of meaning and identities, Hallier and Forbes (2004) principally reported study results as a methodological exploration of grounded theory development, but also addressed the question of why

sensemaking diverged among physicians who were making similar transitions from clinic practice to management roles. Their data demonstrated that the more adaptive physicians adopted management practice identities that rendered anticipated management activities as compatible with adopted professional values; in contrast, the other physicians envisioned more conflict between new management roles and ongoing clinical interests. At least in the role change context studied by Hallier and Forbes, adjustments to professional identity based on anticipated, favorable stories about practice preceded or accompanied positive sensemaking about new practice activities when they were undertaken.

The foregoing studies suggest that role- and activity-specific change may be accommodated by adjustments to professional identities that do not disrupt larger professional discourses or that can be rendered consistent with such discourses through specific narratives. This conclusion is broadly consistent with the observations of two other studies observing that professionals held both sacrosanct and negotiable values (Morgan & Ogbonna, 2008), and that professional identities were more fluid than might have been anticipated (Korica & Molloy, 2010). Mills et al. (2005) noted that multiple factors and identities were evident in change situations and that meaning in the context of change was constructed by participation in meaningful interactions.

The interaction of organizational and professional forces has produced conflicts in established organizational discourses and professional adaptation. The rhetoric that accompanied those discourses and narratives of changing professional roles and identities represented accessible phenomena in contexts involving professionals who are responding to changing practice situations.

Using empirical studies of professionals to understand practice dynamics. The studies summarized above addressed how professionals changed or responded to changes affecting aspects of shared activities, relations, interactions, and arrangements and the consequences of those changes at group and organizational levels. While these studies did not utilize common descriptive language or conceptual frameworks, the preceding thematic summary has identified a number of common themes and activity patterns that present a dynamic interplay of specific features in changing *practice* situations involving professionals. These studies reflected the dynamic influence of certain features which facilitated desired collective action and other features which hindered such action (Rouse, 1996; Schatzki, 1996, 2002). As I will explain, these features of situations constituted dynamic resources that were identified as significant by researchers in the respective situations they investigated.

At the outset of this literature review, I presented a generic story of inquiry and organizing in professional life in partial explanation of the theme "*practice* as professionals organizing emerging collective culture."[31] The preceding thematic review of empirical studies has highlighted certain change-promoting features of professional *practice*—the dynamic influences that arise by reason of inquiry and local discoveries, social and material interactions, reorganizing structures and confronting power relations, and developing meaning, significance, and identities. These themes reflect an active, emergent side of *practice* that produces some

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[31] As presented earlier, professionals are key actors in *practice*, and they inquire and organize to fill the gaps and address the issues in *practice* that they identify. Their inquiry occurs under conditions of uncertainty and doubt where significant discoveries and features of the situation emerge and require responsive action. Their responsive action is grounded in what they discover as becoming meaningful and significant to *practice*, oriented to achieve collective professional, organizational, and system outcomes, and organized to create lasting changes in professional and organizational culture.

additional detail to the earlier generic story of professional life: Dynamic conditions of

uncertainty, conflicts, and other problematic features of changing situations stimulate

professionals to engage collectively in progressive, experimental inquiry and make discoveries

pertinent to desired practical outcomes. In turn, inquiry engages professionals in new social and

material interactions, producing local knowledge about how to move forward. Professionals also

organize to apply discoveries from inquiry and to change problematic aspects of existing

structures, roles, and established power relations. Discourses, narratives, identities, and meaning

are implicated and developed by professional activities oriented to practical inquiry and

organizing. The empirical examples of practical inquiry, organizing, interactions, local

knowledge, and other features of the reported situations may be used as examples of the types

and categories of dynamic features that may be evident in other settings.

Expectations/Purpose: effects of norms, values, rules, purposes, beliefs, historical understandings, stakes

Meaning/Possibilities: effects of meaning making, narrative features, future possibilities, identities

Processes/Projects: effects of activity patterns, structures, arrangements, regularities

Knowing/Inquiring: effects of practical inquiry, learning in experience, knowing, knowledge

Space/Positioning: effects of spatial relations, positions, boundaries, hierarchies

Relating/Interacting: effects of social and material relations and interactions

Time/Emergence: effects of time, uncertainty, emerging conditions, changing situations

Power/Ideology: effects of ideology, differential treatment, power relations, and power-reinforcing social alignments

Figure 1.1. Categories of change facilitating and hindering dynamic features of practice situations. These features also generate cultural resources that are available to practice participants to construct meaningful collective action.

These change-promoting dynamic influences are revealed in connection with the more stabilized, change-resisting features of professional and organizational life: The norms, expectations, values and purposes of professional life; the patterns of existing working practices, processes, and projects; established spatial relations and positioning including organizational boundaries and hierarchies; and operating power relations and supporting social alignments. All of these features of situations exercising dynamic influence have been incorporated into a framework of dynamics resources introduced in first chapter and illustrated in Figure 1.1.

As suggested by the preceding paragraphs and Figure 1.2, dynamic features of situations reveal themselves in the context of ongoing performances; and particular categories of these features may typically have change-inhibiting effects—features that tend to promote stability of collective action—or change-promoting effects with respect to such performances.

Figure 1.2. Typical dynamic effects of features of practice situations on future action. Collective action is built on a foundation of beliefs, processes, and positions but responds to emerging power relations, interactions, discoveries, and new possibilities.
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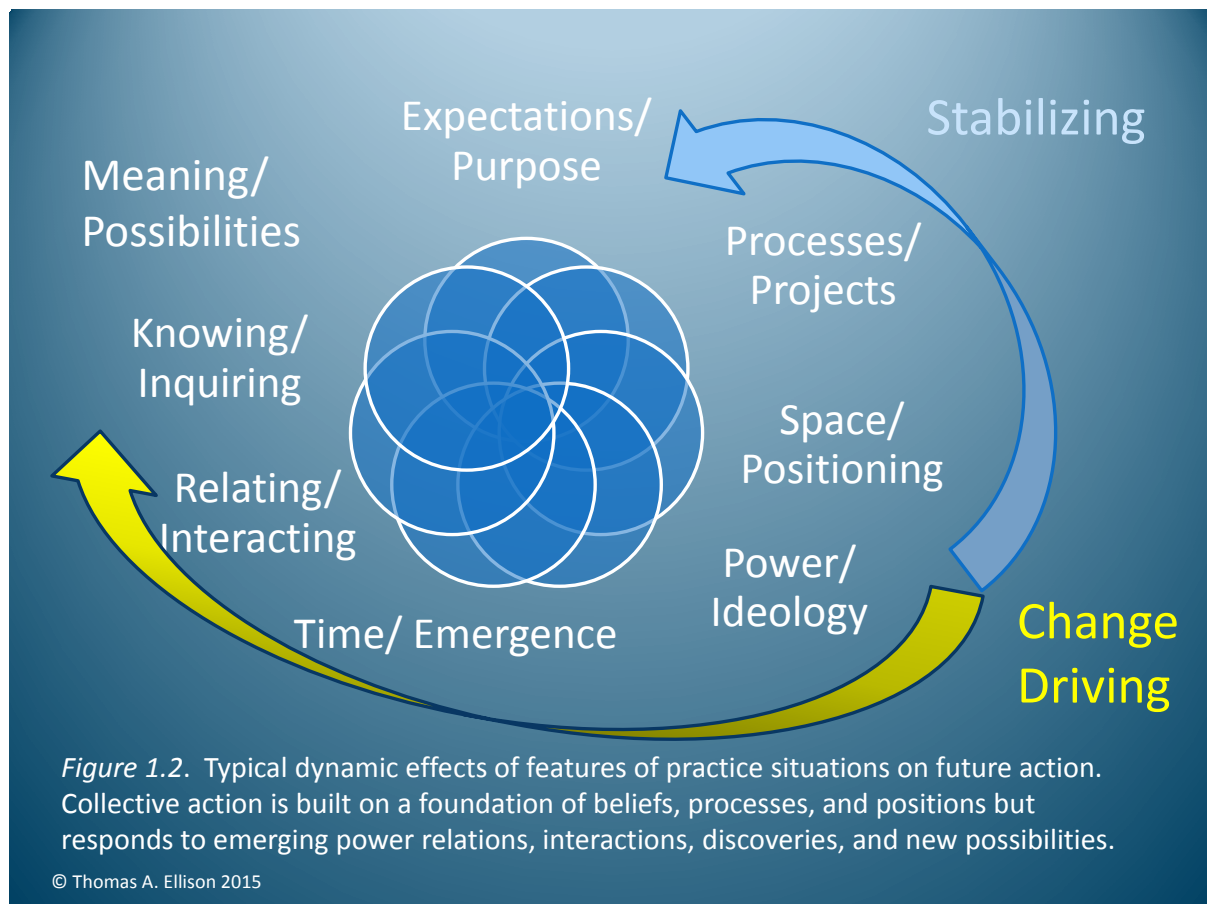
But as illustrated by the summary of empirical studies and the earlier discussion of cultural resources, even the more stable features of *practice* are also implicated by change-oriented efforts. As key examples from the empirical studies, new knowledge alignments were implicated in developing new processes (e.g., C. A. Olson et al., 2010), and new relational and material interactions were evident in efforts to change work processes by introducing new technology (e.g., Leonardi, 2009). One theme presented earlier summarized numerous studies that involved changes in organizational positions and structures. Further, even established dynamic influences are subject to modification through inaction, as in the case of non-enforcement of rules, tolerated shifts in power alignments or work practices, or local adaptations. As noted earlier in this literature review, change rather than stability of *practice* is the usual condition; failures to enforce compliance with norms or consistency in processes are primary sources of such change (Fuller, 1993, p. xv; Rouse, 1996, 2001, 2002). This entire complex of dynamic relations is further subject to change over time through the emergence of new knowledge and environmental change drivers. In short, actions and features of situations operate in combination and in response to emergent conditions to create dynamic influences that facilitate or hinder future action.

The preceding discussion demonstrates the categories of dynamic features identified on Figures 1.1 and 1.2 are not inherently stability-producing or change-promoting; rather than operating to limit change outcomes in every circumstance, changing expectations, projects, and positioning within organizations may operate in certain circumstances to promote desired changes in *practice*, while constraining changes in other situations. Similarly, but in more stable situations, professional interactions, inquiry, and established identities may operate to enhance stability and discourage change. Only ideology, which is crafted to promote stability, and time,

which inherently introduces uncertainty and emergent features of situations, tend to introduce similar influences across situations.[32] But regardless of these general observations about dynamic influences, what makes the difference in each situation is embedded in collective performance—how participants collectively respond or do not respond to each other and to emerging features of *practice* will determine whether those features operate to constrain or facilitate particular outcomes. What participants in *practice* respond to are the features of situations they identify as significant and meaningful in their accounts of their actions and future trajectories. The patterns of performances and structured arrangements should reveal a certain "informal logic of action" (Geertz, 1973, p. 17) of ongoing activities that can be assessed for responsiveness or lack of responsiveness to pertinent change drivers. Change responsiveness may be reflected in interpretative activities that are focused on understanding how to grasp and cope with the dynamic influences of a situation (Rouse, 1987, p. 63). As emphasized by Rouse (1987,) the grasping together of disparate elements of a situation is a practical activity focused on action rather than developing a conceptual understanding or applying theory (p. 63). Ultimately, an understanding of a situation encompasses "the way one's actual situation hangs together and makes sense as a field of possibilities for interpretation" (p. 63) and future action.

The following Table 2.1 includes some additional detail about the overlapping categories of dynamic features of *practice* and examples of change-promoting and change-constraining effects of features within these categories.

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[32] Even these observations about ideology and time must be substantially qualified. Ideological connections to founding stories and principles of innovative companies may encourage the unbending application of certain proven procedures and enhance innovative outcomes over time. While the passage of time may introduce emergent and uncertain influences, responsiveness to such influences may be dulled, for example, through the effects of ideology, outmoded understandings and processes, and power alignments that reinforce existing organizational structures and boundaries.

Table 2.1

Overlapping Categories of Practice Dynamics and Indicators of Dynamic Influences in Practice

Categories and examples of responsiveness of participants to dynamic influences in *practice*	Examples of situational features and actions hindering change-oriented outcomes in *practice*	Examples of situational features and actions facilitating change-oriented actions in *practice*	Essential change-oriented activities and outcomes
Expectations/Purpose—Responsiveness to historical influences including expectations, norms, values, rules, beliefs, practical understandings and the consequences of such factors; inconsistent or unexpected responses and enforcement or non-enforcement of rules and norms; use of the above factors as sources of dynamic influence	Emphasis on rules, historical understanding, expectations, cultural values, and beliefs; enforcement of norms to promote stability; lack of perceived or intelligible options; lack of common language or other basis for common understanding	Reassessment of rules, understandings and expectations, ends and goals; non-enforcement of existing norms; changing values and beliefs; issues or conflicts concerning values, rules, performances, or expectations; changing interpretations	Re-interpreting rules, understandings, expectations, and ends; assessing and enforcing new norms; non enforcement of existing norms
Processes/Projects—Responsiveness to influences of working practices, routines, processes, projects, and arrangements; use of processes and projects as sources of dynamic influence	Continuation of existing or outdated processes and routines; projects extend existing operations and capabilities; stability of situation as permitting continuation of activity patterns and arrangements over time; absence of process changes or new projects in response to emerging conditions or requirements	Evident changes in situation, and responsive changes to practice structure and activity patterns or arrangements; new change-oriented processes and projects; effects of new technology or process improvements	Reorganizing processes, projects, tasks, and other arrangements
Space/Positioning—Responsiveness to influences of positioning, adjacencies, boundaries, roles, strategies, hierarchies, and bureaucracies; use of the foregoing as sources of dynamic influence	Consistent spatial relations, including proximity and remoteness; effects of organizational and professional boundaries, roles and positions; effects of hierarchies and bureaucracies; consistency of strategic positioning	Changes in organizational structures or strategies; action across organizational and professional boundaries; boundary conflicts	Re-positioning with respect to boundaries, roles, adjacencies, strategies, and organizational structures
Power/Ideology—Responsiveness to power relations allowing or denying access to	Presence of identifiable power relations and established social	Changes in power relations and/or social alignments that limit	Realigning agents and resources toward intended change-oriented processes

something of value and social processes oriented toward power; political influences; ideology, grand discourses, and rhetoric; use of the foregoing as sources of dynamic influence	alignments that reinforce power; power-oriented discourses; rhetoric in support of power exercises; deference to power; use of ideology, grand discourses and rhetoric	power; contested discourses and rhetoric	and outcomes
Time/ Uncertainty—Responsiveness to emerging influences, consequences of passage of time, and uncertainty; use of time as a source of dynamic influence	Stability and continuity over time; inaction in the face of surprise or uncertainty; lag effects	Emergent conditions; surprises, unexpected process outcomes or systems effects; changes affecting time, sequences, processes, or system operations; lapse of time	Reacting to emerging features of situations, discoveries, and uncertainties
Relating/Interacting—Responsiveness to relational influences and the use of relations, interactions, and interdependencies as sources of dynamic influence	Stability in patterns of social and material interactions; managed interdependencies; stability in social and professional identities	Effects of social and material interactions; changes in patterns of interaction; change-oriented interactions; changed outcomes; developing new roles and interdependencies	Relating and interacting differently with people and things
Knowing/Inquiring—Responsiveness to issues, doubts, surprises, and practical obstacles; discovery processes and discoveries; interpretative activities regarding practical matters; forms of knowing; the use of inquiry and discoveries as sources of dynamic influence	Traditional training; knowledge as content; absence of inquiry processes and discoveries	Practical inquiry; knowledge-seeking across organizational boundaries; learning by doing; bricolage; results of experiments/pilots; incorporating discoveries and know-how in further work; evidence of knowing-in-action; reflecting-in-action	Re-learning, inquiring, experimenting, developing situated understandings, and reflecting-in-action
Meaning/Possibilities—Responsiveness to matters of significance, narratives, new possibilities, and narrative connections including plots, actors, symbolism, and narrative unity; meaning making and developing of collective narrative and holistic understandings; narrative reconstruction; construction of identities; use of narrative connections and possibilities as sources of dynamic influence	Narrative incoherence; conflicting narratives; limited new possibilities; contracting narrative field and options; few matters of significance; well understood meaning and roles	Expansive narrative possibilities; narrative reconstruction; narrative unity across time and participants; shared understandings; new matters of significance (make sense and important to pursue); expanding narrative field and options; new social and professional identities	Re-constructing developing narratives, the developing of new possibilities for action, and re-orienting practice activities around narrative possibilities; constituting agents and professional identities

Table 2.1 suggests that the features of situations may offer change-oriented dynamic resources that are available to professionals seeking transformative outcomes in *practice* situations. Within an ongoing *practice*, features of the situations faced by participants operate to facilitate or hinder the outcomes they are pursuing; but these features may be used practically by participants as dynamic resources in developing new collective understandings and change-oriented courses of action. Such dynamic features of *practice* act as dynamic resources when they become matters that are meaningful to ongoing action and suggest the significance of other matters toward future possibilities and next actions; such features with significance—those with dynamic potential or effect—shed light on other matters of significance and help participants to form a more holistic understanding of their current *practice* situation and its implications for future action.

Narrative Resources in the Study of Practice

The foregoing discussions of cultural and dynamic resources have established a strong link between narratives and features of *practice* situations, including inquiry and organizing processes, emergence, the developing of collective action and understanding, and culture building. At a basic level, practical performances, including inquiry and organizing, form sequences of events that play out over time and can be narrated. Sequences include emergent conditions that may hinder or facilitate certain courses of action and performances. Developing collective action through organizing involves relational interactions that can be crafted into an account. Changing patterns of responsive interactions over time as reflected in narrated events may suggest a cultural re-weaving that is underway. Organizational becoming (Tsoukas & Chia, 2002) is storied. But at a more fundamental level such patterns of collective action only make sense as a part of ongoing stories that are enacted (Rouse, 1996, pp. 158-165). In this respect,

the narrative contents of *practice* are also generators of narrative understanding (p. 160) and carriers of cultural meaning and significance (pp. 166-178)—matters become significant in light of the storied history of *practice* and the future possibilities for action that are revealed through storied connections as *practice* unfolds. These two approaches to narrative content reflect a very different positioning of narrative for purposes of social science research concerning *practice*. The former may be characterized as focusing on the story itself—either developing storied accounts about *practice* or focusing on stories told in *practice* settings. The alternative approach, consistent with Rouse's (1996) philosophical studies of scientific practice, is concerned with meaning and significance communicated through narrative connections that are embedded in accounts and patterns of *practice* activities. In the following sections, I will first touch broadly on the applications of narrative research methods and will then explore an approach employed in the practice study methodology that uses narrative connections available in a *practice* situation as narrative resources to identify what is meaningful and significant to *practice*.

Narrative research. Narrative research strategies have been used for a wide range of purposes in organization studies, including the study of stories in organizations (Boje, 2008; Gabriel, 2000), and the obtaining of narrative understandings of organizational phenomena (Boje, 2008; Czarniawska, 1997; Rhodes & Brown, 2005), studying organizational strategy (Barry & Elmes, 1997; Boje, 2008), understanding organizational change (Brown, Humphreys, & Gurney, 2005; Brown, Gabriel, & Gherardi, 2009), and documenting sensemaking (Boje, 2008; Gabriel, 2000). Because narratives are implicated in sensemaking under conditions of uncertainty, they are also relevant to the organizing of practical actions (Fenton & Langley, 2011). Narratives and discourses are indicators of meaning that have been co-constructed by participants in collective practical activities and within organizations (Gergen, 1994, 2009a,

2009b). The earlier discussion of learning theories suggests an additional reason to attend to narrative content—such content may preserve salient aspects of collective experience in ways that may enhance learning for others in organizations.

From the perspective of narrative theory, empirical features of practice—the conversations, human actions, and relations that are meaningfully configured—may be recharacterized as "enacted narratives" (MacIntyre, 2007, p. 211); as asserted by MacIntyre (2007), "stories are lived before they are told" (p. 212). This observation is based on the common human experience of understanding situations through a narrative structure that we impose on otherwise confusing and obscure situations involving potentially unconnected actions (Polkinghorne, 1988; Ricoeur, 1984). As further observed by MacIntyre:

> We identify a particular action only by invoking two kinds of context, implicitly if not explicitly. We place the agent's intentions, I have suggested, in causal and temporal order with reference to their role in his or her history; and we also place them with reference to their role in the history of the setting or settings to which they belong. . . . Narrative history of a certain kind turns out to be the basic and essential genre for the characterization of human actions. (p. 208)

Extending this point to activities in *practice*, such activities are not only intelligible and have meaning against the backdrop of the ongoing patterns of meaningful interactions and orders constituting *practice*; such activities have meaning because a *practice* has a narrative history and enacts the narrative structures of ongoing stories.

Although human action occurs and is understood only as being responsive to one or more ongoing narrative histories, human experience, and a human life over time, strives toward achieving a meaningful narrative unity (MacIntyre, 2007; Polkinghorne, 1988). Narratives involving changing situations will exhibit not only new events, but changing plots as narrators strive to integrate as new experience and unify developing narrative histories without the benefit of a story ending (Polkinghorne, 1988, p. 69). In social and organizational settings—and in

practice—these narratives are also co-authored. These observations from narrative theory confirm that *practice* and activities of inquiry and organizing are likely to have narrative structures.

In a broad sense, narrative methods connect directly with the care-related activities of professionals in the human sciences who "use narrative explanations to understand why the people they work with behave the way they do" (Polkinghorne, 1988, p. x). The work of such professionals illustrates how situated studies of human activities that they conduct may be more broadly connected to developing narratives of participants in a *practice* situation. Borrowing from and paraphrasing Geertz's (1973) description of the role of an ethnographer, a researcher interested in *practice* interactions, practical understandings, and meaning will write down social discourse, thus inscribing a particular account of preserved or recovered experience that may be consulted later (p. 19). While this account may include analysis and commentary, it will also constitute a narrative history of the situation. Importantly, and consistent with preserving the perspectives of participants, the narratives that are constructed in such a study will not just try to "see things from the actor's point of view," which Geertz unfavorably characterized as "long-distance mind reading" (p. 14). Because a social science researcher deals with "materials that are already in story form" rather than merely creating storied syntheses of "isolated fragments of past actions" (Polkinghorne, 1988, p. 69), the researcher might be better thought of as engaged in a process of co-authorship with the participants who share their developing stories (c.f., MacIntyre, 2007). A co-author does not merely record raw facts or events; rather a narrative study of experience would seek to be a good account of the meaning of the underlying stories that are being co-constructed by the actors in the situation (Geertz, 1973).

Narratives are further useful because they have descriptive power and reach. Dyer and Wilkins (1991) emphasized the importance of rich, qualitative descriptions of contexts and phenomena available through narratives as the factor that allows connections to be made across situations. Qualitative data from narratives permit the description of phenomena so thoroughly "that others have little difficulty seeing the same phenomena in their own experience and research" including the "dynamics of the phenomena" (p. 617). Further, the stories captured in narrative research of an interesting situation may illustrate "new relationships, new orientations, or new phenomena" (p. 617), matters of direct interest in change-related research including research of organizing activities.

The application of narrative methods is also justified in the study of interesting social situations because interviews and other empirical data are likely to contain narrative elements. At a basic level, a qualitative research study may reveal the use of grand narratives (Boje, 2001), stories reflecting organizational and individual identities (e.g., Brown et al., 2005; Czarniawska, 1997) or stories told that are reflective of organizational culture or folklore (Gabriel, 2000). As will be discussed in the methodology chapter, well-conducted interviews provide a further opportunity for the production of narrative content that may not rise to the level of fully-developed stories. The objectives of interviews in dynamic situations, however, are not limited to obtaining information about what has happened and obtaining participant analyses and commentary about events. At the heart of the concern of such interview is understanding how meaningful patterns of actions occurred in response to the changing situation. Such meaning may be carried in the stories and narrative content obtained through the dialogue between interviewer and interviewees captured by in-depth interviews.

Narrative linking. As suggested by the preceding discussion, a qualitative research study of *practice* as a dynamic configuration of relations and activities invites the use of narrative methods because narrative organization, stories, and narrative content are being co-constructed at multiple levels of consideration. The following section will focus the general discussion of narratives on the particular needs of studies of *practice* and explore narrative linking and the connections made through narrative linking as offering a performative, narrative-based data collection and analytic approach.

Certain of the studies of professionals reviewed earlier included narrative-related phenomena. As examples, such studies evaluated the conflicts between change-oriented efforts and ongoing practice narratives and larger discourses about professional roles and identities (e.g., Checkland et al., 2008; Huby et al., 2008) and the significance of organizational rhetoric about change as a factor in a change process (Hoff, 2003). These studies represent the use of well-formed narratives within organizational settings as analytic tools to understand change oriented activities. But inquiries of *practice* should not be limited just to considering organizational and professional narratives and rhetoric because well-rehearsed discourses do not fully capture the potential of narrative content to shed light on the meaning and significance of ongoing activities in *practice*.

As a further example of an approach that would not have fully accommodated my research interests in the present study, Gabriel (2000) has proposed to study fully-formed stories told in organizations for the purposes of learning about both organizations and storytelling as an organizational phenomena. Gabriel's focus on stories with entertainment values serves his particular purposes well, but the narrative elements of potential interest in change studies are substantially broader. Actions reflect enacted narratives that need not be reduced to fully formed

stories (MacIntyre, 2007; Polkinghorne, 1988; Ricoeur, 1984). Also, organizing activities in practice may generate changing content of narratives and future possibilities that emerge as organizing proceeds as distinguished from particular stories that are retold in an organizational setting. The key point is that the unpredictability and contingency of future outcomes means that, to some degree, a completed story of a changing *practice* situation cannot be told. Further, studies should be open to recognize the non-story—the loss of meaning of historic narratives and traditions that might occur as a consequence of unpredictability or the inaction itself that may result from a failure to grasp the meaningful possibilities presented by ongoing narratives and traditions (MacIntyre, 2007).

The foregoing discussion suggests that the present study of HSIR organizing should adopt narrative perspectives that are not limited to grand narratives, organizational rhetoric, or fully-formed stories. The following paragraphs propose a broader approach based on narrative linking and the connections made through narrative organization of life as key ways of understanding *practice* and organizing processes occurring under conditions of uncertainty.

Bruner (1986, pp. 11-13), a psychologist, has usefully contrasted a "paradigmatic or logico-scientific mode" (p. 12) of thinking from a "narrative mode" (p. 13). The paradigmatic mode employs categories and concepts as well as analysis in a search for generalizable and empirically verifiable truth. In contrast, Bruner has described the narrative mode as employing stories, drama, and "believable (though not necessarily 'true') historical accounts" (p. 13) to explore "human and human-like intention and action and the vicissitudes and consequences that mark their course" (p. 13). For purposes of this performative study of organizing in *practice*, I prefer to adjust Bruner's terminology by referring to the narrative mode of linking rather than

thinking.[33] Narrative linking puts experience and events in their particular time and place (rather than generalizing from it), promotes detailed lifelikeness (rather than truth claims), and answers the question of "how we come to endow experience with meaning" (as distinguished from how truth might be discovered). Rather than seeking to verify "how things are" in the world, narrative linking explores connections in terms of "how things might be or might have been" (Bruner, 2002, p. 101) and how things might become. As framed by Rouse (1987, 1996), the concern of narratives moves away from explaining what is the case to explaining what matters about the situation and the implications of the situation for future possibilities.

Narrative linking may be particularly instructive in social science and cultural research because narratives make particular connections to human experience that are not dependent upon theory, logic, or the particular thoughts or intentions of individuals. These narrative-based connections are illustrated by the following narrative features:

- Narratives describe action and explore connections between actions and actors (Ricoeur, 1984; Polkinghorne, 1988).

- Narratives are emplotted in ways that may suggest intentionality, connect potentially isolated actions and outcomes into meaningful wholes, and help to promote understanding of, and even "explain" actions at some level (Czarniawska, 1999, p. 17; Polkinghorne, 1988; Ricoeur, 1984).

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[33] Both scientific thinking and narrative thinking identified by Bruner (1986) create explanatory connections, although of very different types. The phrase narrative linking better communicates this functional role served by narrative content for purposes of a performative research study which is sensitized to look for narrative connections among features of a developing *practice* situation. Further, the phrase narrative thinking does not fully acknowledge the cultural and collective foundations in meaning reflected and created by narrative content, also an important focus of this research study.

- Plots use symbolic resources (Ricoeur, 1984), connect action with historical and cultural contexts and traditions (Bruner, 1990; MacIntyre, 2007), help to reconcile extraordinary or deviant actions with the culturally expected (Bruner, 1990), and address the inherent unpredictability that pervades social life (MacIntyre, 2007).

- Narrative linking also captures the temporality of human actions including identifying key events, recalling the sequencing of particular actions, and establishing the time-based significance of relationships. Importantly, narratives address an anticipated future, typically by suggesting the goals of human actions (Polkinghorne, 1988), but also by suggesting possible futures and alternative actions (Bruner, 1986, 1990; MacIntyre, 2007).

- Narratives also call for accountability in many respects, including the responsiveness to others and the plots of ongoing and interlocking narrative histories, and achieving a unity of traditions and practices with identity and what it means to live a good life (MacIntyre, 2007). Narrative accountability thus provides a direct link between action and ethics; narratives are "rich in anticipations of an ethical nature" and create "an imaginary space for thought experiments in which moral judgment operates in a hypothetical mode" (Ricoeur, 1992, p. 170). Through narrative accountability, actions are not only placed in historical context but become consequential for future action, communicating meaning (Riessman, 2008, p. 3) and constituting and preserving *practices* and traditions (MacIntyre, 2007).

The foregoing narrative connections—connections among actors and actions, plots and explanations, symbolic resources and culture, temporality, history and future possibilities, and accountability—combine in life to constitute the narrative-based meaning and significance in

life. The details of experience are organized by narratives reflecting these characteristics so as to evidence the meaning and significance of actions and events (Bruner, 1990; Polkinghorne, 1988). The narrative organization of meaning and life appears even when human action is driven by practical reasoning, because "even the actions we plan using such reasoning are integrated, finally, through narrative into a complex of many actions" to achieve a meaningful, narrative unity (Polkinghorne, 1988, p. 68).

Narrative connections. As an alternative to the more narrow conception of story (Gabriel, 2000), I am adopting the broader conception of narrative linking and its elements introduced earlier in this section to provide the backbone of the narrative data collection and analytic methods to be used in the study of *practice* and organizing. Consistent with the earlier discussion, narrative linking will not limit inquiry to fully-formed stories and will attend to a broader set of potential narrative connections that are created and evidenced in social settings. I am lumping these potential narrative connections for descriptive purposes into the following, conceptually overlapping categories:

- narrative interactions, which involve attending to the connections presented by interactions of actors, actions, and the material aspects of the setting;

- plots*,* which involve following the meaning-based connections among events and a larger whole and including inferences of purpose, direction, causality and other connections with explanatory effect;

- time, which involves understanding the significance of the time-based connections between actions and events and also includes the connections among historical events, ongoing stories being enacted, and future possibilities;

- symbolism, which connects to rituals, rules, norms, and systems of meaning that allow for the readability of action; and

- narrative accountability, which explores the connections among ongoing actions, narratives, and cultural, historical, and ethical norms.

- Also consistent with the earlier discussion of narrative linking, various narrative connections can be expected to create changing narrative meaning and significance as the actors and situations strive toward narrative unity, even though a completed story may not yet be told (MacIntyre, 2007).

As the following discussion will demonstrate, a focus on processes of narrative linking and identified narrative connections is also likely to inform the meaning and significance of actions within *practice* and reveal the dynamics resources of *practice* described earlier.

Narrative interactions. Narrative interactions reflect the features of human action; human action, as distinguished from physical activity, implicates goal directedness and motives, and becomes understandable in the context of specific settings, which have constraining and enabling features, other agents, and the forms and outcomes of interactions (Polkinghorne, 1988; Ricoeur, 1984). Human action, in contrast to mere physical activity, may be interrogated to reveal the "who?", "what?", "where?", "why?", "how?", and "with, against, or to whom?" of such action in a particular situation (Polkinghorne, 1988, p. 144; Ricoeur, 1984, p. 55). This questioning may help to establish the changing structure of practice activities, shifting power alignments, and the details and consequences of significant human and material interactions occurring in the situation. In these respects, narrative interactions could reveal the practical understandings, activity patterns, changing arrangements, and effects of interactions and alignments that are aspects of a changing *practice* organization (Schatzki, 1996, 2001) and

consequences of dynamic influences within *practice* (Rouse, 1987, 1996). Although most of the actions and events that are the topics of stories have some basis in fact, stories told are not necessarily accurate or complete. In fact, the partial perspectives of agents are expected to produce different accounts of what might be assumed to be the same experience (Gabriel, 2000). Thus, the phrase "narrative interactions" is intended to suggest that the accuracy of reports should not be the exclusive objective of social or *practice* inquiry. The significance of actions and events in told stories is not marked by truth claims, but by the light the stories shine on organizational culture, power relations, and the meaning of experience (Gabriel, 2000). The category of narrative interactions thus incorporates Gabriel's distinction regarding told stories as reflecting "facts-as-experience" rather than "facts-as-information" (p. 27). The concern of attending in empirical research to narrative accounts involving interactions is to ascertain the meaning and significance of interactive experiences in changing situations, what might be called narrative meaning and significance, rather than to obtain mere information about, or to verify truth claims concerning, past events.

     Plots. Narratives contain more than mere chronicles documenting the sequences of events; rather narratives weave events together into meaningful wholes (Polkinghorne, 1988; Ricoeur, 1984). Action is undertaken with a plotted or themed understanding of the significance of certain events for such ongoing action and the anticipated pattern of actions necessary to create such coherent, meaningful wholes (Polkinghorne, 1988; Ricoeur, 1984). Ricoeur (1984) has conceived of a narrative plot as constituting an essential grasping together of acts and other heterogeneous factors—a "com-prehension" creating temporal unity and cohesion (pp. 64-70). Because plots are expressions of meaning, plots may be questioned in research contexts—"the appropriate question to ask of them is what the events have meant to someone" (Polkinghorne,

1988, p. 160). In addition to expressing meaning, the plotting of events also is frequently

structured to offer explanation by selectively reconstructing a pattern of events that suggests why

an outcome has occurred (Polkinghorne, 1988). In this respect, explanatory narrative may seek

to establish a cause of an event without offering such cause as a generalizable feature of the

world (Polkinghorne, 1988). This explanatory grasping together of acts and situated factors

directly informs an understanding of what has mattered and still matters in ongoing *practice*

activities, and what has made sense and is important to the current situation. In these respects,

plots convey essential practical knowledge and capabilities of significance, in the sense proposed

by Rouse (1996), to the participants in the *practice* situation who act consistently with plotted

explanatory connections (pp. 166-178). Because these participants enact plots from the position

of narrators in middle of their stories, the patterns of responsive actions of these participants

incorporate a fully temporal narrative structure grounded in their grasped-together understanding

of the significance of the past, the present responsiveness of action, and possible future

outcomes. Such action is reflective of such plotted understandings—"Our projecting ourselves

ahead, by taking over the situation we already find ourselves in, by presently acting, is an

understanding both enacted and displayed in the action itself" (p. 163). These observations

suggest that attending to the plotting of actions and events may be central to ascertaining the

understanding of the participants in changing *practice* situations and the narrative coherence,

meaning, and significance of those actions and events.

Symbolism. The meaning of actions is publicly available because such actions link to

"socially established structures of meaning" (Geertz, 1973, p. 10) that constitute culture. Such

action is capable of being narrated "because it is always already articulated by signs, rules and

norms" (Ricoeur, 1984, p. 57). Ricoeur (1984) emphasized that the "symbolic mediation" of

action exists at the level of practical understanding, even before articulated in processes of speaking and writing about action (p. 57). In this respect, "symbolism is not in the mind, not a psychological operation destined to guide action, but a meaning incorporated into action and decipherable from it by other actors in the social interplay" (p. 57). To understand an act is to situate the act "within the whole set of conventions, beliefs, and institutions that make up the symbolic framework of a culture" (p. 58). Even before the articulation of a narrative, and perhaps as an essential precondition to such articulation, this cultural system provides the "descriptive context" (p. 58) for practical action and also confers on it "an initial readability" (p. 58). These same symbolic resources provide essential linkages to the rules, norms, evaluative systems, and ethical prescriptions of a culture, which also constitute essential resources for the description and readability of actions and construction of narratives of action. These symbolic resources are also essential to the dynamic understanding of *practice*, including the readability of organizing activities, and the emerging significance and meaning of a changing *practice* situation.

Time. The temporal aspects of narratives make them especially relevant to research concerning *practice* from a performative and dynamic perspective. Narratives do not just offer retrospective explanation, but also address the implications of past events for future action. Although lives are lived and understood within the frames of ongoing historic narratives, what will happen in the future is never certain or predicable (MacIntyre, 2007). New occurrences and discoveries must be incorporated into plot lines of these histories through a process of narrative revision (Polkinghorne, 1988; Rouse, 1996). All narratives retroactively assess and communicate the significance of events occurring in the past based the subsequent results of those actions (Polkinghorne, 1988; Rouse, 1996). Over time, the significance of particular

actions occurring in the past may change, the meaning of a situation might also shift; also, and of particular interest to studies of *practice*, the perception of future possibilities may also change (MacIntyre, 2007). As noted by Bruner (2002), "through narrative, we construct, reconstruct and in some ways reinvent yesterday and tomorrow" (p. 93). This persistent reconstruction and reinvention of future possibilities and alternative courses of action will not be unconstrained or free from unpredictability, but will occur (or not occur) in directions that are both offered and bounded by our ongoing individual and social narratives (McIntyre, 2007). Because such narratives and future possibilities are subject to reconstruction under conditions of unpredictability and change, the tracking of changing narratives connections may provide insights into the dynamics of *practice* transformation.

Narrative accountability and narrative unity. The narrative feature of accountability, substantially built on the suggestions of MacIntyre (2007), is concerned with the responsiveness of actions to others engaged in relational interactions, to multiple, ongoing historical narratives, and to norms and cultural traditions. At the most basic level, our actions including our conversations are expected to respond intelligibly to ongoing patterns of actions. This responsiveness occurs in the settings of ongoing social practices and cultural expectations, power alignments, and knowledge networks. In addition, we undertake actions to be responsive to persistently reconstructed and potentially conflicting narratives, encompassing patterns of meaning. In order to account, we render narratives that connect our actions in ways that meet the multiple and potentially conflicting requirements of responsiveness. The working out of conflicting demands for responsiveness may present narratives reflective of *practice* dynamics and transformation.

Narratives not only present accounts of responsiveness but also invite the evaluation of actions and the character of actors. Ethical and moral concerns lie at the heart of the narrative accountability. Actions and the responsiveness of those actions are publicly available for evaluation based on cultural norms and ethical values (Polkinghorne, 1988). Thus, in addition to communicating meaning, narratives also establish the framework by which actions are determined to be "good or bad, better or worse" (p. 144) or subject to "approbation or reprobation . . . as a function of a hierarchy of values for which goodness and wickedness are the poles" (Ricoeur, 1984, p. 59). MacIntyre (2007) has characterized narrative unity in terms of a "narrative quest" (p. 219) to understand and utilize ethical virtues that sustain relationships, *practices*, and traditions. Importantly, his position does not imply that *practices* and traditions will continue without change. Due to the inherent unpredictability of life, the continuation of *practices* in changed circumstances may cause particular actions to become non-responsive and unintelligible (MacIntyre, 2007). Therefore, the sustaining of *practices*, traditions, and institutions "will be partly, but in a centrally important way, constituted by a continuous argument" (MacIntyre, 2007, p. 222) about what the practice, tradition, or institution should become. Narrative accountability therefore can be expected to evidence "continuities of conflict" (p. 222) that are essential for the renewal of *practices*, traditions, and institutions implicated by ongoing narratives of action, and a continuing drive to reconcile those conflicts through narrative unity.

Reading and narrative interpretation. So how do these narrative features operate as narrative resources available to participants in *practice*? As introduced in the first chapter, actions have the same narrative structure as texts and are available to be followed by reading (Ricoeur, 1981). This observation is not merely pertinent to developing the practice study

methodology. Professionals engaged in *practice* follow and make sense of the actions of others by reading those actions. Thus, before any "outside" interpretation of action through reading can occur, interactions in *practice* already reflect the interpretative competence of reading envisioned by Ricoeur. Similarly, the interpretative narrative arc (Ricoeur, 1981) also presented in the first chapter is not merely a vehicle for researcher interpretation; participants in *practice* create new meaning by making connections among diverse features, possibilities, and other cultural resources in *practice* situations. This art of constructing coherence out of unrelated pieces involves an iterative movement from isolated features of a situation to establish a holistic understanding envisioned by Ricoeur; this creative process—an iterative grasping-together-of-pieces-to-construct-a-coherent-whole—is the process that underlies problem solving, scientific discovery, creating a poem, or inventing a machine (Polanyi, 1966, p. 44). As particularly noted by Ricoeur, this iterative process has a special orientation to the future—such a process reaches holistic understanding about how past and present features may be configured into a holistic coherence in light of where the action may be headed in the future. These ongoing interpretative activities of participants in *practice* are meaningful without the addition of external theoretical or conceptual resources (Fine, 1996; Rouse, 1987, 1996) and should be understood in the first instance in light of the interpretations of those participants reflected in their collective actions. These interpretations have a narrative logic and reflect the narrative connections described in this section of the literature review.

The preceding discussion demonstrates that the interpretative reading of actions occurs within direct interactions; Ricoeur (1981) emphasized, however, that reading allows the work of a text or pattern of action to be freed from the subjective intentions of writers and actors and the features of specific situations. At one level, a reader may come to understand that a discourse or

action may have implications for other situations. In this respect, performances and stories within organizations may act as narrative resources with the power to enhance understanding of new discoveries and their implications.

But at a deeper level, Ricoeur (1981) believed that publicly available works of discourse and action hold the potential to allow a reader to recognize "the horizon of a world towards which a work directs itself" (p. 179). This function of reading extends the purpose of practical interpretative activities from "understanding the other to understanding the world of his work" (pp. 177-178). Reading allows readers to enjoy enlarged horizons of possibilities by understanding themselves within those disclosed worlds of work others, rather than just in projections of existing beliefs and work patterns. In this respect, readers imaginatively narrate and create the future contexts for their own activities (pp. 180-181). This creative process involves practical action driven by narrative features including "emergent meaning" and "a language which preserves and expresses its creative power in specific contexts" (p. 180). The relationship of narrative construction to the project of creating better worlds for human action was described by Ricoeur in terms of poetry:

> Why should we draw new meanings from our language if we have nothing new to say, no new world to project? The creations of language would be devoid of sense unless they served the general project of letting new worlds emerge by means of poetry . . . (Ricouer, 1981, p. 181)

Reading for broader implications. This final section of the literature review provides a bridge between the theoretical literature reviewed earlier and the practice study methodology for this study of HSIR organizing described in third chapter. The prior sections of the literature review have organized discussions of theoretical literature and empirical studies pertinent to *practice* around the themes of cultural, dynamic, and narrative resources available to professionals in *practice*. As noted earlier, professionals in *practice* are already engaged in

practical interpretations about what is going on and how to move forward through a practical competence that involves reading and following actions; they follow actions using narrative resources, come to practical understandings about how significant features of their circumstances hinder or facilitate their desired outcomes through cultural and dynamic resources. But reading as presented by Ricoeur (1981) also opens the door for an outsider—someone not involved in the ongoing interactions of *practice*—to read ongoing actions for their implications for completely different situations. Reading of a *practice* situation by outsiders may take different forms and may occur for different purposes. I will use this dissertation to explore how particular forms of reading may allow the narrative resources evident in HSIR organizing activities to have implications for other diverse *practice* situations.

As the researcher of HSIR organizing, I am in a position to make such a reading of the organizing of HSIR. In part, this reading is reflected in the narrative connections I have reported—the events, decisions, inquiries, and other matters described in the fourth chapter. But my position as a researcher also allows me to read the organizing of HSIR for an additional purpose—to produce an interpretative account that comments on the implications of HSIR organizing activities for other situations and that allows such activities to be positioned within the conceptual framework of *practice* developed for this study. I have included that account in the fifth chapter. This reading is less concerned with storylines about what happened and more concerned with narrative trajectories—what does all this mean and to what other situations does this story refer? In this interpretative reading, the cultural, dynamic, and narrative resources available to HSIR organizers become conceptual tools that may help to frame the larger implications for *practice* and other situations.

In turn, my dissertation may also be read by other outsiders. Such readers may assess the storylines and the cultural, dynamic, and narrative resources identified in the fourth chapter for relevance in light of the features of their respective situations and may further evaluate their situations in light of the conceptual tools and implications offered in the fifth chapter. Through the competence of reading envisioned by Ricoeur (1981) and by deploying narrative resources, this dissertation and other accounts of practice hold the potential to inform other professionals interested in transforming aspects of *practice* in significant ways.

Developing a Practice Study Methodology

A methodology explores the relationship between types of knowledge and the ways and procedures for obtaining knowledge (Bentz & Shapiro, 1998, p. 171). A methodology can be defined by certain essential principles that drive the entire research process (Blumer, 1969). Following Blumer, a methodology should reflect a worldview and conceptual tools that are appropriate for the features of the empirical world under study. As noted by Blumer (1969), "one can see the empirical world only through some scheme or image of it" (p. 24). Further, the conceptual tools and methodological principles must inform the posing of relevant questions and the collecting of relevant data. Data collection should be set by the problems under study and not be driven by predetermined data collection methods (p. 25). Third, a methodology should identify an interpretative process to establish the connections among relevant data and the implications of the study for other situations (pp. 25-26). Blumer's (1969) principal criticism of typical social science methods lie in "their almost universal failure to face the task of outlining the principles of how schemes, problems, data, connections, concepts and interpretations are to be constructed *in the light of the nature of the empirical world under study*" (p. 27).

In the Introduction, I presented the key features of a practice study methodology that is appropriate for the investigation of collective professional performances and issues that arise in *practice*. The expansive conception of *practice* also presented in the Introduction and further explored in the literature review provides a conceptual description of the situated complex of relations engaged by professionals who are inquiring and organizing and therefore provides a framework for understanding and conducting research in their empirical world. As also described in the literature review, theoretical literatures and empirical studies have suggested the cultural, dynamic, and narrative resources available to those participants as essential features of a

practice world; those literatures and studies also offer conceptual tools that may be deployed to enhance an understanding of a particular empirical world of *practice*. In this chapter, I will establish the principles of the practice study methodology and address how the conceptual tools and those principles were used in shaping the features of an exploratory study of the organizing of the Heath Systems Innovation and Research (HSIR) Program. Key features of the study to be addressed in this chapter include establishing ontological and epistemological assumptions, identifying research problems, describing principal data collection and interview strategies, creating procedures for data analysis and interpretation, and identifying relations among the significant features of the situation identified through data collection. I will also describe the interpretative process I employed in creating the "Building a Learning Health System" narrative and the narrative analysis in the following two chapters. It is important to acknowledge that although this study was designed and implemented under the principles of the practice study methodology, the study was exploratory and oriented to the basic empirical conditions presented in the organizing of HSIR (Blumer, 1969). More specifically, I conducted my study of HSIR organizing by giving priority to the basic empirical conditions presented in the HSIR research situation and allowed that situation and those problems presented by the participants to drive the specifics of the conceptual framework, data collection, and interpretative steps of the inquiry described in this dissertation.

Exploring the Empirical World of Practice

As presented in the first two chapters, *practice* encompasses an entire, dynamic complex of relations for collective professional action and provides professionals with a setting and cultural, dynamic, and narrative resources to make sense of their activities. Health Sciences at the University of Utah encompass numerous *practice* complexes constructed around the

performing of teaching, research, and clinical care. My *practice*-focused research of the

organizing of the Health Systems Innovation and Research Program explored what became

meaningful and significant in the empirical world of the HSIR organizers as they operated within

these *practice* complexes and created the foundations of a developing *practice* centered on health

systems innovation and research. As suggested in the literature review, inquiry and organizing in

practice are exercises of culture building. The work of HSIR organizers is particularly

interesting because the ultimate success of the program will be partially but crucially defined by

the culture-changing impact on existing clinical, research, and teaching *practices* at the

University of Utah over time. The exploratory study of the empirical worlds of *practice* engaged

by these initial organizing efforts has developed from particular ontological and epistemological

positions and also requires attention to particular research design principles that will be explored

in the following sections.

      Ontological and epistemological considerations. The selection of methods for any

study is inseparably linked to the conceptions of existence (ontology) and knowledge

(epistemology) sought to be understood and portrayed. In the human sciences, the last fifty years

have been marked by an ongoing debate framed in terms of "positivist" and "constructivist"

cultures of inquiry (Bentz & Shapiro, 1998).[34] In particular, this debate has focused on whether

human existence and the characteristics of phenomena that we recognize have realities that are

independent from our social construction of such realities (Berger & Luckmann, 1967). From

the positivist perspective, the world consists of facts to be experimentally discovered and

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[34] I am using the term "constructivist" loosely to refer to the cultures of inquiry based in human experience, culture, history, and critical theory and their respective interpretative methods (Bentz & Shapiro, 1998). These interpretative approaches provide alternative worldviews and methods to the positivist scientific research tradition marked by controlled experimental methods.

verified, matched with generalizable theory, and applied to achieve predictive success and control (Bentz & Shapiro, 1998). From the constructivist perspective, any such "facts" are not pure facts of the world but are created from activities, categories, and methods that are infused with theory and informed by historical practices (Bentz & Shapiro, 1998; Berger & Luckmann, 1967).[35] Although positivist and constructivist research are grounded in very different world views, the approaches share a common endeavor—developing knowledge in the form of bodies of interrelated concepts and "facts" that can be assessed from a viewpoint outside of the contexts where such knowledge is evident; in turn, such knowledge is applied to reach interpretative judgments about phenomena and explanatory theories about the world (Rouse, 1996). Although the ability of human sciences to develop relatively stable and generally applicable bodies of knowledge is highly contested (Flyvbjerg, 2001), a constructivist researcher nevertheless typically seeks to invoke or develop theory for interpretive purposes by applying established methodological approaches recognized by the researcher's discipline.[36] A constructivist perspective also shares in common with positivism the view that knowledge is representational

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[35] Even scientific discoveries involve historically and socially developed concepts and "facts." As noted by Kuhn (1970), before knowledge and research paradigms are established, research focuses on gathering a wide range of data that might be pertinent to an inquiry, but the fundamental role of predetermined theory is still present in such data collection and analysis:

> No natural history can be interpreted in the absence of at least some implicit body of intertwined theoretical and methodological belief that permits selection, evaluation, and criticism. If that body of belief is not already implicit in the collection of facts—in which case more than "mere facts" are at hand—it must be externally supplied, perhaps by a current metaphysic, by another science, or by personal or historical accident. (Kuhn, 1970, pp. 16-17)

[36] Blumer (1969) was particularly critical of social science research driven by theoretical models, hypotheses, and defined research protocols (pp. 32-33). These theory-driven features of typical research become "the governing agents in dealing with the empirical social world, forcing research to serve their character and bending the empirical world to their premises" (p. 33).

of some underlying reality and therefore must be assessed and reported from a detached perspective (Rouse, 1996).

The practice study methodology is grounded in very different premises. My research of HSIR organizing from a *practice* stance started with the relations and actions of HSIR organizers, who are insiders and hardly detached. The research sought to document and understand their developing practical understandings, local knowing, and meaningful perspectives (Haraway, 1991), which are situated within a specific but changing context. The understandings, knowing, and meaning they obtained in *practice* (Rouse, 1987, 1996) were socially constructed and relational creations (Gergen, 2009a, 2009b). These understandings reflected a local knowing-how (Rouse, 1987) that is exhibited by situationally responsive and meaningful action. If aspects of their situation were uncertain, then what became known to them was whatever they discovered through practical inquiry and organizing that facilitated their further action oriented toward desirable possibilities they identified. In figuring out what to do, HSIR professionals developed understandings and acted knowledgeably without articulating or applying theoretical knowledge claims. What becomes locally known in practice is demonstrated by its useful incorporation into further practical actions (Rouse, 1987), reframing of problems, and move-testing experiments (Schön, 1987). In turn, local discoveries and knowing may be incorporated into the ongoing webs of activities, cultural habits, and matters of significance that form the background for meaningful action (Geertz, 1973; Rorty, 1991). The essential purpose of the practice study methodology was to capture and explore these locally situated understandings and matters of meaning and significance to the participants in inquiry and organizing efforts rather than to develop concepts or representations about them.

The study of *practice* could be framed in a way that makes ontological claims—that the reality of professional life unfolds within and is governed by the meanings and relations in *practice*.[37] The exploratory study of actions and understandings arising in *practice* need not fully adopt a "social" ontology, but must acknowledge the historical, cultural, and situated social influences that are in play in the actions, understandings, local knowing, and collective meaning that is evident in the study site. Because research consistent with practice study principles strives to reflect a within-*practice* stance, such research employs a strong form of "practice as a perspective" rather than "practice as a philosophy" (Orlikowski, 2010) approach. Such a perspective features the practical actions and understandings of participants while allowing me to develop and account for my interpretative position as a reader of those actions and understandings. Research focused on understanding *practice* therefore presents an opportunity to adopt epistemological principles that favor forms of situated knowing and collective meaning and that de-emphasize external positioning and detachment. These principles will be expressed in the following section of this chapter.

Methodological design principles. As suggested by Blumer (1969) a methodology should establish the principles for the design of research appropriate for the empirical world. How should a research study of *practice* be designed to feature local and practical knowing, collective meaning, and changes in matters of significance? In general, a study of practice should incorporate some of the features of what Rouse (1996, 2002) has described as cultural

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[37] Schatzki (2002) has made such an ontological claim for social practices. Because human agents are engaged in any number of such practices, all of human reality can be said to flow from a mesh of practice/order bundles—a "site of the social" (p. xi). He concluded that "human coexistence thus transpires as and amid an elaborate, constantly evolving nexus of arranged things and organized activities" (p. xi).

studies of science (1996) and feminist studies of science (2002). As described by Rouse (1996), culture studies are grounded in history and are culturally and politically aware. Because the focus of such studies is on how collective meaning is formed and maintained, such studies downplay the significance of disciplinary perspectives, global theories of reality, and representational uses of language. This result is achieved by "explor[ing] the heterogeneous interconnections among words, images, actions, and other events and things instead of reducing meaning to univocal representations of absent things" (1996, p. 232). The focus of these studies is on the future rather than representing the past; this focus allows consideration of how "new manifestations of things open up new possibilities" (p. 232) and how possibilities might be transformed. Because *practice* is a cultural creation, *practice* "must be understood through a detailed examination of the resources on which their articulation draws, the situations to which they respond, and the ways they transform those situations and have an impact on others" (p. 239).

The key features of feminist studies (Rouse, 2002) include the conception of "'knowing' as concretely situated and as more interactive than representational" (Rouse, 2002, p. 147), an emphasis on "a reflective and self-critical participation in the assessment of particular scientific projects and knowledge claims" (p. 152), and a "futural and transformative" orientation (p. 153). Feminist studies also have explored "objectivity" in terms of documenting relational accountability—holding "knowers accountable for what they do" and determining "to whom and to what they need to be held accountable" (p. 156) within "complex relations among knowers" (p. 155).

The foregoing discussion proposes that practice studies, and in particular studies exploring practical inquiry, local knowing, and collective meaning and significance, should

endeavor to create a reasonably detailed, accountable, and critically aware exploration of an entire *practice* situation and to document collective actions and changes in practical knowing, collective meaning, and matters of significance. In order to achieve these purposes, particular research methods should meet an unusual combination of design principles. These principles, reflected in the following subsection headings, operating together, are intended to assure that the cultural, dynamic, and narrative resources available to research participants are identified and preserved while accounting for any effects I might have as an investigator.

Use conceptual tools to sensitize data collection and analysis. The cultural, dynamic, and narrative resources available to participants in *practice* are practical and cultural resources they may use to develop new actions and understandings. In one sense, these resources presented in a research setting represent tangible demonstrations of the conceptual tools introduced in this literature review. But a practice study should not emphasize the representational use of data to demonstrate theory since such an approach might limit the research to predetermined researcher concerns. Rather, available conceptual tools should only be used expansively to sensitize data collection and analysis to empirical matters of potential significance to the research; they should not be used to impose limiting conceptual schemes on a research situations involving *practice* (Fine, 1996; Rouse, 1996). Imported assumptions and theories may actually tend to limit rather than enhance the exploration of issues arising in *practice* situations by narrowing attention from the full scope of activities that are presented; in contrast, and using Fine's (1996) terms, a focus on *practice*-embedded activities and issues reflects a "natural ontological attitude" that is "'California natural': no additives please" (p. 10).

Focus on matters that are meaningful and significant to participants in practice. Changing conditions may create uncertainty, render certain ongoing activities incoherent or

nonresponsive to the situation, and require the development of new directions and activities. Available directions and new possibilities are presented in the performances and changing features of a *practice* situation and have a narrative structure: Possible actions gain significance (in the sense of making sense) to the extent that they can be understood as fitting into ongoing *practice* narratives and may also gain significance (in the sense of importance) in light of the narrative consequences of completing such actions (Rouse, 1996). Further, possible actions become important to the extent that such actions help to develop or reconstruct ongoing narratives. Identifying significance in light of developing narratives contrasts with research that defines significance in the terms of interests of disciplinary communities, shared beliefs, or theoretical positions. Evaluating significance in terms of such established interests, beliefs, and positions is a process that prioritizes confirmation and consistency, while a narrative approach opens the evaluation of significance to emerging discoveries and different possibilities. Rouse (1996) emphasized the particularly critical consequence to studies of scientific research of adopting a narrative perspective for significance rather than a view of significance based in communities, beliefs, or existing theories (pp. 166-178): Significance in a narrative sense identifies as significant a discovery that "transforms a community's prior commitments or changes what counts as the relevant scientific community" (p. 170).

>>>*Attend to situated activities, practical inquiries, local discoveries, and practical understandings*. The reading of a *practice* situation by an outsider would be enhanced by identifying the features of a situation, including actions, discoveries, and effects of completed performances, that are acting as cultural resources in creating new collective meaning and significance, having a dynamic influence on performances, or making narrative connections among such features. As noted above, the conceptual discussions of cultural, dynamic, and

narrative resources in *practice* situations serves to sensitize data collection and analysis to the features of research situations that are operating as resources to participants. Those features are the ones identified by participants as having collective meaning and significance to their collective ongoing inquiry and organizing activities. Research that attends to the practical inquiries and interpretations of participants in local situations emphasizes the locally significant activities of those participants rather than concepts in the mind of a researcher.

Attend to action and knowing oriented toward future possibilities. Activities of professionals in practice are focused on constructing the future (Rouse, 2002). Collective meaning and significance arise not only in light of ongoing activities, but in anticipation of future discoveries and achievements. Professional life is marked by a future-oriented, progressive quest for excellence, self-knowledge, and practical outcomes, a quest that has a narrative form (MacIntyre, 2007, pp. 215-219). In pursuing this quest, professionals become accountable to each other and to their future-oriented commitments (Rouse, 2002). This future-oriented accountability of professionals to each other creates the basis for objectivity in the research of *practice*. As asserted by Rouse (2002), objective research about human activities, whether classified as scientific, professional, or another variety, must seek to reveal a type of knowing demonstrated by participants in *practice*. The knowing of those participants in a changing situation will show how new discoveries are taken up, rendered meaningful, and made useful in further inquiry and activities by those participants in the situation, and how what they count as "knowing" changes over time.

Attend to dynamic influences and effects. Taking a dynamic approach to research is broadly consistent with the developing body of work reviewed earlier employing process-related perspectives that focus on the flow and confluence of relations, activities, and the dynamics of

the situation (Gergen, 2010). Such a dynamic approach will allow the scope and changing aspects of *practice* to be determined empirically rather than by imposing a predetermined label on *practice*—what a named *practice* was, is, and is becoming, and which dynamic features of *practice* are operative should be determined empirically by what has been placed at issue in the continuation of *practice*, the nature and boundaries of *practice*-related interactions, and the range of meaningful activities and possibilities pursued by agents in the *practice* situation.

Empirical research of changing *practice* situations could be enhanced by describing ongoing actions by an extravagant use of gerunds (Weick, 1979). A more dynamic variation of Schatzki's (1996, 2002) concepts of practice, practice organization*,* and social orders presented earlier would use the terms practicing, organizing, and ordering, terms consistent with practicing as a social and organizational becoming (Tsoukas & Chia, 2002). Such ongoing organizing could include producing changing understandings, revising rules, and restructuring projects and tasks; engaging in process-oriented tasks of questioning, inquiring, exploring, experimenting, and learning;[38] crafting, reconstructing, and performing stories in the making; and developing new possibilities and emerging insights about future actions. Similarly, ongoing ordering could involve the arranging, relating, positioning, meaning making, and identity making that occurs in social and organizational life and would also include contesting, enforcing of norm, pursuing and resolving conflicts, enacting and spanning boundaries, and promoting discourse that is essential to defining what is at issue and at stake in continuing or transforming such ongoing practicing.

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[38] These process-related terms are task-focused forms of words, reflecting ongoing processes and tasks (e.g., *learning*) as distinguished from completed processes and achievements (e.g., *knowing*) (Ryle, 1949).

This more dynamic approach to the language of practicing, organizing, and ordering sensitizes

data collection to the persistent flow of practicing.

  Attend to issues and conflicts. Research attention to conflicting and contested aspects of

practice narratives may also be particularly important to the understanding of how *practice*

changes in significant respects. Conflicts reflected in narratives are likely to identify the

intersection of competing forces or working practices and locate the resistances and

accommodations that are in play in changing situations. The use of narratives to explore

conflicts and other contested aspects of *practice* will also likely shed light on what matters and is

at stake in the continuation or transformation of *practice*. What *practice* is becoming is likely to

be played out in conflicts of interpretation over its continuing enactment (Rouse, 1996, p. 141).

Such interpretations are further likely to be played out in a field of contested narratives seeking

to develop continuing coherence among the various participants engaged in a changing *practice*

setting (p. 165). The separate narratives of participants involved together in a shared situation

will reflect the personal, partial, and different stories of those participants and reveal conflicts

and contests of potential significance in transforming their shared *practice*. These narratives

must, in the first instance, be captured in a way that is consistent with Rouse's view that they be

of the situation and not about it (Rouse, 1996).[39] Such narratives are likely to highlight the

essential features of *practice* that have changed, but should also capture the significance of

particular dynamics to any transformative *practice* outcomes as viewed from the personal and

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[39] The capturing of matters that are at stake in the continuation or change of *practices* through the partial and conflicting stories of participants must be contrasted with the creation of a narrative about conflict by a researcher; as noted by Rouse (1996), there is no position outside of practice where a single author perspective exists and from which such a narrative about conflicts could be properly constructed.

potentially conflicting perspectives of participants. In these ways, narratives of the situation may provide the inside view of what is important in transforming *practice* and transformative dynamics, while downplaying matters that are not identified as significant from the perspectives of participants.

Conduct data collection to preserve details and differences. Empirical studies undertaken to develop or confirm theory persistently put meaning-generating contexts into the background by neutralizing situational differences, treating uniqueness as error, and moving toward common explanatory concepts removed from the contexts that provide meaning (Stake, 1995, p. 39). Yet the details about matters bearing collective meaning and significance— including the cultural, dynamic, and narrative resources available to participants in a situation— present potentially important keys to unlock a fresh understanding of the situation and participants' actions and responses. How might such resources be accessed in empirical settings and preserved for further reading?

Data collection procedures including interviews create their own contexts, each involving a relationship and interchange between a researcher and a research participant. An interview deserves particular attention. The interchange between interviewer and interviewee results in the dialogic construction of interview transcripts and embedded content (Riessman, 2008). The interview itself presents a particular obstacle to the preservation of cultural, dynamic and narrative resources of the *practice* situation as experienced by an interview respondent because the interview creates a communication process that exists outside of the context of the respondent's *practice* experience. Mishler (1986) has articulated the goal of interview procedures in light of this obstacle:

> The varied and complex procedures that constitute the core methodology of interview
> research are directed primarily to the task of making sense of what respondents say when

the everyday sources of mutual understanding have been eliminated by the research situation itself" (p. 3).

In addition to merely making sense of interview responses, the interview process itself should be crafted and conducted to encourage the developing of situational details relating to matters of significance so that interviews will also provide insights into the underlying changing situation itself, the experiences of respondents in that situation, and the developing of cultural, dynamic, and narrative resources. These details are likely to be reflected in narrative connections and stories in construction. An open-ended narrative interview is a starting point; such an interview may allow for the presentation of the contextual features of situations and actions, which are features of ongoing personal and situational narratives (MacIntyre, 2007). But the interview process must also address a number of particular challenges that may arise in interview contexts including a researcher power differential, the need to structure interviews to promote the development of narrative content rather than analytic responses, adopting a conversational approach to encourage extended responses, and employing transcription and coding practices that account for researcher involvement and feature narrative rather than analytic content. These challenges are explored in the following paragraphs.

Neutralize power relations in data collection. This problem of the interview context is compounded by the power differential that exists between the respective roles of interviewer and interviewee and the presumed needs of the interviewer to obtain specific information. As noted by Mishler (1986), the standard interview schedule presents to an interviewee "a 'world' [that] is abstract, fragmented, precategorized, standardized, divorced from personal and local contexts of relevance, and with its meanings defined and controlled by researchers" (p. 120). Typical research exacerbates the power differential by relying on researcher interpretations of the meaning of answers. In Mishler's view, such procedures not only create technical issues with

respect to preserving context but raise issues of "sociological and political significance" (p. 122).

Mishler has proposed to redefine interview research through new roles of the interviewee as

informant, research collaborator, learner, and advocate for personally-held views. Each role shift

is reinforced by changes in techniques that increase the control and responsibility of the

interviewee in the process of constructing and reporting the interview, including interviewee

decision making regarding disclosure or confidentiality, transcript review, planning of next

phases of research, the practical application of interview content, and the use of interviews to

encourage learning and reflection by interviewees.

Preserve narrative thinking and narrative connections in data collection. A change in

the power relations of interviews alone will not be sufficient to preserve narrative thinking and

narrative connections that are embedded in the underlying situation unless the dialogic exchange

also promotes the telling of stories, narrative linking of matters, and the reporting of narrative

connections. Interviews constitute exchanges that search for responsiveness, indications of

understanding, and the co-construction of meaning (Mishler, 1986). The pacing of the dialogic

interactions, responses of interviewers suggesting interviewer understanding, and even silence

can influence the direction of an interview (Mishler, 1986). A tightly structured interview

schedule that permits short answers may establish a pattern of interaction that communicates

information about a situation without offering situational details, stories, and other narrative

content that might be important to explain meaningful connections among events or persons in

the situation. A more open-ended interview invites the presentation of stories, explanatory

connections, and expressions of meaning that will permit an in-depth exploration of the

experiences of participants by allowing the conversational development of interview direction

and content, and by allowing the conversation to explore the matters identified as important to the interviewee (Paget, 1983).

While narrative content frequently will arise in both structured and unstructured interview contexts if not truncated by interviewer intervention (Mishler, 1986), certain forms of questions are more likely to promote narrative thinking and the development of storied accounts of experience in interviews. The earlier discussion about narrative thinking established the fundamental distinction between narrative content, which establishes connections and builds holistic, thematic, and believable explanations, and logical analysis, which is more concerned with separating out concepts and inviting causal explanations that apply or are generalizable to theory. Questions that encourage exploring "events," "sequences," or temporal connections are more likely to invite narrative explanation, while a question that seeks causal predicates to "outcomes" are more likely to trigger deductive or conceptual responses. Open-ended questions directed to interviewee experience invite interviewee participation in the framing of what is important about a question and control over the direction of the response (Mishler, 1986; Riessman, 2008); such questions also create greater opportunity for the collection of detailed accounts of experiences rather than just short answers or general information (Riessman, 2008). In turn, detailed responses to these open questions allow interpretation that is tightly linked to phenomena of interest, the underlying experience of an interviewee, and the interviewee's determinations of what is significant. As an example of one approach, Paget (1983) has proposed an in-depth interviewing technique that focuses on topics of mutual interest and that uses searching questions that are not pre-programmed to explore such topics. In order to produce detailed responses, such open-ended questions about experience must be "specific, spontaneously constructed, and contextually sensitive" (p. 73); such questions would not produce

the same type of response if they sought abstractions, conclusions, or generalizations. Although not specifically worded or fully sequenced, the entire in-depth interview process is constructed around topics to systematically explore questions of interest.

Be flexible, conversational, and responsive in interviews. Obtaining detailed accounts from interviewees requires an understanding that is worked out between interviewer and interviewee during the interview process. The principal objective of such a research interview is to encourage the interviewee to talk, converting the focus of the interviewer to that of a responsive conversational partner who probes the content of the responses (Paget, 1983); in this conversation "answers continually inform the evolving conversation" (p. 78). Further, understanding with respect to the meaning of questions, the sufficiency of responses, the acceptability to the interviewer of detailed or truncated responses are all established in the interaction between interviewer and interviewee who are striving to construct mutual understandings for purposes of the interview event (Mishler, 1986). No schedule of interview questions can fully resolve ambiguities or anticipate variances in responses that are likely to occur in an interview, so interviewers must be prepared to engage in a conversation rather than a stimulus and response exchange (Riessman, 2008). Additional detail in responses might be suggested by follow-up questions that explore particular events ("what happened"), key moments ("turning points" or "shifts in cognition, emotion, and action"), and significance ("meanings that might connect several stories") (Riessman, 2008, pp. 24-25). As noted by Mishler (1986), interviewee responses that are permitted to reflect detail may be thought of as creating a story. In this respect conducting multiple interviews provides an opportunity to attend to "how interviewees connect their responses into a sustained account" and the "problems and possibilities of interviewing" (Mishler, 1986, p. 67) that become visible from that point of view.

The dynamics of interview settings suggest that any one interview should be structured with open-ended questions first so as to establish expectations for detailed and storied responses. Later portions of interviews could be progressively structured to gather the more specific insights about issues raised in earlier responses, situated dynamics, narrative connections, and, where applicable, matters that might become significant based on a comparison of storied elements across multiple interviews.

Be accountable as a researcher. The final design principle for practice studies involves researcher sensitivity and accountability for the influences of researcher in the data collection, analysis, and the presentation of results. As noted above, no research is undertaken and no methodology is developed without the influence of theoretical perspectives. Further, researcher presence in the setting of a study and engagement in interview contexts hold the potential to impact participants in the situation and shape research outcomes (Mishler, 1986; Riessman, 2008). Because studies of *practice* focus on local activities and the knowledge and understandings of participants in those situations, such studies must also question the availability of an external researcher perspective from which to meaningfully assess practice-based activities (Haraway, 1991; Rouse, 2002). These factors together suggest that studies of *practice* should critically assess and account for the role and impact of the researcher in such studies.

Decisions relating to interview questions, transcription of interview texts, the coding or other treatment of interview data and the consolidation of data viewed as "relevant" may materially change the meaning of interview responses and bring into question the very idea that "data" is independent and merely collected as distinguished from constructed (Alvesson, 2011; Mishler, 1986; Riessman, 2008). The process of designing, conducting, transcribing, and producing an interview constructs a text, which is subject to critique, analysis, deconstructive

reflection, and re-construction (Alvesson, 2011) as well as interpretation (Alvesson, 2011; Alvesson & Sköldberg, 2009; Geertz, 1973). This construction occurs in dialogic engagement between interviewer and interviewee (Riessman, 2008). In practice studies, that interaction should be designed and conducted to enhance the understanding of interviewees about the purposes of the research and the sense of empowerment they have in the process (Mishler, 1986). The interaction also should be designed to obtain the perspectives and stories and narrative-based thinking of the interviewees (Mishler, 1986; Paget, 1983) concerning change-related activities and processes.

The role of a researcher in a study of *practice* is to follow the cultural exchanges in meaning and significance. This is an interpretative activity that preserves and restates what was meant by words or actions (Geertz, 1973).[40] A similar interpretative preservation and reconstruction of meaning occurs in studies seeking to uncover a "trace" of local understandings that anticipate a possible discovery (Rheinberger, 1997), the solving of a mystery reflected in a gap between empirical data and theory (Alvesson & Karreman, 2011), or the tracing of consistency in a "conceptual biography" (Fine, 1996). In studies of *practice*, a researcher can be expected to start with publicly-accessible social action and narratives and ascertainable states of discoveries and move back in social discourse and through narratives to recover the traces of past interactions and relations and other matters that were meaningful and significant. In the end, the practice studies researcher must become accountable for a study that reflects an interpretative

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[40] Geertz (1973) noted that thick ethnographic descriptions at least involves interpreting "the flow of social discourse" and the interpreting involved in "trying to rescue the 'said' of such discourse from its perishing occasions and fix it in perusable terms" (p. 20). The "said" of discourse is not simply what was spoken but what was meant in the speaking (p. 19).

narrative history of matters of collective meaning and significance and the anticipated

possibilities opened up for future action by such a narrative history (Ricoeur, 1981).

Employing Methodological Design Principles in an Exploratory Study of HSIR Organizing

The first section of this chapter established epistemological assumptions and

methodological principles for studies of the empirical worlds of *practice*. These principles were

offered in part to assure that data collection and analysis would be sensitized to the cultural,

dynamic, and narrative resources that are likely to be presented in studies of practice. Blumer

(1969, p. 25) envisioned that a research methodology would address how questions would be

asked and inquiry problems developed in an empirical world that is being investigated and how

relevant data would be identified and collected. These features of research design will be

addressed in this section with reference to the specific features of the study of HSIR organizing.

Level of analysis. As noted earlier, practice studies are intended to be multi-level

explorations of matters of collective interest. In an organizational setting such as Health

Sciences at the University of Utah, such matters of interest will involve individual, group,

professional, organizational, and larger macro-level concerns. Within that general multi-level

framework, the level of analysis and appropriate data collection procedures will be driven by the

particular issues of collective interest that arise in the particular research situation. In practice

studies, the level of collective analysis will be driven by the level of collective commitments to

what is at stake in collective action and the issues recognized collectively as impacting those

commitments.

The organizing of the Health Systems Innovation and Research Program involved

implementing an organizational strategy that can be stated in largely organizational and system

terms—creating a new program in a new department in order to facilitate cross-departmental

collaboration for the purpose of generating innovation and research that will impact and change health systems more generally. While the organizing activities of HSIR organizers involved relational interactions among individuals and in group settings, the purposes of the HSIR program and the scope of its anticipated organizational and health systems impacts were much larger in scale. I anticipated and confirmed in the early stages of my exploratory research that the initial actions of HSIR organizers would have larger scale focus. Further, although the organizational structures were clear, I anticipated that the study would present issues and uncertainties concerning how to achieve the larger organizational purposes and anticipated organizational and system impacts. This focus on the larger scale of HSIR purposes and issues in turn centered my data collection on interviews with leaders within Health Sciences and those with particular perspectives on existing Health Sciences initiatives and the larger issues involving innovation, research, and health system transformation. Even though specific instances of professional-level issues were presented in the data, this study retained a focus on the larger-scale impacts and problems worked on during the initial organizing of the HSIR program.

Exploratory research involving practical inquiry and organizing. Obtaining access to study the ongoing efforts of Health Systems Innovation and Research Program organizers presented a special research opportunity. Of course, the focus of this program, generating innovation and documenting research pertinent to health systems transformation, addresses a critical public policy concern. But HSIR organizing also presented an opportunity to track the practical inquiry and organizing activities of professionals over a relatively short time as they operated outside of areas of their technical competence and without a playbook in getting the program off the ground. Their work was necessarily exploratory as they engaged with

established organizational and professional boundaries and generated new relationships and

interactions. Therefore, I conceived of this HSIR study as entirely exploratory: Consistent with

the design principles, I allowed interview participants to set the agenda for this research based on

the matters they felt were important to talk about and act on, and I used other written materials

and events as other sources of information about what was important. This approach allowed me

to flexibly explore key questions and issues that arose from the data.[41] The flexibility to explore

pertinent aspects of the situation as the situation developed allowed me to keep my preconceived

notions in check and develop positioning more closely aligned with the participants and their

issues (Blumer, 1969). Using an exploratory approach was essential to fulfill the methodological

design principles by promoting a situated understanding of the practical activities occurring in

the situation, limiting the importing of potentially distorting conceptual positions, and ultimately

achieving my accountability to research participants and the possibilities of their work they came

to understand.

The HSIR study was exploratory in two respects: Adapting the terminology Stake (1995)

developed for case studies, the research proposed is both an intrinsic study because the

organizing of HSIR is a unique situation of interest; in addition, this study is an instrumental

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[41] Blumer (1969), in urging the conduct of research that is firmly focused on obtaining knowledge of group and social life, has emphasized the importance of adopting flexible, exploratory inquiry. He specifically contrasted exploratory approach with research seeking to confirm theory or replicate technically-driven procedures:

> Exploration is by definition a flexible procedure in which the scholar shifts from one to another line of inquiry, adopts new points of observation as his study progresses, moves in new directions previously unthought of, and changes his recognition of what are relevant data as he acquires more information and better understanding. (p. 40)

study which seeks to explore the design principles of the practice study methodology to the organizing of a new program in a complex organizational setting. Stake's (1995) concept of an intrinsic case prioritizes an interest in learning about the situation itself, "not because by studying it we learn about other cases or about some general problem" (p. 3). Stake would recognize that studies may also serve instrumental purposes by generating more generalized understandings. In this study, those more generalized understandings were developed by offering evaluation criteria for practice studies in light of the design principles of the practice study methodology in light of its design principles and by offering some implications of the study for leadership and change practice and theory.

Because the HSIR study was exploratory, study procedures were not pre-programmed with researcher-determined research questions, propositions, case logics, and relations to theory, as is typically prescribed for case-related research (Yin, 2009). In order to be consistent with the methodological design principles and the requirement to give priority to the perspectives of participants, the issues explored in this study were the issues presented by interview participants.[42] Other sources of data, including available documents, notes from meetings, presentation materials, and historic documents, were used to supplement the materials obtained from interviews. In these respects, the HSIR study had a broad purpose similar to Stake's (1995) description of a case study, where a researcher works "to understand how the actors, the people being studied, see things" (p. 12) and "tries to preserve the multiple realities, the different and

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[42] Using Stake's (1995) terminology, these issues are *emic* issues that arise in the research situation and that develop and change over time. In contrast, the *etic*, or researcher-imposed, issues that arose in connection with the HSIR study involved the application of the practice study design principles and the narrative-based interpretative methods described in this chapter.

even conflicting views of what is happening" (p. 12). The understandings and positions of the

participants about what was significant and what was at issue in the organizing of the HSIR

program was the central focus of my inquiry (Rouse, 1996), and those understandings shifted

over time. Thus, the boundaries of HSIR organizing and the issues that were raised by study

participants changed during the research process;[43] in response, the research design, procedures,

and emerging conceptual framework of the study also were adjusted to accommodate the shifting

perspectives of participants.[44]

Progressive developing of research interests. Consistent with the idea that exploratory

study design reflects a progressive engagement with emerging issues (Stake, 1995), the features

of an exploratory study is as much a function of how the story of the research process emerges in

conjunction with events in the world under study than what a researcher has predetermined. The

following paragraphs outline the process I followed in putting together the study of HSIR

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[43] The HSIR study differs from a case study in at least two key respects. The case study begins with the concept that the research situation consists of a bounded set of phenomena or a system (as distinguished from mere processes) that constitutes a "case" (Stake, 1995, p. 2; Yin, 2009, p. 18), even though the boundaries between the case and context may be unclear (Yin, 2009, p. 18). The case is then explored in light of research questions, theoretical perspectives, and convergent data collection strategies identified by the researcher (p. 18). A practice study starts from a different premise—that a *practice* is situationally and temporally unbounded, and driven by issues identified by participants in *practice*. A practice study differs from a case study in its purpose to explore what is significant and what matters in the situation from the differing and potentially conflicting realities and perspectives of participants rather than describing or explaining what a predetermined case is about (Rouse, 1987, 1996).

[44] Blumer (1969) emphasized the importance of retaining procedural and conceptual flexibility in ethnographic studies:

> Exploratory study stands in contrast to the prescribed and circumscribed procedure demanded by current scientific protocol. . . . The purpose of exploratory investigation is to move toward a clearer understanding of how one's problem is to be posed, to learn what are the appropriate data, to develop ideas of what are significant lines of relations, and to evolve one's conceptual tools in the light of what one is learning about the area of life. (p. 40)

organizing.[45] As this process rolled out, the particular issues that were addressed by HSIR

organizers were refined and became the focus of my research study.

- My dissertation proposal included the key elements of the practice study

    methodology including the framework for sensitizing research for dynamic and

    narrative features of situations and interview methods designed to invoke participant

    narratives rather than their analysis. At the time my proposal was approved, I did not

    have a research site but had commenced efforts to locate professionals who were

    undergoing some changes to their collective practices that were not merely technical

    in nature. In addition to documenting how professionals acted collectively to deal

    with situations outside of their expertise, I was interested in exploring a situation

    involving practice as described earlier and the operation of the principles and methods

    of the practice study methodology.

- Access to my HSIR research project was facilitated by Dr. Thomas Miller, the Chief

    Medical Officer of the University of Utah Hospitals and Clinics, and Dr. Rachel Hess,

    the director of the HSIR program. Dr. Miller considered my broader interests in

    exploring aspects of changing clinical practices and introduced me to Dr. Hess, who

    had just arrived in Salt Lake City. In turn, Dr. Hess facilitated my introduction to

    other key interview participants. When it comes to research involving professionals

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[45] These paragraphs describe my research as a developmental process and are offered as a partial accounting of my influence on the research process. The practice study methodology accounts for the "intertwined theoretical and methodological belief" (Kuhn, 1970, pp. 16-17) I imported to this research that influenced my data collection and evaluation. This exploratory research study was also influenced by what I was learning about the emerging issues that HSIR organizers faced as they sought to get the HSIR program off the ground and how my perceptions of those issues changed as I learned from the different perspectives participants offered.

in *practice*, it is critical to identify sponsors who will facilitate access to willing study participants. In my case, timing of access was crucial to the study and could not have been planned—this particular study likely would not have occurred if my introduction to Dr. Miller had not occurred in the time frame when Dr. Hess was arriving on campus, and if the organizing of HSIR had already been well underway.

- I framed the HSIR study from the outset as an inquiry about the practical inquiry and organizing efforts of the HSIR organizers. Because I anticipated that practical inquiry would involve participants who would be acting on issues and problems in tangible ways (Dewey, 1938) and organizing would involve establishing new relations, certain general matters of interest to me as a researcher were presented from the outset. These interests included understanding how this new program would fit within and relate to the existing organizational, academic, and clinical structures, and how cooperative relationships and activities would be developed over time. In addition, the very name of the program raised questions about how the program would facilitate innovations and research pertinent to transforming health systems. These interests were refined over time in light of the specific issues pursued and the actions taken by HSIR stakeholders. I also had research interests driven by the practice study methodology, including whether the interview approach would generate narrative content and data concerning dynamic influences in *practice*.

- In order to identify the possible scope of the study, I initially met informally with Dr. Hess and Kim Bowman, the HSIR Manager, to ascertain what was going on with respect to HSIR and their views about the key issues and people that might be involved in a study of HSIR organizing. I identified a number of potential interview

participants from these initial conversations and also from my participation with

HSIR organizers in a series of "get to know us" meetings hosted by Dr. Hess, Kim

Bowman, and Lauren Kirwan, the HSIR project manager, in May and June of 2014

and called *BLD*—short for breakfast, lunch, and dinner. Potential issues of

significance to HSIR organizers were identified from these initial conversations, the

BLD events, documents relating to the creation of the HSIR program, an initial

interview of Dr. Hess in early June of 2014, and my participation in a two-day

conference on June 24-25, 2014 involving academic, clinical, and research leaders in

University of Utah Health Sciences titled "Building a Health System of the Future."

The particular issues and other matters of significance identified during this initial

data collection period are identified in "Building a Learning Health System."

- A second phase of data collection commenced in July of 2014, with initial interviews

  of Lauren Kirwan and Kim Bowman, a second interview of Dr. Hess, and interviews

  of other stakeholders. These interviews, and in some cases the people interviewed,

  were informed by earlier data collection efforts and the issues and other matters of

  significance previously identified. In the period from July through early November

  of 2014, I conducted 12 recorded and transcribed interviews and one additional

  interview that was not recorded at the request of the participant. I also attended a

  day-long HSIR planning session in early October. As also reflected in "Building a

  Learning Health System," these interviews and the HSIR planning session reflected

  the changing priorities and issues of the key HSIR organizers and provided a

  broadened and deepened understanding of the central issues that drove the creation of

  the HSIR program.

- A final phase of data collection occurred in late November of 2014 with additional interviews of Dr. Hess, Kim Bowman, and Lauren Kirwan and an interview of Dr. Vivian Lee, the leader of Health Sciences at the University of Utah and holder of the titles of Senior Vice President of University Health Sciences, Dean of the School of Medicine, and CEO of University of Utah Hospitals and Clinics. A few additional interviews and a focus group with HSIR organizers had been contemplated but could not be scheduled. Scheduling difficulties were compounded by the announcement on October 23, 2014 of a "Transforming Clinical Practice Initiative" by the Center for Medicare and Medicaid Innovation, which is part of the Centers for Medicare & Medicaid Services (CMS) within the United Stated Department of Health and Human Services (HHS). This $670 million initiative solicited proposals for funding of grants from $2 million to $50 million in an effort to "enable large scale transformation of thousands of clinician practices to deliver better care and result in better health outcomes at lower costs for Medicare, Medicaid, and Children's Health Insurance Program (CHIP) enrollees" (U.S. Department of Health and Human Services, 2014, p. 5). This initiative transformed what was at stake in the efforts of HSIR organizers in ways that could not have been envisioned by those organizers before the initiative was announced. I also attended the initial organizing meeting facilitated by HSIR organizers and involving approximately 40 people who would be involved in making an application for these funds. The initial indication of intent to apply was due on November 20, 2014 and the final applications were originally due on January 6, 2015.

- I also kept field notes of meetings and reviewed them from time to time in the shaping of data collection. These notes were inherently interpretative exercises—I

made notes of matters that I thought were significant and recorded those notes in terms that reflected both what was being discussed and what was important for me to remember. From time to time, I also created reflective summaries of what I thought was important in the research process and reviewed those notes in the preparation of the "Building and Learning Health System" narrative.

Interviews. The interview protocol, which I have included as Appendix A, consisted of a general framework of the matters to be explored, and the purposes of the inquiry (Yin, 2009). The interview protocol was designed with the following features:

- The protocol contemplated an initial discussion about my broad research interest in the organizing of the HSIR program and my desire to have the participant set the agenda and engage in a conversation.

- The protocol anticipated that the interview would be initiated by a very open-ended question about what was presently going on in relation to the HSIR program or their work involving health system innovation and research. Those questions varied depending on the extent of involvement of the interview participant in creating the HSIR program.

- Consistent with the principle of using conceptual tools to sensitize research, the interview protocol included questions designed to elicit comments about factors that might be meaningful and significant to participants or acting as dynamic resources.

- The questions also anticipated obtaining responses that might fill in the details of the past/present/future structure of narratives in anticipation of applying the interpretative approach captured in the narrative arc (Ricoeur, 1981) presented in the Introduction.

- The protocol contemplated that I would ask follow-up questions, but only after the basic story had been offered. In this way, questions that might be suggestive of analysis or matters of conceptual interest to me were not offered in a way that would interrupt the ongoing narratives contained within the interview account.

- The protocol also set out the general framework for subsequent interviews and focus groups.

Although the interview protocol contemplated that I might ask a lot of questions, in all interviews, just an initial question was all it took to get a robust conversation going on matters of interest to each of the interview participants.[46] I crafted most follow-up questions to clarify or obtain additional details about matters raised by participants in the course of their interview. This approach was consistent with the practice study design principles by attending to situated actions and issues and matters of concern to participants and by minimizing researcher influence. This attention to matters offered by participants created an interesting feature of my interaction with interview participants—many participants expressed an interest in assuring that what they were saying made sense to me. By way of contrast, in typical theory-driven interviews, participants are put in the position of trying to understand what the researcher is looking for and whether they are being responsive to researcher interests (Mishler, 1986). Because of my attention to matters presented by interview participants, I used the interview protocol as more of a check list to be sure I obtained some information about present activities and conditions,

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[46] I began each interview with a brief introduction about my interest in exploring the experiences of the participant with respect to the HSIR program or health systems innovation and research and my intention to have a conversation and to allow the interview participant to control the specific topics in the interview. This introduction, much abbreviated from the introductory comments contemplated by the protocol, was sufficient to create a conversational relationship with interview participants.

matters in the past that were pertinent to the discussion, what participants were anticipating for the future, and the features of the situation that were facilitating or hindering desired outcomes. Typically interview participants offered information about each of those areas of interest without being prompted by a specific question.

One of the essential purposes of the practice study design principles and the open-ended structuring of interviews was to encourage narrative content and indications of dynamic influences that were influencing the situation. Each interview contained some details that made narrative connections between past events, current issues or actions and future directions. Most interview participants also offered features of the situation that were hindering or facilitating possible outcomes and that could be framed within one of the categories of dynamic resources identified in the literature review.[47] These conclusions were especially pertinent to the central HSIR organizers who were persistently working across organizational and disciplinary boundaries to create new relationships and further the purposes of the HSIR program. A number of interviews also raised culture change as an issue of importance. While my study of practice was already attuned to matters of collective meaning and significance to some degree, I did not ask questions that were specifically focused on culture. Key references to culture and stories that emphasized the difficulty of establishing relationships across an apparent divide between clinical and academic cultures caused me to become more attuned to cultural factors and resources in my data analysis.

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[47] One interview caused me to reflect on the importance of spatial relations and position and include those factors as an additional category of dynamic influence in the final presentation of this dissertation. Thus, while the conceptual work I had done for my proposal allowed me to sensitize my data collection to dynamic features of the situation, I also allowed the data to modify and supplement that dynamic framework.

Interpreting and Analyzing the Data

Following Blumer's (1969) methodological framework, a methodology must also identify an interpretative process to establish the connections among relevant data and the implications of the study for other situations (pp. 25-26). As presented in the Introduction, the competence of reading and the *narrative arc* based on the work of Ricoeur (1981) provide the essential elements of a narrative-based interpretative framework. To briefly recap Ricoeur's observations about *reading*, completed actions as well as texts may be read to suggest future possibilities for a situation and also for implications in other contexts that are removed from the intentions of actors and writers and the specifics of their situations. This observation conforms to our common experience—we examine the fine points of stories for implications to our personal situations and review histories of projects as pertinent examples of practical actions that may be employed to address problems similar to those that engage us. As observed in the Introduction, reading requires attention to details and differences rather than just what may be common across situations and therefore does not prioritize generating or applying abstract concepts or theory.

In turn, reading allows a reader (whether a participant in *practice* or a researcher) to develop holistic interpretations of situations, which follows a past/present/future narrative structure represented by a narrative arc (Ricoeur, 1981). Also as presented in the Introduction and illustrated by Figure 1.3, a reader's interpretative understanding of a present situation may be enhanced by understanding the relations among historic influences presented in texts and completed action, including the features of situations identified as cultural, dynamic, and narrative resources; further, the reader's understanding of present *practice*-based resources may be deepened by considering their implications for the future and for different situations.

Holistic understanding
of implications and
future possibilities

Current holistic
understanding

Current action,
stories and
dynamics

Past action, stories
and dynamics

Figure 1.3. The *narrative arc* narrative-based interpretative method. This method
enhances current understanding of a situation through analysis of past factors
and the projection of future possibilities for the situation and for other situations.

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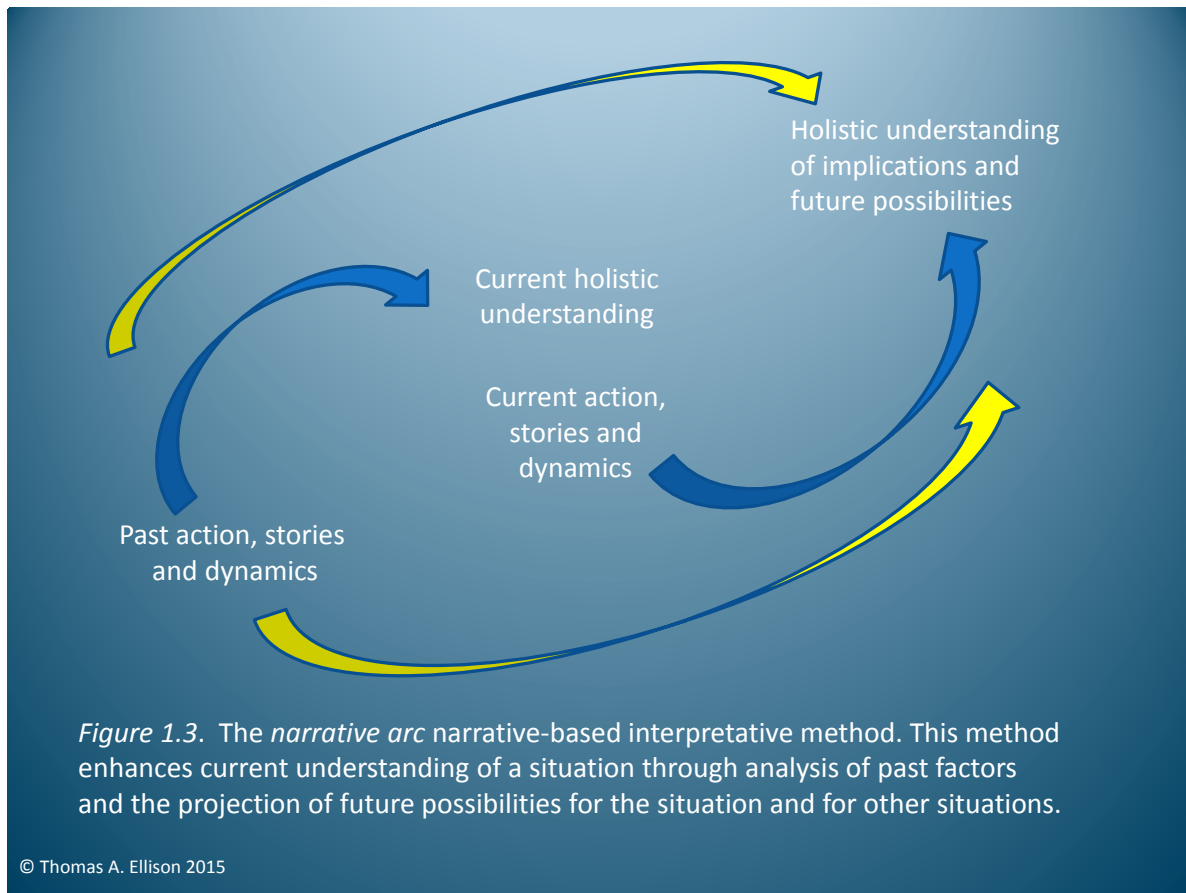
The narrative arc therefore requires the exercise of two very different additional

competencies—first, an analytic competency that involves identifying significant features of the

situation presented in available data and establishing the relations among those data, and second,

a creative competency that involves constructing holistic understanding of what is going on in

the present and envisioning its future possibilities and implications. The exercise of these

competencies are reflected in the interview accounts of HSIR organizers as they grapple with key

features and issues in their situations, build narrative understandings of their situations, and

envision the future contributions of their program to transforming health care systems. Their

stories have been woven together in the "Building and Learning Health System" narrative.

Also, I have applied this same narrative-based interpretative structure to identify key

features of HSIR organizing in light of the relations among factors presented in collected data

and describe their implications for the future and for other situations in the "Developing a Narrative Understanding of Practical Inquiry" chapter. This approach allowed me to develop an interpretative position while still honoring and preserving the essential features of texts, actions, and the potentially significant differences in understandings among participants reflected in their interview accounts. My reading of HSIR organizing for its implications for the future of the HSIR program, health systems innovation, and the transformation of *practice* more generally is also reflected in that chapter. My approaches to address these analytic and interpretative functions contemplated by the narrative arc are set forth in the following sections.

Handling interview data. The use of an open-ended interview format presented an opportunity for each participant to construct a coherent account about aspects of health systems innovation and research the participant recognized as meaningful and significant from a personal perspective. Each account had the potential to communicate overall themes and to provide explanatory details to make the points an interview participant recognized as significant. In order to account for the themes or topics presented in each interview, I created summaries of key interviews that segmented interview texts into series of exchanges. Each exchange consisted of a question and the following response or responses generally relating to the question. Because my questions were typically open-ended, some of the responses offered a number of points in addressing a particular topic. While some exchanges around particular topics were brief, the exchanges generally contained details about the topic—the cultural, dynamic, and narrative resources—that were offered to explain or exemplify the matter being discussed. These details, including key quotations, narrative connections, dynamic features of the situation, and other matters that seemed significant were added to the summaries for each identified exchange.

As an example of how the summaries were constructed and what they contained, the initial interview transcript of Dr. Hess contained 16 exchanges (including some making multiple points) that principally addressed topics in the following general categories: four exchanges about Dr. Hess' history and professional interests; two exchanges about the culture of Salt Lake City and the University of Utah as promoting innovation; six exchanges concerning health care delivery issues implicating research, knowledge, and innovation in general; seven exchanges with topics related to the HSIR program, its activities and potential, and initial questions and points of uncertainty; and four exchanges addressing organizational matters and institutional constraints within Health Sciences at the University of Utah. Certain narrative themes of the interview are revealed by categorizing interview exchanges—the interview contained parts of the narrative histories and ongoing stories of Dr. Hess, Health Sciences, the University, Salt Lake City, and health care delivery as those stories relate to the developing narrative of the HSIR program and its possibilities.

Further, the interviews contained more information than just general thematics, and the additional details of significance were also included on the interview summaries. To continue my example based on Dr. Hess' initial interview, all but two of the exchanges in that interview contained in added explanatory detail pertinent to the understanding of the points she presented. In general, the details she offered reflected the connections she made among features of the situation she identified and the purposes and potential of HSIR. As specific examples, her exchanges about the organizational constraints and innovative culture within Health Sciences were linked to specific HSIR issues and anticipated activities, while exchanges that started out talking about broader issues in health care delivery and research were ultimately used to explore the potential of the HSIR program to effect change in health care delivery by addressing such

issues. These examples taken from the initial interview of Dr. Hess reflect the past/present/future structure of a narrative—her narrative was principally focused on creating an understanding of the work required to organize the HSIR program and its future possibilities in relation to the details of narrative histories and ongoing stories she recounted.

In constructing an interview summary, I reviewed an interview account at two levels of detail. When first segregating the interview into exchanges, I conducted a general review to identify major topics and overall narrative themes. I also made note of key questions and the driving activities presented in the exchange. The purpose of this initial review of interviews was to assure that I preserved the essential narrative themes, storylines, topics, questions, and activities offered by each participant as significant to my inquiry. In a second and more extensive review, I summarized the details offered in each exchange, including the cultural, dynamic, and narrative resources offered in each exchange and the connections offered among these various details.

Creating a narrative of HSIR organizing. I used the overall narrative themes, topics, questions, and activities raised by the central HSIR organizers, Dr. Hess, Kim Bowman, and Lauren Kirwan, in their interviews to frame the storylines I later developed in "Building a Learning Health System." Because these particular interview accounts focused on the key organizing activities, the accounts covered similar topics pertinent to organizing but with different points of emphasis. Field notes also provided important details of key events attended by HSIR organizers and others, while providing very different perspectives of other participants about the topics under consideration at those meetings. Other interview accounts were less directly focused on the organizing activities of HSIR organizers and were used principally to fill in the details about historical and current factors that influenced HSIR organizing and many of

the issues and questions raised in the course of my study of the initial HSIR organizing efforts. [48]

The following chapter is presented as a narrative of organizing that developed over a seven

month period with a particular emphasis on the problems HSIR organizers sought work on and

the dynamic and cultural features of the situation they identified that influenced their efforts.

This narrative incorporates key features of the narrative arc (Ricoeur, 1981). The "Building a

Learning Health System" narrative includes the narrative connections made by interview

participants with the historical factors and the ongoing initiatives that were considered by HSIR

organizers as they developed holistic understanding about how to proceed with their organizing

efforts; further, the narrative of their decisions and actions reflects the connections among the

features of the situation, including dynamic and cultural factors, and their understandings about

the possibilities offered by anticipated organizing efforts. "Building a Learning Health System"

therefore demonstrates the narrative structure of practical actions and the multiple readings of a

complex situation by HSIR organizers anticipated by Ricoeur (1981).

Developing research interpretations through reading. As presented by Ricoeur

(1981), reading also opens the door for an outsider—someone not involved in the ongoing

interactions of *practice*—to read texts and ongoing actions for their implications for completely

different situations. Ricoeur (1981) offered reading and the narrative arc presented in the

Introduction as features of a possible human sciences methodology to be employed by

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[48] I had anticipated that other interviews would have reflected a deeper involvement with the organizing of the HSIR program than was apparent from most interview transcripts. While the interview protocol clearly identified my research interests as encompassing the organizing of HSIR, the open-ended nature of the actual questions allowed interview participants to talk about health systems innovation and research as issues from their respective clinical or research perspectives and from their perspectives as Health Sciences leaders with commitments to transform the health system.

researchers of social phenomena (pp. 218-221). Underlying his observation was his recognition that texts and actions are understandable in light of symbolic resources available to writers, actors, and readers. While Ricoeur did not explore the specifics of a methodology, he urged that such inquiry establish broader connections and correlations among resources with symbolic significance and their reference to perplexities, predicaments, and conflicts of social existence as well as deeper interpretations of the meaning of texts and actions for the future and other situations.

As noted earlier, professionals in *practice* are already engaged in practical interpretations about what is going on and how to move forward through a practical competence that involves reading and following action; they follow actions using narrative resources and develop practical understandings about how the features of their circumstances hinder or facilitate their desired outcomes through the cultural and dynamic resources that they recognize in their situations. The cultural, dynamic, and narrative resources available to professionals in *practice* identified in the literature review are also resources with symbolic significance that may be accessed by a researcher of social phenomena such as those arising in *practice*. In turn, the reading of a *practice* situation by an outsider may allow the reader to use symbolic resources in a deeper interpretation of meaning that may have implications for other diverse *practice* situations.

As the researcher of HSIR organizing, I was in a position to make such a reading of the organizing of HSIR for research purposes. In part, this reading is reflected in the narrative connections I have reported—the events, decisions, inquiries, and other matters described in the HSIR organizing narrative. But my position as a researcher also allowed me to read the organizing of HSIR for an additional purpose—to produce an interpretative account that comments on the implications of HSIR organizing activities for other situations and that allows

such activities to be positioned within the conceptual framework of *practice* developed for this study. I have included that account in the subsequent chapter. This reading is less concerned with storylines about what happened and more concerned with narrative trajectories—what does all this mean and to what other situations does this story refer? In this interpretative reading, the cultural, dynamic, and narrative resources available to HSIR organizers become conceptual tools that may help to frame the larger implications for *practice* and other situations.

As established by Blumer (1969), the essential work of analysis and interpretation is to establish the relations among the key features of a situation under study and explore their implications. Ricoeur's (1981) narrative-based interpretative method provides an appropriate framework for analysis and interpretation because the method provides both analytic and interpretative opportunities. The practice study methodology's focus on situated actions, dynamic, cultural, and narrative resources, and developing understandings from multiple perspectives identifies key features of the situation that may be explored with respect to their relations and significance; in turn, the method allows for the developing of holistic understandings of the research situation and its implications for the future and other situations.

In developing the narrative arc, Ricoeur expressly sought to avoid the traditional dichotomy between explanation—with its presumed grounding in objective analysis—and understanding—with its presumed grounding in subjective evaluations. Rather, he redefined each concept as a function of the other. As applied in my practice study of HSIR organizing, his integrated approach to explanation/understanding (Ricoeur, 2004) required that I test my interpretations of collective meaning (understanding) against an analysis of the relations (explanation) among features of the situation, including cultural, dynamic, and narrative resources; also, explanation/understanding required that I create interpretations of future

possibilities from a deeper analysis of the implications of those features of the situation. My

interpretative work based on Ricoeur's restatement of explanation/understanding is included in

"Developing a Narrative Understanding of Practical Inquiry" chapter.

Additional acts of interpretation that may be facilitated by employing Ricoeur's (1981)

narrative-based methods in the practice study methodology: My dissertation may also be read by

other outsiders, who may assess the storylines and the cultural, dynamic, and narrative resources

identified in "Building a Learning Health System" for relevance in light of their respective

situations. A reader in academic medicine might learn from the experiences of HSIR organizers

described in "Building a Learning Health System" and the issues they confronted. Other readers,

including professionals in disciplines other than medicine, may evaluate their situations in light

of the narrative analysis and implications I offer in subsequent chapters. Through the

competence of reading envisioned by Ricoeur (1981), this dissertation and other accounts of

practice that highlight practical inquiry and cultural, dynamic, and narrative resources hold the

potential to inform other professionals in a range of situations who are interested in transforming

aspects of *practice* in significant ways.

Building a Learning Health System

An idea is first of all an anticipation of something that may happen; it marks a *possibility*. . . . Because inquiry is a progressive determination of a problem and its potential solution, ideas differ in grade according to the stage of inquiry reached. At first, save in highly familiar matters, they are vague. (Dewey, 1938, pp. 109-110)

It is a commonplace that all research must start from a problem. . . . But how can one see a problem, any problem, let alone a good and original problem? For to see a problem is to see something that is hidden. It is to have an intimation of the coherence of hitherto not comprehended particulars. (Polanyi, 1966, p. 21)

The first [element of an experimental system] I call the research object, the scientific object or the "epistemic thing." They . . . constitute the objects of inquiry. As epistemic objects, they present themselves in a characteristic, irreducible vagueness. This vagueness is inevitable because, paradoxically, epistemic things embody what one does not yet know. (Rheinberger, 1997, p. 28)

This chapter presents a narrative of the initial organizing of the Health Systems

Innovation and Research Program (HSIR) within the University of Utah Health Sciences.

Perhaps organizing resembles simple event planning in familiar situations; organizing within the

context of an academic medical center, however, involves more than arranging known resources

and applying technical means to achieve clear objectives. Rather, such organizing is practical

inquiry that operates in the uncertain but very large space between theoretical prescriptions

offered to effect a large-scale health system transformation, on the one hand, and the very real

issues, gaps, and questions that impact the daily performances of health care professionals and

scientific researchers in their respective practices. The practical inquiry of HSIR organizers

sought to fill a part of that very large space by acting on new problems that arose and by

following the possibilities available from what they had discovered, however vaguely such

possibilities may have been presented. Collective practical inquiry is provisional rather than

planned: As noted by Schön (1987), "problem solving is part of a larger experiment in problem

setting" (p. 78), and its success must be evaluated in substantial part in the appreciation of the "unexpected problems and potentials that [earlier moves] have created" (p. 63).

I have endeavored to present a performative account of organizing—one anchored in what the health care professionals, and especially the central HSIR organizers, did, said, heard, saw, read, and reported in their interview accounts as they engaged in organizing new relations, interactions, and arrangements oriented toward achieving practical, collective outcomes. Whatever the theories of health system reform might prescribe, the realities of professional life will need to be addressed on terms understood by health care professionals and through performances to which they can relate as extensions of their professional practices. This account provides multiple perspectives on those realities.[49] I have constructed this narrative from multiple interviews of HSIR organizers and additional interviews of other leaders in University of Utah Health Care who were involved in creating the HSIR Program or who had a stake in its success. The account also reflects my observations from attending meetings as taken from my notes and from reviewing available pertinent documents. In order to account for my presence in this narrative, I will use footnotes and italicized text that account for my involvement in this story.

Are We Asking the Right Questions?

The room filled with an unfamiliar mix of clinicians, health sciences faculty, and science investigators, most meeting someone in the room for the first time. They gathered to hear about the new Health Systems Innovation and Research Program. The obligatory PowerPoint

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[49] Unless otherwise indicated, the source of any quotation is a transcribed interview that I personally conducted or the text of my field notes of a meeting I attended.

presented by Dr. Rachel Hess, HSIR's program director, offered a simple but complexly

challenging possibility linked to the phrase "health systems innovation and research"—"The

Right Care for Every Patient." Her assessment of the current status of health care was

unqualified: Care delivery in the United States is fragmented, marked by "gaps in data, gaps in

adoption, gaps in implementation," and (as an off-script comment) "gaps in care transitions." As

a consequence, health care in the United States produces gaps in outcomes—the highest age-

adjusted death rates and rates of death due to complications of pregnancy and delivery compared

to other industrialized countries. Dr. Hess observed, "We're not getting our money's worth."

How might these gaps be filled? Her presentation envisioned creating a rapid learning

health system where "research influences practice and practice influences research." HSIR

might play essential roles in creating such a system by incubating health services research ideas

and design, by facilitating the implementation and evaluation of quality improvements in care

delivery, and by catalyzing health system change by disseminating results of impactful research.

In turn, how might a research-based learning model represented by the words "ideas, design,

implement, evaluate, and disseminate" operate? The presentation suggested that new tools

would need to be deployed beyond traditional random controlled trial research—commonly

acknowledged to be the gold standard of medical research—to also focus on operations, quality

improvement work, developing new research methods, modeling, and simulation. Dr. Hess also

suggested that new collaborations and stakeholder relations would be required to generate new

outcomes, including measures of resources/costs, intermediate outcomes, and new patient-

centered outcomes.

This meeting, and each of the other "BLD" (short for "breakfast, lunch, and dinner")

sessions that followed in late May and early June of 2014, concluded with group discussion

sessions focused on two questions: "What could innovation and research within a learning health system encompass?" And "what can HSIR do to facilitate your success and your scholarship?" As I listened in on the various small group discussions, it appeared that the BLD participants shared many more issues and questions than concrete suggestions and answers.

"Does the U have a winning hand?" This key question, among many others, was asked at the University of Utah Health Care's 2014 conference entitled "Building a Health System of the Future."[50] The scope of considerations presented at this conference certainly provided a glimpse of the issues driving the transformation of health care delivery systems.

As suggested by one speaker, normal operating conditions in health services delivery are discontinuous and chaotic—too many people, too much to do, no one with the information, and no one who is accountable. These conditions result in gaps in quality, safety, and efficiency. For every broadly suggested gap in some aspect of care identified at the conference, participants offered many examples of specific issues to be addressed. Outpatient/inpatient transitions of care and communications within referral networks were repeatedly identified as persistent problems. The gaps and issues raised more basic questions posed by one commentator—"how do we learn what to do?" "What should we be trying to do?" The commentator noted that because theory does not prescribe what to do, health care professionals need to search for and develop "ideas that are fundamental and good" in the middle ground between merely learning from experience and learning about theory. In his view, such ideas will drive desired outcomes and

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[50] The question was posed by invited keynote speaker Dr. Steven H. Lipstein, President and Chief Executive officer of BJC HealthCare. I was present at this conference and the content of this section was taken from my notes of conference sessions.

efficiency with lower costs, at least so long as health care providers can find ways to assess and learn about what they are doing and not doing well.

According to Steven H. Lipstein, President and CEO of BJC Healthcare, winning health care systems in academic medicine will require new *machinery*, *politics*, and *culture*.[51] While the term *machinery* brings technology to mind, Lipstein was concerned about creating new arrangements of professionals, technology, and other resources to restructure health care delivery, such as forming integrated practice units, developing and implementing cost of care metrics, and delivering and documenting quality. This new machinery is active and productive not only by generating new information, but also by the grouping, linking, building, aligning, and reinforcing activities that occur in its creation and operations. As contemplated by another presenter, key activities would include organizing teams with operational responsibilities ("real teams"), measuring what matters to progress, moving forward on multiple fronts, and integrating capabilities and services. This new machinery of health systems will be designed to produce integrated care delivery, outcomes assessment across a range of new measures including those focused on patient experience and cost, service excellence, and value as ways of working toward solving some of the larger issues with health care services in the United States.

New machinery will be required to address the data issues that also surfaced at the conference. While speakers accepted the premise that data could be used to enhance the quality of care, comments suggested that data necessary to make patient decisions is not available in real time. Questions and comments of presenters at the conference suggested that critical data is not now available: "How do we capture system, provider, and condition-based performance data?"

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[51] While I have organized the following discussion under the themes presented by Mr. Lipstein, I am summarizing the thoughts of many conference contributors as reflected in my notes.

Metrics that address institutional priorities and team-based performances were identified as also important. Such data might include feedback on specific initiatives to determine what is working and what is not working. Comments also acknowledged the need to get patients involved in creating and assessing measures of what is important in patient experience and outcomes.

This new machinery of health systems should also be expected to respond to changes in reimbursement methods, which are expected to move from fee-for-service to bundled or capitated payment approaches in the very near future.[52] Understanding the real costs of patterns of practice is critical in a bundled payment world. Further, the machinery of winning health systems will need to scale up. Relationships among providers must be added and systematized, and patient populations must be expanded to provide for broad risk sharing and to avoid the adverse selection problem typically faced by academic medical centers—the sickest and poorest patients frequently seek treatment in academic medical centers where extraordinary care is available. The next challenge of scale to be addressed by the new machinery of health systems is an anticipated reorientation of health care systems to the health of served populations, which will implicate changing relationships with patients, payers, employers, and community-based partners. Attention to population health expands the concerns of health care beyond diagnosis and treatment to consider wellness, prevention, and community-based factors that impact health.

The winning health system discussed at the conference must do more than supply the machinery. Such a system must be politically capable of addressing three key questions

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[52] Bundled payments represent a single payment to all providers for a particular event of medical care (Bundled Payments for Care Improvement, n.d.). Capitation or global payments involve single payments per patient for most or all care requirements and may be considered to be at the opposite end of a spectrum of reimbursement options implicated by the approval of the Affordable Care Act (Major Affordable Care Act Delivery and Payment Reforms, 2013).

presented by one conference participant: "Are we asking the right questions? Where are we taking the institution? What are the measures of our success?" The *politics* Lipstein envisioned were not limited to typical matters of system governance. Lipstein and other commentators made the following points:

- Political considerations and power relations will be confronted by creating high impact multi-disciplinary teams and integrating clinical functions as the operating models for care delivery are restructured.

- Restructuring will require investments and decisions to prioritize funding of the most promising initiatives, while also recognizing the need to invest in initiatives that might fail.

- Politics implicated not only decision making but also accountability and transparency for outcomes. As a later speaker observed, an individual physician can own and be accountable for referral relationships and treatment outcomes individually, but no one seems to own collective or system outcomes as health care is currently operated.

- Achieving collective outcomes will require engaging with physicians, but one speaker observed that "we don't know how to do it."

- Physician life has become uncertain and physicians are responding with grief, denial, and anger.

- The focus on patient-centered outcomes highlighted questions not addressed in a physician-centric world—"what do patients really value?" "What are we creating for our patients?" This particular question was offered as a key to physician engagement and achieving collective outcomes: Creating favorable patient outcomes can become

a professional cause that can overcome personal physician career and professional concerns.

Lipstein also asserted that the *culture* of health care needed to change by changing the ways health care is delivered to become more system-based, as distinguished from being provider-based, and oriented to population health, as distinguished from treatment procedures. The culture he proposed is one embedded in outcome assessment and learning. But at the level of day-to-day practice, where the practical issues of care transitions and practice integration must become functional, comments at the conference reflected cultural issues of a different type involving communication and language. As an example, early efforts at integrating practice teams have been implemented by having teams conduct rounds together in order to allow everyone to *see* the team connecting the dots. While this process was described as "bulky," it was characterized as necessary in the absence of a systematized approach to team-based care *language*. The care transition issues reportedly have involved disconnects between hospital care plans and the community-based care management that actually occurs, causing one conference participant to remark "it looks like we don't know what we are doing." One commentator reported the observation that dealing with the culture of private practice is "straddling two worlds," and asked the question, "How do you change culture?" This observation and question suggested that the care transition issues described in the preceding paragraph also reflect a cultural gap resulting from differences in outpatient and inpatient care traditions and differences in the languages used to create expectations and communicate responses.

Algorithms for innovation. University of Utah Health Care has responded to issues facing academic medicine with initiatives to develop some of the machinery required for the success of a health system. Recent efforts are presented as Algorithms for Innovation, a series of

themed annual reports available at the website of the University of Utah Health Sciences

(University of Utah Health Sciences, n.d.).[53] In 2012 and 2013, the themes were transforming

the future of health care and solving impossible problems (Algorithms for Innovation, n.d.). The

2014 theme of Algorithms of Innovation was flow: Health care innovation as creating flows of

money, patients, data, DNA, and positive professional states of mind. Algorithms of Innovation

have featured University of Utah Health Care initiatives that have created conditions for health

care delivery reform:

- Restructuring of primary care began more than a decade ago, stimulated by a

  significant financial crisis.[54] The key driver of reorganization was the question

  "What does the patient want?" Called Care by Design, the resulting program created

  a patient-centered, primary care-based health care management model that focused on

  wellness, prevention strategies, and lower care costs within served populations.[55] In

  the process, "our community clinics became a powerful health services research lab,

  complete with wild ideas, new experiments, disappointing detours, unexpected

  discoveries, and, ultimately, a new understanding of how to move forward."

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[53] According to the Health Sciences website, the Algorithms initiative

> has been asking questions and searching for solutions to some of the most impossible problems facing health care today. We believe there's an unprecedented opportunity to invent a new vision for health care, and academic medicine is poised to lead the way. Algorithms for Innovation is designed to spark conversations, highlight best practices, and foster collaboration to help transform the future. (University of Utah Health Sciences, n.d., Algorithms for Innovation section, para. 1)

[54] The restructuring of primary care was presented in the 2012 Algorithms of Innovation (Algorithm 1: Focus on Primary Care, 2012). My descriptions and quotes are taken from that source. The driving question presented was "What if we thought of primary care clinics as important research labs?"

[55] The Patient Centered Medical Home program is a national effort with similar objectives (Patient-Centered Medical Home Resource Center, n.d.).

- Using data to drive quality improvements in clinical care also had its roots in the

  early 2000s with the piloting of the National Surgical Quality Improvement Program

  (Algorithm 2: Embrace Transparency, 2012). That program provided the impetus to

  define specific clinical outcome measures that could be compared across participating

  institutions because the definitions were detailed and applied consistently.

  Transparency of performance gaps encouraged measurable improvement in identified

  outcomes. At Utah, transparency has been extended to patient satisfaction ratings of

  physicians. University of Utah Health Care's publication of patient satisfaction

  ratings has been noted for its transformative potential (T. H. Lee, 2014; T. H. Lee &

  Cosgrove, 2014).

- Process improvements also have a history at the University of Utah. As an example,

  a series of sizable studies of infant fever undertaken by Dr. Carrie Byington has

  resulted in the re-creation of care processes for infants with fever (Algorithm 4:

  Nurture the Inventor, 2012). Process improvements focused on efficiency and costs

  accelerated under the direction of Dr. Vivian Lee, the Senior Vice President of

  University of Utah Health Sciences, Dean of the University of Utah School of

  Medicine, and CEO of University of Utah Health Care. Dean Lee implemented a

  lean process improvement initiative in 2012 with the intent to impact the entire

  medical complex (Algorithm 1: Tackle Inefficiency, 2013). The idea of this initiative

  was to allow the people engaged in delivering care to identify where the waste,

  inefficiencies, and quality improvement opportunities were located and make process

  improvements. The initiative was not merely focused on efficiency, but also on

delivering better care and greater value, goals that resonate with the purpose- (rather than profit-) driven culture of academic medicine.

- Dean Lee's other major initiative has been to establish a value initiative, labeled Value Driven Outcomes, that created and implemented a system to account for the cost of care delivery, clinical outcomes, and patient satisfaction (Algorithm 2: Know Your Costs, 2013). This initiative has been structured to fill two key gaps in health care delivery identified on the Algorithms website:

    Health care systems like ours, much less individual providers, have very little idea what their actual costs really look like, or how they break down over the full cycle of patient's care. . . . Moreover, we have even less of an idea how, or if, all the money we're spending is improving patient outcomes or experiences. (Algorithm 2: Know Your Costs, 2013, para. 3)

    Developed over a self-described "summer of sequestration," a cross-disciplinary group created a costing application that was focused on clinical operations. Using what one contributor called the ideal "blending of business, technical, medical, and top-level leadership expertise," the tool was created within six months. What made the project work was the value added through real-time contributions by professionals who were "released from their siloed everyday jobs, collaborating across disciplines and reporting directly to the senior vice president and her executive team" (Algorithm 2: Know Your Costs, 2013, Summer of sequestration section, paras. 4-5).

- Recently underway is an expanded learning initiative called ValueU also identified on the Algorithms for Innovation website (Algorithm 1: Tackle Inefficiency, 2014) and presented on its own website (ValueU: Disrupting Health Care and Higher Education, 2014). Although over 2,500 employees have been trained in lean process improvement techniques, the concern remained that such efforts were insufficient to

catalyze health system change (Algorithm 1: Tackle Inefficiency, 2014, ValueU section, para. 1). The issue—at the current pace, it would take 64 years and $64 million to train the balance of the 16,000 employees with the tools to allow them to innovate and contribute to the transformation of health care systems (ValueU: Disrupting Health Care and Higher Education, 2014, para. 1). ValueU proposes to adopt a hybrid learning model with online and experiential components to allow health care professionals to supplement their knowledge in support of creating value for patients. The initiative's objective is to create a "collaborative space that knits competency-based education together with online delivery methods to make health transformation stick and go viral" (ValueU: Disrupting Health Care and Higher Education, 2014, para. 3).

University of Utah Health Care has started to build the new machinery of more efficient, value-driven health systems. But as Steven H. Lipstein observed at the 2014 University of Utah conference noted above, the politics and culture of medicine also must be addressed.

The proposal for a health services research center. The initiatives of University of Utah Health Care have identified health delivery reform as a top priority. Early efforts to develop a patient-centered primary care model and process research have been accelerated in the short tenure of Dean Vivian Lee. Recent lean improvement, Value Drive Outcomes, and ValueU initiatives commenced under her leadership have targeted significant gaps in efficiency, meaningful data generation and use, and professional education. What is missing if health systems innovation is the ultimate objective?

Dean Lee was recruited from her position as the head of research at New York University Hospital to become leader of health sciences, health care, and medical education at the

University of Utah. At NYU, she had become impressed with the potential of health services researchers—including outcomes researchers, health economists, and sociologists, to influence health services delivery. As she noted, "their intellectual capital struck me as incredibly valuable if we could use them as advisors to the actual people running the health system and integrate that academic intellectual strength, that fire power, with the operational strategy of an actual delivery system." Dean Lee envisioned using the health delivery system as a laboratory where innovative ideas pertinent to reinventing care delivery could be tested under controlled conditions and documented in ways to influence patient care. She believed that this was an important role for academic medicine because any sustainable system changes would need to be embraced by the next generations of clinicians trained in academic medical centers. Hundreds of physicians, nurses, and other providers are trained at the University of Utah each year. She emphasized, "We're the training grounds for the future." Dean Lee observed that academic medical centers had not been the leaders of current efforts to change health care delivery. She recalled that the University of Utah Medical Center had been the top-ranked academic medical center in patient satisfaction in 2010, and she believed that the center could have a broader impact if innovative efforts undertaken there were rigorously evaluated and documented.

When Dean Lee arrived in her new position, some influential health services research was occurring within the University of Utah Medical Center (her examples included internal medicine, pediatrics, and research at the nearby and closely affiliated Salt Lake City Veteran's Administration Hospital). She noted, however, that those efforts were not necessarily having broader institutional impact. She believed a centralized, institutionally supported infrastructure for health systems research would help all clinical areas to leverage their capabilities and build toward a more significant transformation of health care delivery.

The original Proposal for a Center for Health System Innovation and Research (K. M. Bowman, personal communication, August 13, 2014) envisioned creating an interdisciplinary center with health services research members from departments within the School of Medicine, the Colleges of Nursing, Pharmacy, and Health, and non-medical academic disciplines, which are located on the University's lower campus. The center's mission was

> to develop and validate enhanced and innovative approaches to health care delivery and outcomes assessment in close collaboration with academic departments and University of Utah Health Care, including University of Utah Hospitals and Clinics (UUHC) and University of Utah Medical Group (UUMG) (p. 1).

Governance of the center was to be shared between health care and academic interests to ensure broad stakeholder engagement but also to achieve "evenhanded consideration of operational and academic needs" (p. 1). Although the center was to focus on health services research, the center was also charged with having an operational and clinical focus. This charge included some far-reaching targeted outcomes:

- to develop the "University of Utah Health Care system as a laboratory for advanced innovations in the design of health care delivery systems and health systems research" (p. 1);

- to develop research priorities shared by clinical and academic stakeholders "on outcomes that matter to administrators, clinicians, academicians, patients, and society" (p. 2);

- to improve clinical value;

- to interlink care, research, and education to create a "virtuous cycle . . . of health care delivery innovation" (p. 2); and

- to improve "clinical margin" and "academic productivity" (p. 2).

The original proposal envisioned that the proposed Center for Health Systems Innovation and Research would become "a premier, top-ranked academic institution in health services research" (K. M. Bowman, personal communication, August 13, 2014, p. 2). This status was to be earned by conducting high-impact, generalizable studies, developing focused research programs, and growing a "multi-disciplinary community of clinicians, investigators, administrators, and managers engaged in partnership-based health services research" (p. 2).

Funding of the center was to come initially from Dean Lee's office and interested clinical departments. External funding was anticipated "from rapidly-growing large new federal sources" including the Centers for Medicare and Medicaid Innovation (CMMI), the Patient Centered Outcomes Research Institute (PCORI), the Agency for Healthcare Research and Quality (AHRQ), the National Institutes of Health, the Veteran's Administration, and the Department of Defense (K. M. Bowman, personal communication, August 13, 2014, p. 2). The proposal envisioned that the center's support would move from using operating revenue surpluses from University of Utah Health Care and grants to include philanthropy and ultimately revenues from consultations (pp. 2-3).

The proposal for a Center for Health System Innovation and Research (K. M. Bowman, personal communication, August 13, 2014) presented a certain logic about organizing a new initiative to promote change in health care. The potential to tap growing sources of federal funding provided a unifying impetus to support a new center. Because the center presented the prospect of new resources, supporters even included basic science researchers who, according to one interview participant, might not have believed that health services research was even valid research. The center would operate within a sea of established academic and clinical departments but would not be assigned a place or position within those departments. Rather, the

status of the center would be assured by funding directly from the Dean's office, but would be maintained by its ability to facilitate large grants involving health services research and by its ability to serve all of the clinical, research, and academic interests of University of Utah Health Care. Governance was conceived in terms of balancing these potentially divergent interests.[56]

Ultimately the proposal for an unaffiliated health services research center gave way to the creation of a program housed initially within the office of Dean Lee in anticipation of the formation of a new Department of Population Health Sciences in the School of Medicine.[57] It was anticipated that Health Systems Innovation and Research would become a division within that new department, along with Biostatistics and Cancer Control and Population Health Sciences. Each of these anticipated divisions has been charged with developing Ph.D. programs in their respective fields. Creating a Department of Population Health Sciences achieved three objectives potentially impacting the purposes of HSIR and the other divisions. Population Health Sciences created an academic home (complete with a science label) and academic support (in the form of faculty) for HSIR's research work. Further, Population Health Sciences created an organizational home for HSIR that would have status with other departments and divisions within the School of Medicine. Also, Population Health Sciences provided a beachhead for research with a population health focus, as distinguished from a patient care focus. As noted by Dean Lee in my interview with her, "there are other dimensions of how we think about the delivery of health care that extend beyond the actual delivery system, but that include patient

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[56] This paragraph reflects my summary of the key elements of the Proposal for a Center for Health System Innovation and Research. The following paragraph reflects some of my observations about the Department of Population Health Sciences.

[57] As explained by one HSIR organizers, academic hierarchies at the University of Utah consist of departments, which have divisions. In turn, divisions have programs.

education, population health management, [and] the integration of science and health."

Although the department was formed with an academic focus, its role in Utah's overall strategy

to transform health care was emphasized by Dean Lee in her introduction of Population Health

Sciences (V. H. Lee, n.d.):

> We are taking on population health because it's the right thing to do for patients and populations. Part of the PHS vision is to provide an infrastructure that will allow creative interventions in the delivery of health care to be efficiently designed and then rigorously evaluated. Our academic center is uniquely poised to guide development of this emerging field. . . . It seeks to collaboratively harness and broaden the scholarly work already underway and to partner with the university's hospitals and clinics, indeed with health systems nationally and globally, to advance health and care delivery. (paras. 2, 5)

What is at stake in the success of the Health Systems Innovation and Research

Program.[58] Although a number of initiatives to transform health care were underway, the

success of the Health Systems Innovation and Research Program may contribute to achieving

some special opportunities for University of Utah Health Care that transcend the research work

of the program. Money is the starting point. Shifts in federal programs to fund innovation and

patient-centered outcomes research have reinforced the need to build health services research

capacity. One interview participant suggested that Utah's relatively low ranking among

academic medical centers in grant funding had been a concern. Another participant observed

that traditional grant funding for basic science was leveling out while health services grants were

growing. As this participant observed, the typical laboratory grants were relatively small, issued

in "increments of $250,000" while the health services grants could fund $3 million to $5 million.

Of significance, those health services grants also funded "indirects," which covered program

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[58] The materials in this section were taken from a number of interviews and reflect my views about some of the more significant factors of concern to the University of Utah Health Care leaders who were involved in creating the HSIR Program.

overhead and administrative costs. Because scientific equipment is very costly to acquire,

operate, and maintain, the indirect costs of basic research are very high; as she noted, "it's

incredibly expensive to run a research lab." The costs to run a health services research operation

are much lower. The bottom line of that math was clear—if supported by grants, health services

research could substantially contribute to the fixed costs of the health sciences after covering all

of the costs of the research. She commented that the grants that fund indirect costs provided "the

life blood of running the institution."

More than just dollars were at stake with the successful creation of the Center for Health

System Innovation and Research. As noted earlier, while some health services research was

being pursued in certain departments within University of Utah Health Care, a lot more of such

research was going on at the VA Medical Center and at Intermountain Health Care (IHC)[59] with

University of Utah faculty investigators. One interview participant described leadership at the

University as saying "how come all of that [research] is at Intermountain and the VA? It needs

to be done at the University in the University hospital facilities and in the University clinics." At

one level, this statement reflects a concern about reputation. As one example, pediatrics research

involving University of Utah faculty as investigators is conducted at the Primary Children's

Hospital, an IHC hospital. Primary Children's was relocated to the University of Utah medical

complex in the 1980s to take advantage of the powerful synergies between highly specialized

care for infants and children and academic research. While this collaboration and successful care

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[59] IHC is an integrated health care system of 22 hospitals, 185 clinics, 1,400 medical providers, 35,000 employees, and insurance products serving over 750,000 insured patients principally in the Utah and Southern Idaho markets. It is the largest provider of health care in the Intermountain West (Fast Facts about Intermountain Health Care, n.d.). IHC has been recognized locally and nationally for health care quality and innovation (Awards and Recognition, n.d.).

delivery improvements are recognized by both institutions, tensions between these institutions mean that neither can fully celebrate or claim ownership of significant research that documents care improvements.

Beyond reputation is the greater concern about the care of patients within the University of Utah Health Care system. What is at stake is serving the patients within the University system who will potentially benefit from the improvements to health delivery facilitated by health services research. University system patients do not participate in or benefit from the care improvement work done by University researchers outside of University hospitals and clinics. To serve such patients with improved care, new collaborations would need to be created among clinicians and researchers within the University system itself; these collaborations would be created between clinicians, who were acting to improve health care but who had no experience with health services research, and researchers, who were conducting research in fields related to health care but who had no experience designing or implementing research documenting quality improvements to clinical care. The preceding sentence captures the essential challenge faced by HSIR organizers. As emphasized by Dean Li, the Associate Vice President for Research and Chief Scientific Officer,[60] "we're here to change medicine—every scientist should aspire to impact a clinician and every clinician should aspire to impact a scientist."

Creating HSIR cannot be understood outside of an integrated view of change in health care. Dr. Li suggested that academic medicine must conduct research in order to change health care: "We're dead if we don't research to change." This research should extend to anything that will impact health care, from changes in delivery to genetics. "In a massively changing

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[60] My interview with Dr. Li was not recorded and his thoughts are summarized from my notes.

environment," Dr. Li asserts that using research to change "is a basic principle." Prioritizing and assessing research as an essential change strategy has implications for learning in academic medicine. Rather than defining the educational role of academic medicine as teaching medical students research results, academic medicine must use research to create a learning organization that impacts scientists and clinicians as well as students. In a learning organization, research is not evaluated for the independent knowledge claims it contributes to a discipline as much as the role research plays in furthering learning processes for all stakeholders in health care. Research in clinical settings presents a particularly sensitive learning opportunity. Dr. Li emphasized that clinical outcomes are impacted by how information is generated. Every clinical metric implies both an underlying problem and a test of a potential solution. What are needed to change clinical outcomes are new data and new perspectives on that data. Thus, the stakes of HSIR extend to the potential contribution of academic medicine to transform health care delivery through research.

The leaders of University of Utah Health Care also have recognized that creating cycles of learning toward transforming care delivery will require cultural change grounded in new forms of engagement with academic medicine's scientists and, particularly, its clinicians. Dr. Li described this work as creating a "culture of learning from outcomes." From his vantage point as a researcher, such learning ultimately needs to be reflected by clinicians who think like scientists and use new types of data to organize and transition care differently. But in a broader sense, the culture change he envisioned was grounded in re-establishing the historical culture of academic medicine, which more fully integrated its academic, research, and clinical missions and

achievements.[61] Dean Lee also saw the HSIR program as essential to creating "virtuous cycles"

of learning that impact health care delivery but also improve the careers and lives of

professionals. In an era of physician frustration and disaffection with medical practice, she has

envisioned creating a culture that attracts professionals "who want to be a part of change, who

have great ideas, but wherever they are, they're frustrated, nobody's listening . . . they can't

effect the changes they want to effect." This would be a culture where stakeholders recognize

that they can fix problems and improve the health system in the process. "I can fix these

problems" might be a unifying theme of culture change, the learning health system, and the lean

process improvement, Value Driven Outcomes, and HSIR initiatives in University of Utah

Health Care: Process improvements, value driven outcome measures, and health services

research capabilities provide the tools to fix problems identified by health care providers and the

platforms for creating collective commitments toward transformative system outcomes. Dean

Lee stated the case this way:

> I am very excited about this. I think if you combine tools, because people need tools . . .
> and then they need to be empowered right? They need to know they can fix things. And
> you capture that energy and the excitement and let them fix them, and you can track how
> well they're fixing them . . . you're talking about . . . unleashing a huge amount of
> potential.

HSIR leadership. The balancing of clinical and academic interests envisioned by the

original proposal for a health services research center required the final matter addressed by the

proposal—leadership. The center's leader was expected to present a particular set of experiences

and capabilities. These qualifications centered on demonstrated success as a health services

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[61] Dr. Li observed that the culture of academic medicine had become more private practice oriented over time as the scale of academic medicine has grown, the roles of clinicians and researchers have become more isolated, and more physicians have returned to academic roles after careers in private practice.

researcher, including "prior success in funded research demonstrating direct improvement of value-based care (better outcomes at equal or lower cost or demonstrated benefit of increased cost) in a health care delivery system, preferably including the candidate's own health care delivery system" (K. M. Bowman, personal communication, August 13, 2014, p. 3); having "a national/international reputation for health services research" (p. 3) and an established track record in obtaining grants as a principal investigator; and having conducted research about improving care. But the qualifications also anticipated an assessment of the relational skills and successes of the candidate. The leader should have demonstrated the capability of "interacting with clinicians, methodologists, and administrators," and an "ability to work effectively with multiple investigators . . . and to facilitate others' success" (p. 3). Further, the leader should have an "ability to build successful interdisciplinary research teams, mentor early-career investigators, and obtain the committed support of stakeholders who are not paid or directly supervised" (p. 3). The center's leader would also be expected personally to help to achieve larger institutional objectives by becoming an advocate, presenting a "vision for growth and financial stability of the Center as well as the healthcare system as a whole," and demonstrating "forward-thinking leadership . . . to prepare for and lead delivery system reform" (p. 3).

This position was filled by Rachel C. Hess, M.D. Dr. Hess joined the University of Utah in the early spring of 2014 from the University of Pittsburgh, where she had successfully built a portfolio of health services research grants funded by the Patient Centered Outcomes Research Institute (PCORI). Most notably, she was the principal investigator of one of 11 grants for the initial phase of creating clinical data research networks (CDRN). Her project, named PaTH, created a network involving over 2.5 million patients across the health systems of academic medical centers at the University of Pittsburgh, Penn State University, Temple University, and

Johns Hopkins University (PaTH: Toward a Learning Health System in the Mid-Atlantic Region, 2013). The awarded budget was $6,843,216. How did she get into the world of health services research? She described herself in my interview as "the annoying person who says the system's not working; we need to fix the system." She added: "I like to identify problems that other people don't necessarily want to have identified." As an experienced health services researcher, she was looking to identify research that was "practical and translatable" to system-level changes. Dr. Hess was joined at HSIR by Kim Bowman, a lawyer who had been working at the University's Office of Sponsored Projects dealing with grant contracts and administration. Bowman provided the local knowledge of University grant infrastructure, but even he was new to the Health Sciences. Lauren Kirwan was added under the title administrative assistant with the idea that her role would expand significantly beyond the scope of a typical administrative assistant.

In early May of 2014, these HSIR organizers articulated two central questions that related to their organizing activities—what will be the scope of HSIR activities—the program's reach and speed?[62] And how will HSIR be judged as successful? The original proposal for the Center for Health System Innovation and Research anticipated important objectives and anticipated the need to promote collaboration; the proposal, however, did not prescribe particular activities or require specific achievements. The organizers recognized that they needed to discover the success factors they would target and the activities that would be practically necessary for such achievements. In this respect, the organizers sought to identify the expectations of various

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[62] The content of this and the following paragraph were taken from my notes of meetings with one or more of the HSIR organizers during May of 2014.

stakeholders about HSIR success and how progress on such factors might be measured. Once key criteria were identified, the organizers planned to brainstorm the concrete steps that would be necessary to progress toward such achievements. Their inquiry concerning the scope of their activities would also be governed by the possibilities for the phrase health systems innovation and research. Each of the words in that phrase raised additional questions: Health system—who plays and what influences? Innovation—what's new and what needs to change? Research— what are the implications of innovation for system change? They also knew they needed to address what was at stake in the HSIR program's success—establishing collaboration across academic and clinical silos, impacting care delivery and patients, bringing in new funding, enhancing the University's reputation, and ultimately changing its health systems in significant respects.

Breakfast, lunch, and dinner. A logical place to start was addressing another key question faced by the HSIR organizers: "How do we create a space for collaboration?" After her arrival in early 2014, Dr. Hess' schedule had been dominated by meeting new people, usually in one-on-one meetings. She had particularly focused on meeting junior faculty who faced growing pressures to conduct research in order to stay on the promotion track. Organizing group sessions was an appealing way to introduce the HSIR program to a much broader audience of faculty and clinicians interested in health care innovation and research. The HSIR organizers also recognized that those sessions presented an important opportunity for participants to collaborate and a source of learning about the views and practical needs of those who shared their views. Such information would inform the expectations about the HSIR program and the essential scope of its activities.

After the introductory PowerPoint presentations in each of the BLD sessions, the participants were organized into cross-disciplinary groups to discuss the presented questions: What could innovation and research within a learning health system encompass? And what can HSIR do to facilitate your success and your scholarship?[63] The sessions might be summed up by the comments of one participant: "We don't know what we know and we don't know what we don't know." Attendees wanted to contribute to the larger cause of health systems reform, but knew they did not have many answers and did not believe they had access to persons or places where some answers might be discovered. Specific ideas for HSIR services were suggested, including providing research design and methods, facilitating grant applications, obtaining grant resources, mentoring researchers, matchmaking among researchers and clinical collaborators, and facilitating networking. Much of the dialogue, however, was more philosophical, exploring issues suggested by some key words that were used repeatedly: collaboration, data, research, ideas, innovation, and systems.

Discussions implicating collaboration reflected an important gap in health care—professionals were not working with other professionals who might further their professional development and research interests. By and large they did not know who such professionals might be or how to get the right people together. Most BLD discussion groups identified the need for cross-disciplinary collaboration on research, including connecting the upper campus medical with the social science, business, and engineering resources on the lower campus. But

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[63] I listened in and took notes of 18 small discussion groups over the six BLD events. The following summary is based on my notes and a review of feedback sheets turned in to HSIR representatives from the group discussions. In general, the returned sheets did not reflect the vibrancy of the discussions or the range of issues and questions posed by participants in the group discussions.

one participant asked, "who or where are they, and what are they called?" This lack of practical knowledge concerning potential collaborators contributed to one view that the "same things were being done in different silos," and that common projects and interests should be located across silos to promote mutual learning.

Collaboration also raised concerns of a political nature. One participant commented that the "doctor is no longer the word," but "what is the nurse's role when the physician-based hierarchy in medicine is replaced with collaboration?" Another group recognized that when collaborators truly value each other, a constructive situational engagement can replace hierarchical forms of engagement. And while health care teams were recognized as increasingly important, one participant questioned "where are the incentives to pull teams together?" Another discussion questioned whether the contributions of all team members were valued and whether new learning about teams was needed that would be focused on principles of "distributed cognition" and constructive group dynamics.

The issue of data, and related words research and knowledge were the focus of much discussion. On these issues, the needs of clinicians and researchers seemed to divide. Clinicians needed data resources to help them to "answer pressing questions." But typical researchers "don't experience clinical practice." Some clinicians had ideas and technical expertise to innovate but were missing research design, data analysis, and process mapping. Clinicians expressed the need for on-line learning resources for data science. While clinicians appreciated the importance of randomized controlled trials (RCT), rigorous data standards made such studies more difficult to conduct in treatment settings. One participant asked, "Does RCT reduce inquiry because of the burden to obtain data?" Clinicians recognized the need for data analytics to generate better clinical improvement questions, but one clinician asked "are we collecting the

right data?" As one example, a participant suggested that quality improvement work could generate generalizable outcomes for other clinical situations, but baseline outcomes data were not available. Focusing on research design will not supply the key data that is missing—"there is no way to access complete data for one patient" and no way to follow patients over time.

Researchers approached the data issue from a different angle. They needed access to big data, such as the data in the Utah Population Database, and needed experts to provide access to such data. But also researchers "don't know what data is there" or "who else is using the same or similar data?" Other comments suggested that researchers may not want to conduct research of clinical quality improvement work. While a participant acknowledged the need to find "ways to improve and validate" care improvements, another commented that "quality improvement work is messy" from a research perspective because it involves too many variables.

"Care is fragmented and research is fragmented," one participant observed. The lack of knowledge about what research has been conducted, whether successful or unsuccessful, was also identified as creating a knowledge gap with practical significance. The following questions about research were identified as important to be able to answer: What is the history of research? And what is the knowledge base? One participant commented about the need to create a database of research projects: "Research projects are not accessible to clinicians." Some projects that are not finished could be finished by others. At the heart of this practical issue is the need to avoid duplicating what has already been done.

Discussion comments suggested that innovation starts with putting "ideas together in different ways." One participant expressed the concern that "ideas get put down" but typically there was "no data or outcomes to back or contradict ideas." Innovation was linked to resources—one comment identified the need to fund a "radically different" approach to develop

"crazy seed projects and to incubate ideas." Another participant commented, "We need capital to fund failure." Innovation in health care must be supported by expertise in the design of care delivery and integration of practices. But in a resource-constrained environment one discussion also recognized the need to prioritize work to achieve "collaborative impact." Two other groups were looking for help outside of health care, calling for a "new academic perspective on innovation" and asking "what other leading thinking outside of health care might influence health care today?"

Innovation also implicated the need to focus on implementation. At one level good study design and research methods applied to study innovative practices helped to establish best practices to be implemented. But there was "tension between discovery and implementation" that could be addressed by making implementation practices themselves an area of study. One commentator noted that implementation research would require attention to barriers at the clinical and organizational levels. Professional barriers to implementing best practices included "open minds," threats to positions, and "what we don't know and think we know."

The term system was almost never used to refer to any specific set of operations or processes; rather references to system were the equivalent of the many broad references to health care. Changing the system was identified as "bringing pieces together." System innovation was described as integrating action— "take small steps and tie them together"—rather than large-scale redesigning. Focusing on making a lot of small improvements was characterized by one participant as "turning the system inside out." Similarly, another participant offered that the health care system could become a learning health system through achieving "ongoing improvement by generalizing results [of quality improvements] to other contexts." References to the health care system included not only diagnosis and treatment. One participant emphasized

that we must "redesign health care, not medical care." Another noted that the system got in the way of good care because there was no access to insurance data or an ability to follow patients after discharge.

The sessions also included some references to matters of culture. One participant referred to the need to understand the culture of the clinics. Another told a story of how the rollout of a new protocol raised cultural issues, illustrating that "different implementation is required for different cultures which have different ways of doing things." Another discussion identified a key cultural barrier to change in the American health care system—the prioritizing of physician and patient "choice" and "access" above demonstrated outcomes. Such a cultural emphasis on individual decisions produces health care where what is "best" means something different at different points of time. Collaboration implicated the larger issues of "translation between disciplines," which have "different languages for the same concepts."

The first interview: understanding in the position of an organizer. The organizers of the Health Systems Innovation and Research Program were positioned squarely in the middle of issues and questions. On the one hand were the system-level concerns and transformation objectives identified in the original proposal for the HSIR Center and discussed at the Building a Health System of the Future Conference. On the other hand, HSIR organizers were charged to address the ground-level, practical issues and gaps that were faced by clinicians and researchers that surfaced in the BLD discussion groups. My initial interview with Dr. Rachel Hess, which was conducted between the final two BLD events, provided her with an opportunity to reflect and comment on the work of the HSIR organizers and the HSIR Program.

Dr. Hess' interests in health services research extended back to medical school and residency. She simply enjoyed "seeing questions in pretty much all situations and . . . finding

solutions and application." Her focus was on research that was "practical and translatable" to system issues. While her practice in internal medicine focused on women's health, she had developed theoretical interests in understanding measures of quality of life and how people aggregate specific factors, including those beyond physical health, into a holistic understanding of life quality. Although she was not clear how she would further her theoretical work at Utah, she was intrigued with the Utah opportunity because the University of Utah was "serious about making system-level changes with data." But she also saw the opportunity as having the potential to fulfill her problem-solving interests and having a larger impact: "I wanted to keep building things, and I want to build things beyond my own program." She envisioned building a team of people within the HSIR Program who "think about things in different ways," and who can check their egos at the door and collaborate. She conceived of building the program in a way that would balance the program's achievements with helping others to be better at their work.

The opportunity to direct the HSIR Program was attractive for a number of specific reasons. The University had signaled its intent to change the health system and to use the health system as a laboratory to test reforms by unifying the leadership of clinical, research, academic functions under Dr. Vivian Lee. Dr. Hess noted that Dean Lee is driving for system change and stands for the proposition that "we can't keep doing things the way that we are doing them and sustain health care in this country." Dr. Hess commented that this commitment to change was demonstrated by other system-level research that was also going on, identifying the Surgical Systems Innovation and Research Program and Population Health Sciences as important developments. She also believed that the culture of the West and Salt Lake City in particular was collaborative and entrepreneurial. She was also net positive about Salt Lake City as a

location with strong recreational and cultural resources, although she expressed some concern about being able to attract talent to relocate because outsiders may perceive the city to be too small.

Dr. Hess observed a number of obstacles to health system transformation. Clinical care and scientific research were located in silos built to further the interests of clinical and academic disciplines and develop expertise. This system structure was reinforced by specialty organizations which advocate for narrow interests. Medical education conformed to this structure and reinforced it by feeding new doctors into specialty residency slots. The structure of the system preserved the status quo and prevented serious conversations about reallocating resources. She commented that this country probably could afford primary care as it is presently structured but not as many high-paid medical specialists as we have. Absent a reallocation of resources away from specialty care, the health care system was already moving toward a situation where only the very rich and the very poor may be able to afford care.

Dr. Hess suggested that patients were at the center of the problem. "People are very happy getting the care the way that they get it now," she said. She commented that patients are being used as political "bargaining chips" by specialty organizations and politicians who argue that health care reform will result in loss of access to quality medical care. But, as Dr. Hess noted, "we ration health care; we just don't admit it." The leveraging of patient fears has resulted in a failure to engage in serious dialogue about resource allocation issues. "For the most part," she offered, "we give lip service to the fact that health care costs are unsustainable." That lack of sustainability will ultimately create political pressures of a different type. She recalled Dean Lee remarking, "if we don't figure out a way to do it differently, somebody else will figure out a way to do it differently for us."

At the same time, Dr. Hess believed that patients could be an important part of the solution through health services research that focuses on a broad range of patient outcomes. Medical care today is oriented to treatment rather than outcomes: "We cure the diagnosis but rarely do we go back to see if that fixed the problem the person came in for." Existing measures are not attuned to broader measures of patient outcomes, and clinicians "don't really know how to interpret improvement or lack of improvement" on broader outcome measures. She believed that the HSIR Program has the potential to develop important research around patient outcomes including quality of life measures.

Dr. Hess envisioned an HSIR Program with an impact on health system transformation within University of Utah Health Care and nationally. When the HSIR Program is fully up and running, she suggested that all operational aspects of health care could be redefined through health services research driven by key questions: "How can we evaluate this, how can we study it, and how can we do it better?" The key to impact, in her view, would be the dissemination of results of "creative research," which combined operational changes with unique perspectives added through research processes. "If we do cool things and never broadcast it," she mused, "did they ever happen? Can they ever change anything beyond Salt Lake City?" This work would be accompanied by small-scale practical experiments, including tests of new theoretical practice models in local demonstration projects funded to validate good clinical ideas. Turning University of Utah Health Care into a laboratory to test new practice models would potentially change Utah's position in the national landscape of health care reform: "So in my fantasy land, all of these really smart theory-driven people will want to come to Utah because in Utah you can play with it before you foist it upon the nation."

The challenge posed by these possibilities was cultural. Dr. Hess stated the central question to achieving such possibilities in cultural terms: "What is it about the culture and the support that allows this to happen from a health system standpoint and from a community standpoint?" If the creation of such a culture would be essential, the question might be reframed in terms that are central to the mission of the HSIR Program: How might the culture of a learning health system be developed that would encourage broad engagement of entrepreneurs who are disciplined by attention to outcomes and by studying what they do with appropriate research designs and methods?[64] Dr. Hess identified some critical matters that would need to be addressed by the HSIR Program and its organizers using some key words: silos, data, quality improvement, and translation.

Dr. Hess recognized that dealing with academic and clinical silos was central to the strategy of the HSIR Program. The original proposal charged the anticipated Center for Health System Innovation and Research with "building robust, interdisciplinary collaboration for research and education" while also advancing clinical delivery innovation and outcomes research. While use of the term silos persistently carried negative connotations, Dr. Hess offered a much more nuanced understanding of silos and their impact in the health care system.

As a practical matter, Dr. Hess recognized an opportunity represented by silos and reallocating resources. She viewed HSIR as bringing resources and capabilities out of silos and

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[64] I attribute the particular phrase culture of a learning health system and this particular statement of the key question to Dr. Dean Li, Associate Vice President for Research and the Chief Scientific Officer in Health Sciences. Like Dr. Hess, Dr. Li has envisioned a health care system where "entrepreneurs . . . do crazy things but with organizational discipline." In his view, the learning health system would be driven by an "innovative flame" that would be "cultured with discipline" grounded in measurable impacts on operations and outcomes, financial and cost discipline, solid research design, and grant funding. As noted earlier, the interview with Dr. Li was not recorded and the quotations are reflected in my notes of his interview.

connecting and mixing them across silos. At one level, this connecting function could be implemented by technology—developing a good website and database access so people would be able to connect with collaborators. HSIR intended to pursue such a solution that would allow researchers to identify potential collaborators with similar research interests or needed expertise.

Dr. Hess also recognized that silos presented a data problem. In order to improve health care delivery, useful "knowledge integration" would be required. The HSIR Program had an interest in creating "ways in which knowledge moves more seamlessly and data moves more seamlessly between silos in a way that you can aggregate it to be usable." The starting point toward knowledge integration is data access. She acknowledged that accessing such data in a way that would be useful would likely require an overlay of metadata, observing that librarians "organize things with appropriate metadata in a way that they can be found."

The divide between clinical and research silos was a particular concern to Dr. Hess. Academic medicine used to feature "triple-threat" clinician researchers who also taught students. But the complexity of academic medicine and the drive toward specialization had fragmented those functions over time. In turn, the clinical education had become curriculum-based rather than apprenticeship-based. Each move toward specialization increased the risk of further fragmenting health care. She was very critical of what she called mission-based silos because attention just to narrow specialized performances of professionals interfered with the integration of research and clinical functions. On the other hand, she celebrated research-based silos, which were contributing to the scientific knowledge base of medicine. Of course no silo was either completely mission or research driven, in her view, and the people in the silos could move rapidly into a protective mission-based mode. Dr. Hess has described this movement as a "landmine" effect, which she experienced on occasion as she worked to establish relationships

across silos. Successful organizing required "finding out what the landmines are that you didn't even know were landmines." She continued with reference to collaborating across silos, "we're playing in an environment where we don't even know what all the rules are."

These observations highlighted a practical tension in the operations of the HSIR Program Dr. Hess identified: "HSIR needs to be very careful that as we're trying to break down those silos and leverage those silos, we don't reinforce the silos by mistake." Her objective was to promote collaboration, tap capabilities and resources, and integrate practically useful knowledge without generating a defensive reaction that reinforces isolation. Achieving these outcomes would require a balance of speed and deliberation, creating a pace of change "fast enough to be effective and not forgotten about and deliberate enough to not reinforce silos." In part, success would require a balance between traditional measures of success and new organizational outcomes that would factor in the objectives of the HSIR Program. As Dr. Hess noted, "I don't think that there's anybody who controls any of these silos that wants us to fail, but they also don't want themselves to fail, right, and so how do we keep everyone safe and whole?"

The clinical/research mission divide in academic medicine was particularly revealed in the quality improvement (QI) work of clinicians. Most quality improvement work started with untested ideas for clinical improvements that were tested in small practice settings (rather than on mice, Dr. Hess added). She called these QI projects "ideas in progress" rather than research, because to clinicians "research is scary" due to rigorous method designs and data collection processes. The problem was that "many of those small little QI projects or ideas never go anywhere because they never get studied." The ideas get lost, but Dr. Hess believed that HSIR could create a process to translate those ideas into practice improvements by studying them and disseminating the research. She emphasized the significance of implementing ideas in progress

through research, noting, "If the only thing that comes out of HSIR is that those clinicians with their languishing QI initiatives have a way to study and implement those projects and actually disseminate the brilliance that exists, it would be huge."

As used by Dr. Hess, the term translate reflected a typical assumption about implementing research in health care—in order to implement scientific research findings in practice, translation is necessary. In the process of moving scientific (bench) discoveries to world health impact, translation is required at multiple levels: Bench discoveries are translated into clinical (bedside) applications, bedside applications are translated into adopted (practice) procedures, practice procedures are translated into public (community) health impact, and community health impact is translated into global (world) health impact.[65] But the term translation has an even more common usage—the movement of meaning from one language to another. While Dr. Hess was talking about transitions of care between inpatient and outpatient providers, the terms transition and translation were used interchangeably in part, as she noted, because a team receiving a care plan in transition may not appropriately translate the plan to the range of patient conditions that might develop after the plan was finalized.

With a smile, Dr. Hess expressed her feelings about the challenges of organizing the HSIR Program she had undertaken: "I go from . . . 100% sure that this is going to be great to 'what the hell were they thinking when they gave me this job?'" She offered no concerns about financial resources and commitments that had been made to the Program or the ability of the

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[65] This summary reflects the standard NIH model for translational science as reflected on the website for the University of Utah's Center for Clinical and Translational Science (CCTS) (Center for Clinical & Translation Science: About Us, n.d.). In addition to translational science, CCTS is the present home for services closely aligned with HSIR's mission, including patient-centered outcomes research methods, research study design, biostatistics, and community outreach and collaboration.

Program to grow financial resources over time. But a question about what was uncertain in the

organizing of the HSIR Program brought the following response:

> I don't know if I can find the right faculty for this thing. I don't know if we're going to
> have the bandwidth to execute the partnerships that we need to execute before we get
> more people on board. I don't know if we can fulfill the desires of the entire institution.
> I'm afraid that general medicine has higher expectations of what I can help them with
> than I can. I don't know that we can maintain the momentum that we're going to need for
> long enough to allow us to succeed. I don't think that we can put the things in place that
> people want us to fast enough and I don't know how long the goodwill is going to
> last. . . . I'm shocked that anyone thinks we're getting anything done because as far as I
> can tell . . . we started 6 months—6 to 9 months later than we should have and are not
> moving as fast as we need to be.

Dr. Hess also expressed some angst about two personal matters that she viewed as

essential to her successful performance as HSIR director. As suggested by her responses, she

acknowledged she would be dealing with a lot of stress. Her particular concern was how stress

might impact her relationships with others: "When I'm operating well, I operate in a way that

allows people a tone of freedom, and when I get scared, I start to control them and I don't want

to do that." But she was also concerned about her personal learning: "I'm independently afraid

that I don't have enough experience to do this and that the learning—my learning curve is going

to be longer that what will be acceptable to make it happen."

PTSD: Are We Addressing the Right Problems?

> A problem represents the partial transformation by inquiry of a problematic situation into
> a determinate situation. It is a familiar and significant saying that a problem well put is
> half-solved. To find out what the problem and problems are which a problematic
> situation presents to be inquired into, is to be well along in inquiry. To mistake the
> problem involved is to cause subsequent inquiry to be irrelevant or to go astray. Without
> a problem, there is blind groping in the dark. (Dewey, 1938, p. 108)

In describing the shared core research facilities operated by University of Utah Health

Sciences, Dr. Dean Li has stated, "Our cores aren't run on gut instinct. They're judged by

metrics of financial and temporal responsiveness" (Algorithm 5: Learn to Share, 2013, Giving

generous institution support section, para. 2). In my interview with Dr. Li,[66] I asked him to comment on the phrase "temporal responsiveness," and his response was framed in terms of allocating scarce resources. Temporal responsiveness was about "PTSD": timely allocating people, time, space, and dollars to achieve a disciplined health care organization with entrepreneurial fervor.

Three organizers of the Health Systems Innovation and Research Program only have so much capacity to take on the issues and questions linked to words in the program's name. Allocating and reallocating people, time, space, and dollars in real time highlight the problems HSIR organizers were working to frame through practical inquiry. It is worth repeating Schön's (1987) observation that "problem solving is part of a larger experiment in problem setting" (p. 78).

Developing an action agenda. Dr. Hess reflected in her second interview at the beginning of August of 2014, "we've got a lot happening in the next 60 days," and it was time to figure out what HSIR was going to do in that period. Her objective was to model "continuous quality improvement" in HSIR:

> Okay, this is what we want to deliver. This is how we want it to go. Let's see if we can make that work. If it doesn't work, let's figure out why it didn't work, post mortem it, and then figure out how to make it work.

The efforts of HSIR organizers during the first few months had focused on learning through meeting and connecting with people, but time pressures were building and one-on-one meetings were not efficient. Early contacts had allowed Dr. Hess to consult with junior faculty

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[66] As noted above, my interview with Dr. Li was not recorded and these comments reflect content contained in my notes.

on many grant opportunities those faculty members had identified. Kim Bowman described all

of the time Dr. Hess had spent with individuals as important for learning but also for the

direction of the program; such meetings allowed her to craft a program "vision appropriate for

what's already going on." Dr. Hess was also working more collaboratively on three research

projects, one involving system redesign for small medical practices, a second involving

collaboration with community partners, and a third dealing with inpatient/outpatient transitions

of care. In addition, certain research projects involving Dr. Hess were in the process of being

transferred to the University of Utah from Pittsburgh. HSIR organizers expected that research

collaborations would continue to grow. They identified the clear priority of hiring someone

within HSIR to provide research design and biostatistics support for the anticipated health

services research projects. They also envisioned using pilot grants to encourage researchers with

promising projects to use the best research methods. They knew HSIR would need a stream of

research projects with potentially high impact.

The BLD sessions had reinforced the importance of simply connecting people as well as

seeking out people with potentially important quality improvement or research ideas. The

organizers adopted the idea of continuing BLD in the fall as a series of themed networking

events featuring specific research topics including what Dr. Hess called "ideas in progress."

They also committed to organize a "learning health systems" seminar series, which would serve

educational and networking functions.

The HSIR organizers also planned to create a website and database solution that would

facilitate connections among research collaborators. A key part of the idea was to provide

linkages to other existing databases that would provide information about research interests. The

website would also provide access to the resources of HSIR that supported research based on the

stage of the research process reached by the investigators. The idea was to provide one-click access to self-help resources for each of the ideas, design, implement, evaluate, and disseminate stages of a typical research project.

Emerging issues and problems. In addition to the foregoing initiatives, the agendas for the HSIR organizers also started to be impacted by the agendas of others within Health Sciences. During the summer of 2014, the Department of Population Health Sciences was organized with the appointment of Tom Greene as interim department chair. Greene was the Director of the Study Design and Biostatistics Center, a cross-departmental support center located within the Center for Clinical and Translation Science (CCTS), and his appointment made sense because the new Department was slated to develop an academic program in Biostatistics as one of its tracks. While the formation of the Department has been anticipated, the appointment of Lauren Kirwan and Kim Bowman as half time support for the Population Health Sciences Department was not. This decision reduced their time available for Health Systems Innovation and Research Program work. Dr. Hess was asked to become a principal investigator on one project that was a priority of a clinical division. One interview participant suggested that a reason for her appointment was that she was new and had the most available time. A research project Dr. Hess imported from Pittsburgh exposed a conflict among researchers and providers in community clinics. The expectations of Dr. Li for research and grant dollars were clarified; HSIR would need to focus on obtaining some larger grants.

These developments occurred over a few weeks during the summer in what is typically a less demanding time of the year. The organizational lives of these professionals were not planned, but experienced as PTSD, in the sense offered by Dr. Li—constraints on people, time, space, and dollars. Paraphrasing Kim Bowman's reference to calendars of HSIR organizers, they

cannot pay attention to everything, so they end up dealing with "whatever floats to the top and absolutely we're going to do or deal with."

The problematic situations that rose to the top of the agenda over the late summer of 2014 were reflected in the interviews of the HSIR organizers and other clinical and research leaders who had a stake in the progress of health systems innovation and research. These problems are explored in the following sections.

Addressing Population Health Sciences and the siloed structure of academic medicine. The anticipated creation of the new department presented some uncertainty. On the one hand, the department would allow the HSIR Program to achieve "division" status in organizational hierarchies of the Health Sciences. It was not clear, however, what steps needed to be followed to create a new academic division, an issue that would preoccupy Kim Bowman in his role as program manager. Even though HSIR was still envisioned to have a small footprint, division status put HSIR on the organizational map as an academic field of medical science. Population Health Sciences also created some relational risks. Both an interim and a permanent department chair would be appointed. The interim selection of Dr. Tom Greene was viewed as very favorable for the prospective HSIR division. HSIR leaders had already developed good working relationships with Greene and viewed as positive that his primary research interests were compatible with but not overlapping of their health systems research focus.

The Population Health Sciences Department was slated to have both a biostatistics and a health systems research Ph.D. programs. That development started to focus a larger question— what would HSIR need to do to create a distinctive point of emphasis within Population Health Sciences? Lauren Kirwan became the dedicated HSIR organizer working on curriculum for the proposed health services Ph.D. degree. Her question quickly became, "What's going to set the

health systems research Ph.D. apart from a public health degree?" After all, improved public health was the targeted result of health systems innovation. The same question could have been posed for the biostatistics degree. Putting together a curriculum for a new doctoral program in health systems research involved taking what was useful from courses that were already in place in established programs—"borrowing heavily from other people's curriculum," as Kirwan acknowledged. While some overlap between certain programs would be expected, the degree in health systems research would need to establish particular areas of focus. Kirwan and Dr. Hess were particularly excited about establishing a comparative international health systems focus as a unique contribution of the health systems research degree.

Kim Bowman believed that HSIR's academic mission would not have been appropriately aligned with clinical operations or public health, although he also commented that the location of HSIR outside of the clinical services had been controversial. He viewed this positioning as contributing to an understanding that the HSIR Program was about research and education rather than patient care. Nevertheless, he also believed that additional clarity about the role of a health services research division was in order but for a different reason. He was already somewhat concerned about the position of the HSIR Program in light of robust research operations within different areas of the medical complex including pediatrics, the Huntsman Cancer Institute, and the Surgical Systems Innovation and Research Program. While these operations might have been characterized as "silos," or, as one interview participant offered, even "little empires," Bowman viewed these centers as creating clinical trial shops within a larger department structure. Bowman added, "if they built it and it serves their needs and all their people, why would they incorporate it into some other part?" Bowman saw the potential role conflict among

the HSIR Program and other research centers as being resolved if HSIR were to act as a resource to other divisions that did not have robust research operations.

How would HSIR organize to achieve its multidisciplinary research mission in light of the prospect of becoming its own "silo" in a new department and no longer operating directly from Dean Lee's office? Kim Bowman reemphasized the importance of breaking down silos and stringing connections between them as essential to the mission of the HSIR Program. The central activity in this connecting process is "touching a lot of people." But in Bowman's description, that touching involved some giving by HSIR and some taking—the "borrowing" of people and time: "Instead of hiring a bunch of full time employees to make really big divisions in a really big department, [HSIR and the other divisions within Population Health Sciences] are going to borrow fractions of existing faculty member and researcher time." This model required the HSIR organizers to anticipate taking specific roles as facilitators and enablers of health services research collaborations. Dr. Hess would serve as a resource for ideas; the new website and database HSIR was developing would operate to connect collaborators; a new biostatistician would provide research design, technical assistance in the grant application process, and evaluation support; Lauren Kirwan would act as a grant writer and research coordinator; and Bowman would help with grant and contract management. Borrowed capabilities would be inserted into HSIR's teaching and research missions as other collaborators were needed to meet specific requirements. But while HSIR was formed on the idea of finding other people and being able to "charge them and get them involved," one interview participant offered that "everyone's overwhelmed with work already" and predicted that HSIR would struggle to locate any "bandwidth."

The foregoing strategy was building on Dr. Hess' philosophy of tapping the resources and strengths of research-based silos without reinforcing the defensiveness of mission-based silos. Kim Bowman characterized Dr. Hess as a health services researcher who could identify the great resources within the existing silos and "know what things were important and help break down some of those barriers." He continued, "We're getting feedback that tells me that this probably is the right problem and that we're on the right track and now we're at the stage where we need to make sure that we're developing good solutions for the problem."

Whatever solutions might be developed, the fragmented structure of research could nevertheless result in some persistent questioning about the role of HSIR and its relationship to other research support organizations including the Center for Clinical and Translation Science, centers fostering innovation in the health sciences, and the larger academic position of Population Health Sciences in light of the Public Health program. One interview participant who was very familiar with the HSIR program and Population Health Sciences nevertheless expressed a lack of clarity about the boundaries between the new organizational components and existing ones. She commented that "there will be some . . . helping to see that everyone has a role and that [HSIR] is not going to replace anybody; they're only going to add value."

Further, the fragmented structure of research would likely present potential obstacles to health systems reform. As one commentator noted:

> The university in its organizational structure almost looks like a house that was built and then just had additions added to it over the years. And some parts have been improved and other parts have been . . . less well taken care of. And it's starting to look like this Frankenstein monster to the point where parts don't know what other parts are doing. . . . It's really grown all over the place, which is good. It means the university is doing well. But at the same time it means that you've got three different departments that don't know that the others are doing the exact same thing.

This commentator did not see any reorganization occurring to potentially duplicative research functions due to "political realities." Dean Lee was very clear in her interview that the creation of the HSIR program was not intended to take away anything that others had built. Therefore, the HSIR Program would have to stake out its own organizational space and build success by connecting, facilitating, enabling, and borrowing.

Developing health systems research with internal and external impact. Much of Dr. Hess' second interview focused on the key objectives of the Health Systems Innovation and Research Program relating to health systems research. She recognized challenges facing both the research and clinical aspects of the equation. For researchers, "How do we get researchers to write more . . . [and] better fund the work they are doing in this area?" For clinicians, "How do we take the person who's a hundred percent clinical and facilitate their publishing of their findings?" But there were questions of greater scale to be answered if health services research was to have its intended impact: "How do we get people to work in this area, but also how do we get the work that's being done published and out there?" These questions reflected the central problem articulated at this point in the organizing of the HSIR Program—getting impactful research identified, designed, funded, and published. She was looking for research that could impact the delivery of care within the University of Utah Hospitals and Clinics in a material way through broad implementation, and she was also looking for a way to have the health care world outside of the University of Utah benefit from what was going on there by disseminating research about care delivery improvements. The key questions she posed were "How do we design our research to not only be externally and also internally impactful?" and "How do we design our quality improvements to be not only internally impactful but also externally impactful?"

These questions implicated the need to change the work of both scientific researchers and clinicians who were implementing quality improvements. Dr. Hess provided some thoughts on these topics. Scientific research was not necessarily designed or communicated in a way that would directly impact clinical practice. Nevertheless, Dr. Hess believed such research might still be published depending on how novel the questions and research results were. By seeking publication, a researcher sought to be externally impactful at the level of science. Health system impact occurred only if implementation teams were able to adapt the science into clinical practice. At the other end of the spectrum were the quality improvements implemented by clinicians. These improvements changed care delivery in specific ways for specific clinicians, but with what impact on the health care delivery by University of Utah Health Care and the larger health system? Quality improvements only have greater impact internally if implementation teams spread the work broadly into practice and externally if the implications of the improvement work are spread through publication.

Dr. Hess listed the challenges facing clinicians to research the quality improvements they were implementing. Clinicians were motivated to implement quality improvements in order to provide excellent patient care rather than to conduct research. She believed clinicians were generally uncomfortable with randomized control trials in part because they were not trained as researchers. Their quality improvement projects were not obvious candidates for publication because they were process-driven rather than science-driven. Nevertheless, Dr. Hess asserted that analysis and statistics could supplement the work of those who were engineering process changes and make process-oriented studies more academic and publishable, even though not "methodologically perfect." But at an even more basic level, quality improvements presented a difficult research target because, as Dr. Hess noted, "This is all moving forward, right?"

Clinicians who have implemented changes "are already doing these things." Retrospective baseline data may not be available, the clinical changes may not have been implemented with research designs that anticipated publication, and even the steps taken to implement changes may not have been fully documented.

Dr. Hess recognized that entire programs for quality improvements were also moving forward, and not all projects were created with an equal opportunity to have greater internal and external impact. She wanted to insert an HSIR perspective in the processes that were prioritizing quality improvement projects. She assumed that all of the scheduled quality improvement work ultimately would be completed and clinicians could achieve broader internal impact within the University of Utah system through implementation; on the other hand, she also believed that only some of the projects would hold the potential to be externally impactful through publication. Her objective was to find a way to identify the projects with the greatest potential for impact and allow HSIR to provide design and statistics support to enhance opportunities for publishing those studies. This approach would enhance impact in two ways—by publishing studies touched by HSIR and by growing the research capabilities of the quality improvement implementation teams, resulting in more publications going forward from those teams with less HSIR time investment.

Dr. Hess also offered the ultimate solution to the issue of impactful research. Change-oriented clinicians and scientific researchers would forge partnerships. In such partnerships, the clinicians would see the researchers as partners in developing internally and externally impactful health care delivery changes, and the researchers would see clinicians as strong partners who would demonstrate that practical importance of research by implementing their science. Dr. Hess acknowledged that such partnerships would depend on changing the operating paradigms of

both researchers and clinicians to consider the needs and interests of the other group, and also to "start thinking about how they move this knowledge out of their own internal silo . . . into the more general world of people doing [the same things]." She also observed that it might be "easier to change the paradigm of the people doing the quality improvements and the clinicians," rather than the researchers. Another interview participant confirmed that researchers in the health sciences might not find research of quality improvements to be very interesting.

In turn, Dr. Hess suggested that paradigm changes would require learning through experience: "The only way I can think of to teach people how to do this is to create situations that allow them to do it. . . . That's an experiential curriculum in how to do this stuff." While she suggested she would rely on the ValueU program and Ph.D. curriculum to be developed with the Population Health Sciences divisions to some degree, she commented, "The fastest way that I see to get this started is to get people doing it." She concluded her interlude about learning with questions: "Can we make them credible by giving them the experience and the publication and the funding without giving them yet another certificate in yet another topic?" What was at stake was not only figuring out how to train the people who are already working within the system but also to answer the question, "How do we then train the next generation to begin to think this way?"

Funding impactful research and the HSIR Program. The Health Systems Innovation and Research Program was not only charged with facilitating multi-disciplinary health services research, but also with obtaining funding for specific projects and disseminating impactful research results. A number of interview participants suggested that ideas to change aspects of health care delivery were plentiful, although, as Dr. Hess noted, sometimes there was a need to "clean the message up a little bit." Funding small scale quality improvement projects typically

required local resources, and even the funding of the HSIR Program initially was funded by operating margins generated from health care operations. The HSIR program needed to demonstrate greater internal impact by generating funding from external sources. Kim Bowman reflected the understanding that "we've got to be able to stand on the scales and weigh more than what it costs to have us." At one level, the HSIR Program could help to locate resources for researchers who might be "looking for money in all the wrong places." A meeting with Dr. Dean Li had further clarified how he defined success in terms of grants. As Dr. Hess remembered thinking: "Okay, we understand what success is. Now we can meet it. We're good." She added that "I think that getting a few of these grants in and funded will be important." Ultimately, the program would need to successfully access large scale grant funding for health services research containing all the "indirect" funding that would be so valuable to University of Utah Health Sciences, while also building its reputation.

Dr. Hess believed that grant funding was available for projects that would implement care changes and disseminate results. Success in obtaining grants and also in achieving publication shared a common feature: Written products needed to be packaged to meet the expectations of grant funders and publishers. She noted, "You can take a good idea, package it poorly and not get it funded and [take] a good idea and package it well and get it funded." Researchers who are successful in obtaining funding "are not necessarily the most creative researchers. They are people who are . . . able to convey their ideas to others in a format that they expect to see." The trick then is "to write this in a language that [grant funders] will understand" and with all of the necessary steps.

Although HSIR organizers understood that obtaining grants was an essential role of the program, they were not clear about how they would obtain credit or financial support from grant

funds. Because HSIR was gearing up to support research rather than conduct studies with its own researchers, the rules for the sharing of credit and resources were important. Kim Bowman anticipated providing an annual report of HSIR activities, along with budget requests, but such an approach would not be the equivalent of controlling grant dollars and paying HSIR's own administrative costs. He assumed that HSIR might get ten percent of grant funds for acting in the capacity of a grant administrator but also reported that sharing of grant revenues for grant administration had already become a controversial topic. Further sharing of revenues from grants could vary widely based on the actual contribution of HSIR resources and the value attributable to those resources. Nevertheless, as Bowman also recognized, "We are going to need that percentage if we're going to be self-sufficient at some point here." The issue to be worked through is how to allocate the benefits and credits from funding obtained through collaborative, team-based efforts.[67]

Uncertainty about allocating grant resources made predictions about HSIR's break-even point totally speculative. Bowman figured that HSIR would need to get some share of revenue from upwards of 100 grants of between $50,000 and $500,000 over two years to be in a position to claim success. Of course such grants would cover a lot of direct costs, but also hold the potential to fund enough indirect costs to pay for HSIR's entire operating budget after the allocation formulas for benefits are worked through. Touching 100 successful grant applications

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[67] The idea of sharing cost savings, as distinguished from revenue sharing, was also raised as a possible source of HSIR Program funding. This model was popular in clinical departments where innovations that produced cost savings were incentivized by sharing that benefited the department with further research and professional development dollars. No viable model existed to implement such a program with a research partner outside of benefitted clinical departments, even though such research might have been instrumental to evaluating and implementing cost saving initiatives.

over the first two years of operations would be a significant challenge for HSIR organizers. In fact, with the availability of continued funding from Dean Lee's office and special funding for distinctive curricula and research based Ph.D. programs from the State of Utah, the HSIR organizers were probably not under financial pressure to achieve those grant funding results. But they were charged with growing revenues, research, and reputation, and grant funding was an essential piece of the virtuous cycle envisioned when the HSIR program was formed.

Disseminating research results. Disseminating research in medical publications, especially research of quality improvement work, depended on its novelty. The key was writing in an area "that's been perplexing to others," as noted by Dr. Hess. Dr. Hess and other interview participants commented that even process improvement work could be attractive to specialty journals because health care design and health system improvements were becoming more prominent subjects for publication. Success in obtaining publication of research depended to some degree on the research being "methodologically related" to other studies published by a particular journal. The researcher must also have presented the study in a format that was recognized by the particular publication. These hurdles of research design and style were ultimately secondary to the content of the work, which was enforced through the traditional system of peer review. She viewed the need to meet predetermined methodological, style, and content expectations of peer reviewers as aspects of "the problem of the peer review system." The content standards of the disciplines and expectations regarding study methodologies and formats operated to reinforce the status quo in health care delivery.

Dr. Hess also envisioned that a larger study integrating process improvements and Value Driven Outcomes (VDO) data would be of interest to larger journals. VDO data is potentially interesting for publication because the system involves direct measures of cost, rather than

typical cost characterizations, which are derived from other financial metrics such as prices. Her best guess, however, was that 90% of the work involving VDO data was not getting captured or positioned for publication. While this outcome may have resulted from the impetus of the VDO initiative to improve internal operations and care, Dr. Hess believed that academic medicine had an obligation both to improve clinical care and to advance the science of medicine more generally. She was particularly encouraged that the combination of process improvement changes and the cost accounting provided by the VDO initiative might combine to provide some novel research to be published. The HSIR staff could support the publishing of such research by serving as mentors during the research process, by identifying possible unique contributions of the study, by providing research design and statistics support, and by adding analysis and other features to enhance the odds of getting the research published.

The traditional publication process presented another obstacle to the organizational objectives of HSIR organizers: delay. One interview participant offered an example of a multi-month process to publish a commentary of a few hundred words; the paper needed to be revised multiple times during the approval delay to reflect changing events. By one estimate offered in an interview, a typical innovation could take ten years to be adopted into practice. Research and publication time lines could be long.

What are the alternatives to traditional publication? Innovation-focused conferences and discussion groups were offered as alternatives by interview participants. In attempting to locate an acceptable middle ground between publication and water cooler conversations, the librarians at the Eccles Health Sciences Library, health care innovators, and internal medicine clinicians were working to develop an "e-channel" initiative to provide informal and rapid dissemination methods for innovative projects and ideas. At the core of the concept was a template for a

project description including condition prior to an intervention, the process followed to make a difference in the situation, and how the process may be further applied. Videos, photographs, and other forms of information were being explored as additional possible sources of content. These projects could serve as examples to others for care improvements that may be exported to other locations and situations. One key was to develop a dependable search capability to allow interested investigators to locate relevant projects. Search capabilities would require the development of a common language, serving a function much like the medical vocabulary provided by the National Library of Medicine. But the language would be more common, consisting of key words, identifiers, and descriptors that could be consistently deployed in project descriptions and searches.

The librarians also believed that the "e-channel" initiative should provide information about innovative and research projects that failed in their objectives as well as those that succeeded. The normal publication process has reflected what one interview participant called a "negative publication bias." While ideas that did not work present important opportunities for learning, the traditional publication process tends to eliminate such information from the public realm because researchers do not like to advertise their failures and publications tend to accentuate positive developments.

Additional motivating dynamics impacting research dissemination were also noted in a number of interviews: promotion and tenure. This feature of academic life may help to explain the possible lack of researcher interest in studying quality improvement initiatives. One interview participant questioned whether health services research, in particular research involving quality or process improvements, provided an acceptable path for retention, promotion, and tenure in academic medicine. One story of promotion failure suggested that research on

internal, operational changes did not provide a sufficient record for retention. Another issue observed was that quality improvement projects tended to be very small in scale, which sometimes prevented the application of research designs that would help to document larger impacts on patient care outcomes. But more fundamentally, retention, promotion, and tenure decisions tended to reflect the tradition and standards of each particular clinical and research discipline—in the words of one interview participant, "a huge tradition that really means a lot of really cool things aren't going to be shared."

Accessing and collecting essential data. As noted above, HSIR organizers set out in the summer of 2014 to create a website that would facilitate collaboration on research projects. While the BLD participants commented on a number of different data-related issues, the website concentrated on two particular data issues they presented: the absence of accessible data concerning the research interests of potential collaborators, and the resources available to help them in their research projects. As described by Kim Bowman, the solution was to "put together a dating service for researchers." As a starting point, he observed that all researchers filled out a profile indicating their research interests but no one knows where or how to access that information. Further, other data resources to facilitate research might have been available, but were locked up in siloed databases. The essential problem was that "no one is combining all the database data into one place." So HSIR organizers envisioned the website would also include the capability to conduct key word database searches across multiple databases in order to, in the words of one organizer, "pull the information from all of these different databases." Bowman stated the objective of this website: "By pooling all those databases, pooling all those resources into one place, they can find collaborators no matter where they are that are working on similar things."

The HSIR Program contracted with the Therapeutic Games and Apps Lab (nicknamed the GApp Lab) to develop this work. The GApp Lab is a collaboration between the highly ranked Entertainment Arts and Engineering Program at the University of Utah as well as the Center for Medical Information and the Eccles Health Sciences Library. The contract contemplated the development of an operating website by the spring of 2015. According to Bowman's report, at the initial meeting with GApp Lapp representatives, Jean Shipman, head of the Eccles Health Sciences Library, reported on the history of efforts to tie multiple databases together and ongoing efforts to achieve that result. She offered suggestions to address the management of data and knowledge. A representative of the GApp Lab reportedly reacted to the proposed project scope with the following comment reported by Bowman:

> Make sure that you're actually addressing the right problem. I know people came to you and said, "Hey, we can't find each other and we need help developing ideas and sometimes we need help finding money for it and then getting through the grants process . . . but maybe what they were telling you is the problem really isn't the problem. And if you build a machine to fix the thing that they said was the problem and it really wasn't, then you've not built a machine they'll use or you've built one that won't actually fix the problem for them.

Later in my interview, Kim Bowman confessed that the website was already a growing concern. The project was going to require website experts, computer programmers, an artist, grad students, research about available databases, project management, and other details to be reduced to contracts.

> And I worry that this is much bigger than we are seeing. That we've got the tail of it but we don't know how big the animal is yet. . . . It's going to take more than what we're talking about yet. We don't know how big it's going to be. It could take a lot more hands.

In addition to the GApp Lab contract, HSIR organizers also anticipated hiring a computer programmer who would be focused on database issues. They were anticipating growth of the website and information accessed through the site. Until that expert was hired, HSIR would be

borrowing additional technical resources from another department. Even later in his interview, Bowman made a specific prediction about the website and database project:

> We think we know what animal we've got the tail of and we're wrong. It's going to be bigger and have more teeth than we think it will. It will take a lot more to build that website to be functional the way [Dr. Hess] wants to meet her vision.

The data gaps on the research side could be characterized as problems of access. Science researchers needed access to existing data in databases, and clinicians with research projects needed access to researchers or biostatisticians who have data access. Access was complicated because certain data has been collected for certain purposes and resided on a certain database under the control of certain people. Ideally, data was stored with structures and languages that contemplated both how the data would be retrieved and for what purposes. But, as one participant observed, "A lot of times people just put in everything they can and then they didn't remember to figure out how they're going to get it back out." Further, data that was searchable tended to be stored with highly specific vocabularies of medical and scientific specialties—terms assigned by experts who knew the data they would want to retrieve for their special purposes. Such data might not be as accessible by other experts for other purposes and might not have any searchable linkages to more common fields of inquiry including economics, sociology, and education. Even access to data within a specialty might be complicated by variations in search protocols. As one example offered by Dr. Hess, length of stay data in the same database may be summarized differently by different researchers depending on how the data search was constructed.

On the clinical care side, data gaps revealed problems that were more complex. Clinicians collected data pertinent to an estimated 700 separate measures of health care performance. Much of the data load did not directly affect patient diagnoses, treatments, or care

outcomes. Comments in interviews and observed sessions suggested that the data systems were not capable of providing real time clinical decision support. But the more significant "data blind spots" existed around the issue of care transitions and readmissions—hospital-based providers discharge patients with expected outpatient treatment protocols and had no idea what happened thereafter. This was an especially important gap if a patient ended up being readmitted for the same condition. Health insurers have more complete patient data for the patients they insure, but that data is generally not accessible to inform medical decisions. The lack of insurer cooperation to provide data access was particularly "crazy," in the opinion of one interview participant, because the payers would benefit directly from lower costs and improved care that might result from the clinical improvements supported by access to their data.

The world of clinical data is in transition. The Patient Protection and Affordable Care Act mandated the meaningful use of health care information through the implementing of electronic health records (EHR).[68] University of Utah Health Care is in the process of rolling out a new EHR system, which is significantly impacting the professional lives of care providers and the roles of professionals in care teams. This rollout is combined with the emphasis on Value Driven Outcomes. Further changes in data collection and analysis can be anticipated with the increasing emphasis on generating patient-centered outcomes.[69] One interview participant expected another decade of "reacting to ways of measuring value that are externally imposed."

[68] Meaningful use requirements are included within a complex regulatory and incentive program for electronic health records (EHR) administered by the Centers for Medicare and Medicaid Services (EHR Incentive Programs, n.d.).

[69] Patient-centered research is funded through the Patient-Centered Outcomes Research Institute created by the Patient Protection and Affordable Care Act (Patient-Centered Outcomes Research Institute: About Us, n.d.).

He commented that "most people feel that the 700 measures we kind of use now are really imperfect." In his ideal world, University of Utah clinicians would "become leaders in developing metrics that matter" through health services research and HSIR Program expertise.

Engaging the community clinics and primary care. As the summer of 2014 progressed, much of what was new that floated to the top of HSIR's list for attention had Lauren Kirwan's name associated with the project. Self-described in her interview as "the biggest imposter in health care at the University of Utah," Kirwan had no technical health care or research training; technical training, however, was not a pre-requisite for becoming an effective organizer. In addition to her role with Population Health Sciences and the developing of curriculum, Kirwan also was slotted to interface with the University of Utah Health Plans on a potential expansion and a number of projects of potential significance for future health systems research. These projects included an outpatient cancer screening project and a project to monitor preventative care for elderly women. She was also helping to transition some of Dr. Hess' ongoing research from Pittsburgh.

Dr. Hess's study of the over-prescribing of antibiotics involved research in the community clinics, and Lauren Kirwan found herself in the middle of a disconnect between researchers and clinic health care professionals on unrelated research projects. Essentially, no protocols had been developed to facilitate researcher access to the community clinics on terms acceptable to the clinicians and patients, and the rules of engagement were unclear. The agreed solution was to develop a set of common sense best practices that would place clinician/patient/researcher interactions within acceptable bounds. As Kirwan observed, "There was just a very big gap between day-to-day common sense implementation and ivory tower research." But rule setting was also challenging because "some things are really great in a

bubble, but when it comes to the daily work, they just don't fit in." The key was to honor the required work of the clinicians in the way research would be set up and conducted. Kirwan observed strong clinician support for the approach suggested by Dr. Hess: "They are thrilled to utilize what Rachel is putting together because that is something that coincides with their mission" and "addresses their problems."

The community clinics were the location of some significant history of business model innovation in health care. The University of Utah had invested in the acquisition of a hospital, some clinic facilities, and primary care practices in the late 1990s at a time that reimbursement models were expected to flip to emphasize payments on a per-episode or per-patient rather than a per-procedure basis. Such systems, called bundled payment or capitation payment arrangements, compensated health care providers on a lump-sum basis for each care episode or each patient without adjustment based on the utilization of facilities or number of procedures. The University system anticipated that it would benefit from the scaling up of its primary care operations and the number of patients it would be compensated to care for. According to one interview participant, the worst case forecast was for a $1 million annual benefit from the acquisition. Because financial control systems were not in place, it took two years to discover that the primary care practices were losing over $20 million per year. It took five years to reach a positive operating surplus.

In the interim, the primary care practices had no option but to redesign primary care practices under the radar screen. While the motivation was to increase the efficiency and lower the cost of health care delivery, the organizing theme of the reorganization work was to maximize the patient experience and the clinician experience. The result was a program called Care by Design, developed under the leadership of Dr. Michael Magill, the chair of the

Department of Family and Preventative Medicine. The idea was to provide patients with a single primary care focal point for comprehensive and coordinated care across the entire spectrum of medical care and services.

The attention of health care is again turning toward primary care. Current expectations for Medicare and Medicaid reimbursements anticipate a strong move toward bundled payments and away from fee-for-service payments in the near future. Such a move will not likely be sufficient to displace the fee-for-service model for high-end medical services offered by University of Utah Health Care throughout the Intermountain Region, but, in the view of one interview participant, University of Utah Health Care will need to operate with two parallel business models—one based on population care and health and the other continuing to offer fee-for-service care. Each model will need to provide cost-effective care—defined as "the lowest cost, best outcome" and not just "the lowest possible cost."

Even though fee-for-service care would remain a prominent source of health care system revenues, the substantial growth of population-based care portends a significant shift from a health care system focused on hospital treatment to a system oriented toward "delivering health, not medical care," as one primary care provider offered. A system built to deliver population based health could include not only primary care centered teams, but also home health workers, care coordinators, social workers, and other community-based members of a health care team. In one view of this new system geared for population health, "Our job is not tied to the walls; in fact, the bricks and mortar are a cost center, not a profit center." In reality, the substantial growth of a served population may require the substantial expansion of community-based facilities to meet the primary care requirements of the community. What about hospital-based care? One hospitalist was not particularly concerned about the future of hospital care in the dual

business model world. He viewed the transition occurring within health care as moving from prioritizing volume of procedures to delivering value in medical care and was encouraged that there would be "lots of opportunities to test the waters and innovate."

Primary care was also implicated in a key respect mentioned earlier—the issue of transitions of care between inpatient and outpatient providers. Such situations presented concrete examples of how health services research might help to identify solutions, conduct effective studies of interventions, and impact the quality of care delivery. Yet, HSIR organizers found themselves involved in a conflict involving the values and practices of clinicians and researchers in the primary care setting of the community clinics. What are the practical prospects for health services research in a primary care setting? One participant offered that health services research in a primary care setting "is very focused on improving quality of care, and it's very grounded, and it actually is not a distraction from the clinical business." Other researcher-driven studies may not bring such favorable responses from primary care providers. The particular role for HSIR from the view of the clinics might be well summarized by the following observation: "Somebody has to have some expertise in how do you design a project like this, how [does a clinician] approach somebody through it with funding sources, with career pathways . . . and recognized career advancement."

This interview participant offered the following favorable scenario to be achieved by the HSIR Program over the following few years:

> We would have a robust portfolio of health services research underway that involves a meaningful number of faculty across the health sciences measurably improving the quality and lowering our costs of care, making us as a business more competitive, and, as an academic institution, being recognized as the place that's figured out how to cross over those silos and really make a difference in the quality and cost of care.

From her experience with the community clinics/researcher divide and other ongoing projects, Lauren Kirwan was starting to put a different characterization on the work of the HSIR organizers. While the research was important, she believed, "It is really easy for us to come up with all these great ideas and get them implemented through research." The real objective was to test how HSIR could function as "a prototype of how we need to really, really change the way that research is done and that a health sciences campus operates." She offered some key terms that she would use to describe the new operating principles for research and the health sciences campus: serving as "active relationship developers" and as builders of "relational understanding." Actively developing relationships involves "spearheading collaborative research by actively getting people in a room together who never would ordinarily meet"; rather than focusing on research projects, "it's a partnership and a relationship that we're developing . . . relationships plural." Relational understanding is reflected in partnerships and understanding across different silos: "Partnership and collaboration doesn't need to be a wrecking ball; it just needs to be an understanding." But she also cautioned, "I feel that relational understanding across the departments is just not there. Individual people want it, but there's no way. Nothing's changing." She envisioned the foundations of HSIR success in "steal[ing] one person at a time" from each of the departments and then leveraging the new partnerships and understandings that developed in collaborative projects.

Integrating health services research and quality improvements in care delivery. Quality improvement work in the sense the phrase was used by interview participants was generally initiated by clinicians who had questions they would like to answer or saw problems they would like fix. Because clinicians initiated these changes, the typical processes of clinical translation were not necessarily applicable. As noted earlier, translation typically involved

implementing discoveries of basic science in a process that moved from bench to bedside to practice. But quality improvement work initiated by clinicians started in practice, impacted the bedside, and never involved the bench. Nevertheless, both innovation processes resulted in process changes that improved care. Dr. Hess analogized quality improvement work as playing an ace high or low in a card game—quality improvements may be played high as the culmination of basic research or played low as the starting point for health care innovation.

Over time at the University of Utah, the availability of health services expertise had declined, with some faculty focusing on work at the VA and some at Intermountain Health Care. This trend left the University of Utah relatively strong in the traditional work of translation science and without corresponding strength that would help to improve health care delivery within the University health care system. The lean process improvement and VDO cost accounting initiatives had refocused University of Utah Health Care on an innovation agenda, but sufficient health services research capacity did not exist to design and evaluate such work. This gap was not just about generating publications, but potentially affected the quality of care because quality improvements work would significantly benefit from researcher input on research questions, design, and evaluation, and also researcher perspectives in fleshing out health systems implications.

Because the impetus for quality improvements existed in practice, health services researchers worked with clinicians to understand what the questions were and how they could best be approached. One interview participant illustrated the complexity of this work by reflecting on the meetings of a group of health services researchers she attended at another institution. These researchers adopted a collaborative approach where clinical questions were brought to the researchers as a group to discuss research design. The group evaluated whether a

randomized control trial or comparative effectiveness study was necessary, and even whether

qualitative research was appropriate to refine the questions, possible options for an intervention,

and alternative research designs. In this institution, that work of health services researchers was

tightly integrated with the very planning of an improvement initiative. Even though such

researcher engagement may be characterized as just "tweaking" a proposed intervention, as Dr.

Hess has been quoted as stating, such tweaking may be essential to understanding the optimal

invention and how a successful intervention might be effectively rolled out into the broader

practice.

From the perspectives of clinicians who engaged in quality improvement work, the

relationship of that work to research varied widely. At one end were the well documented

studies with control groups, and at the other end were quick-cycle pilot tests that are studied

more informally. Exploring these two ends of the QI spectrum informs the more specific issues

faced by HSIR organizers as they worked toward creating a research operation that would be

evaluating and supporting clinicians in implementing quality improvement projects.

At one end of the spectrum was work being done by pediatrics researchers at the Primary

Children's Medical Center, a facility owned and operated by Intermountain Health Care but co-

located with the University of Utah Medical complex. Research at Primary Children's was

unique within the University of Utah complex because clinicians who participated in pediatric

research had access to the Intermountain Health Care patient database, which is unified across

inpatient and outpatient care and all facilities. In the word of one participant, at IHC, you can

"track your child through space;" further, a researcher within the IHC system can capture a very

high percentage of the child population with certain conditions, which is "researching the

denominator" of a health problem in a population of children rather than just a sample from the

population. Another interview participant referred to the opposite condition of being locked "outside of the IHC firewall."

The pediatrics research of Dr. Carrie Byington and others has been very influential in changing the protocols for evaluating and treating infant fever. The stakes were significant. The vast majority of cases were routine viral infections, but the occasional bacterial infection could be deadly. Hospitalization was the routine course for most of these cases. While some of her basic science work in viruses was involved, an important aspect of her work was developing new protocols for service delivery. She indicated that this work started with a pilot project that was used to confirm best practices through health services research and then was rolled out across the entire 22-hospital IHC system. While the research could have justified 25 to 30 practice changes, negotiations with pediatrics, nursing, laboratory, and administrative leadership in a number of facilities resulted in agreement to implement six care process changes. The results of implementing the protocols have included persistent 98% or greater achievement on the six quality indicators, no cases of misdiagnosed bacterial meningitis, no law suits, and millions of dollars in savings from unnecessary treatment. These are great outcomes for patients within significant implications for concrete changes in health care delivery.

Dr. Byington integrated quality improvements with research in her work. As she reported, the chain of discovery in her work resulted in approximately 20 publications, with grant funding at each step of the research totaling in excess of $20 million. The process from idea to publication of the results of the protocol implementation was approximately 15 years. The one piece that was not documented was the actual rollout of the protocols, although Dr. Byington has presented at conferences on that particular issue.

At the other end of the quality improvement spectrum were the rapid cycle small innovation tests, including those using a PDSA (Plan-Do-Study-Act) model. The opportunities for researchers and publication-oriented study design for these projects were less clear. The benefit from a number of such projects may be measured only in terms of aggregate cost savings to a hospital. While important to that medical facility's bottom line, such projects may be less amenable to more formal study with respect to clinical outcomes. As noted by one interview participant, "Research integration has a potential of grinding those rapid-cycling innovations to a halt." The value of attempted integration still remained. "Part of that integration is having both perspectives at the table," in contrast to having separate clinical and research teams. Such integration may help to avoid a lot of effort on quality improvements that are not connected to larger objectives. As one informant noted, "We have 1,200 docs and 10,000 to 12,000 employees and another several thousand on a health sciences campus, and we probably can't deploy resources for 15,000 points of light." He suggested that fostering innovation around how to do things differently is relatively easy, but the difficulty is in deciding what to innovate and integrate in the health services realm. Health systems research could have a role in informing those decisions and operational strategy by providing perspectives about grant funding opportunities, publication potential, and larger health systems implications.

Changing health systems. One interview participant recalled aspects of the discussion that led to the creation of the Health Systems Innovation and Research Program including what she described as a long conversation about whether the program should have a title including the phrase health services or health systems. She also recalled that Dean Vivian Lee had placed a special emphasis on systems of health as a focus for the program. This interview participant emphasized this reference to systems involved smaller scale subsets of a larger health services

operation, while other interview participants used the phrase health systems as a reference to the broadest aggregations of health care operations and functions across multiple facilities and organizations. Like other terms used in discussing health care, references to health systems are ambiguous. In the case of HSIR Program, the phrase Health Systems in its very name invited the questions, "what problems should be solved by health systems innovation?" and "what discoveries should be pursued with health systems research?"

Dr. Rachel Hess believed that the work of the quality engineers and clinicians who were improving care delivery could be evaluated and published in ways that informed that national health system. She framed this evaluation in terms of translation—translating work into a "science of technique" that would provide novel perspectives on perplexing problems. She targeted achieving national impact and also national reputation through this health services research. Dr. Byington's pediatrics research provided an example of research that changed operating protocols with significant implications for the care of children nationally. Kim Bowman recalled Dr. Hess as anticipating drawing systems implications from a much broader range of quality improvement work and reported her saying, "I can make anything you're talking about health systems research" because it is fundamentally oriented to improving patient care. One hospital-based interview participant confirmed that the "systems view" had been missing in the discussion of hospital-based care changes before the creation of the HSIR Program. In light of the drive to produce higher quality services at lower cost, this participant believed it was important to have a "parallel research engine" that integrated with those efforts to improve value.

However the term systems was used in interviews, the term communicated a concern for linking together the pieces of medical diagnosis and treatment, basic science research, and health

services research work to improve patient care and health. Examples of linking offered in the interviews included:

- everyone understanding the principles of process improvement and also the methodological resources that can strengthen a QI initiative;

- improving the quality of care and developing better metrics that will help sustain lessons learned;

- conducting hundreds of small scale experiments and measuring the cost savings and care outcomes from such experiments;

- creating "virtuous cycles" of activities that reinforce changing patient outcomes; and

- ultimately creating a learning health system.

The ultimate test of health systems, however defined, is determined at the patient level in terms of the patient experience and patient outcomes. One of the significant challenges identified by one participant was providing effective treatment for any one patient across a full cycle of care. Using his example of a broken hip, care may begin with an emergency room visit and be followed by inpatient care, surgery, inpatient and outpatient rehabilitation, care in a skilled nursing facilities, and home health care. The patient would access and experience multiple silos of treatment along the way, and transitions would occur within and outside of University of Utah Health Care. An interview participant described typical operations in a world of fragmented care:

> We're not used to thinking about that whole cycle. . . . The hospital and the physicians are on wholly different kinds of cultures and payment models, and the emergency room doesn't coordinate with what happens on the hospital floor. Patients get a hip replacement and go to a skilled nursing facility and we have no clue what happens to them there.

The starting point to addressing this problem of the full-care cycle is to begin to recognize patient care as a system rather than the application of skills within specialty silos. This participant observed:

> We've got these big buildings up there, you know, where we kill mice by the millions. There's this huge infrastructure that helps support basic research. We do not have a mechanism to cultivate and support and encourage and train for those capabilities in health service research, which is what we need to do in order to figure out, how do we provide this care in a full cycle across the system, across what had been traditionally highly separated silos?

This observation restated the essential innovation and research objectives of the HSIR Program in terms of cultivating systems capabilities in health services research to address fundamental patient care problems.

Evaluating HSIR's progress. In early October of 2014, HSIR organizers met to reflect on their progress to date and plan a forward-looking agenda.[70] Chris Johnson, a biostatistician, had joined the HSIR team at that point, meeting a clear Program goal. But their evaluation of their progress was mixed: HSIR had a mandate but not a plan. While the BLD sessions had confirmed a broad mandate, a more efficient way of touching a lot of people needed to be created. They acknowledged that they needed to be focused on the numbers—specifically grant dollars for research—to meet the expectations of senior administrators. The target was suggested by one organizer who commented that "$10 million gets Dr. Li excited." Dr. Rachel Hess was already spread thin, and she had no time to follow up on important issues or to write. Better internal time control would be required. The evaluation was summarized with the comment that HSIR had been planting a lot of seeds, but the "seeds were not growing into plants."

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[70] I participated in this meeting, which was recorded but not transcribed. The content of this section is taken from my notes and the recording of the session.

The key areas of future focus identified in the planning session included the following:

- The website continued to be a topic of conversation. The GApp lab had struggled with the original website concept, but the HSIR organizers continued to brainstorm content ideas for the site.

- A newsletter was on the agenda to publicize grant opportunities and learning health system concepts.

- Developing a mentoring program had risen to the top as an important initiative. This was an opportunity to get "out of the silo of HSIR" and "meet with groups on their own terms." While HSIR could provide some tools to sensitize clinicians to research methods such as a website and newsletter, the organizers recognized the need to work on the specific issues of interested clinicians and researchers in their spaces. The mentoring program would focus initially on junior and senior faculty and general internal medicine hospitalists who were eager for such a program. Although the HSIR organizers anticipated taking on this new program, they also noted the difficulty they were already having of tracking people the program was already working with. A focused mentoring trial program was envisioned as a substitute for sessions featuring ideas in progress, at least for a while. The mentoring program was viewed as a solution to provide broad support but also to address significant time limitations. The key was to provide mentoring to groups, and that meant starting with groups within silos with known common interests. Unfocused efforts to stimulate cross-silo collaboration were deferred. Specifically, BLD events were being cancelled until the mentoring program was off the ground. The dialogue also

identified the need for a consultant program to help move pilot projects through to dissemination and implementation.

- Patient-centered research was also identified as a priority, and HSIR was helping with specific grant submissions. HSIR proposed to "re-brand" a PCORI research interest group to improve the odds of obtaining significant PCORI funding. The organizers noted that these grants could be up to $10 million. The patient-centered research discussion identified a key point—research in the hospital was focused on improving patient experience but the clinicians were not also looking at how health systems might be changed as a result.

- In addition to grant dollars, Dr. Hess envisioned tapping philanthropy. A $4 million donation could fund one junior faculty research position focused on health services, and she envisioned obtaining donated funds for three pilot innovation challenges each year in an amount of up to $100,000 per challenge.

- HSIR also needed additional personnel. Priorities included a chief information officer and a health economist to build out HSIR's research consulting and operational capacities. Dr. Hess also hoped to leverage hiring occurring within general internal medicine, which was seeking a faculty member with health services research experience. Such a professional could supplement mentoring capacity and also bring additional health services research. But as one organizer noted, "we'll see who comes; we can't plan, so we'll just dive in."

The meeting also included a conversation about HSIR's relationship to other organizational initiatives and potential time commitments for Dr. Hess.

- An Institute for Health Care Transformation had been at least conceptually formed under the leadership of Dr. Michael Magill, Chair of the Department of Family and Preventive Medicine. Dr. Magill had been instrumental in salvaging the community clinics with the Care by Design program and had become interested in the larger issues of redesigning health care delivery in the process. He viewed Population Health Sciences and the HSIR Program as attending to the care requirements of the patients actually within University of Utah Health Care and the Institute as focusing on the reorganization of health care delivery more broadly. The Institute was also conceived as providing a connection point for private industry, and Dr. Magill has established a close working relationship with IBM. The Institute was focused on health system innovation and had purposes very closely aligned to those of the HSIR Program.

- A personalized medicine initiative had been formed with the addition of Dr. Will Dere to the University health sciences faculty. This initiative was genetics-focused, but potentially provided other connections to industry. This initiative seemed to focus on a different end of the health care spectrum from Population Health Sciences, but nevertheless sought to promote innovation with impact on health care delivery.

- HSIR organizers also discussed the growing internal committee structure that was forming to establish clinical and research priorities. The group believed it was important for Dr. Hess to participate in those committees where the impact would be most significant on decisions affecting the HSIR Program. New committees potentially affecting the combined research/clinical mission of HSIR included Pop-Ops, an informal committee that was coordinating the work of Population Health

Sciences and hospital operations; the Research Advisory Council, a committee addressing research priorities organized by Dr. Dean Li's Office of Research; a Research and Analytics Committee addressing research and data issues within the health sciences; the Health Sciences Executive Committee addressing research operations; and the HCEC, the Health Care Executive Committee, addressing health care priorities. An initiative called Imagine Perfect Care was also listed on the white board. Layers of administrative coordination were becoming an increasing burden on time across the health care complex in order to address the larger issues facing University of Utah Health Care. As one department chair observed, his commitment to attend meetings addressing larger health system issues had expanded from one day a week to two plus days a week. In his department, the increased focus on health systems issues was requiring him to manage his department differently by delegating tasks so he could allot time to the larger issues. The conversations among HSIR organizers ultimately attempted to accomplish the same outcome—determine what was most essential so that time could be allocated to those functions.

- And the group also reaffirmed that they would not touch anything that the Center for Clinical and Translation Science was doing.

In summary, by early October of 2014, certain priorities and initiatives that had received high priority treatment in the summer were in the background, having been replaced by new priorities and initiatives. The emerging top priority was mentoring faculty research in order to demonstrate value by increasing grant dollars. Because time was of the essence, these mentoring efforts would be focused on the General Internal Medicine Department within the hospital where the ideas were plentiful, the clinicians were improvement focused, and the list of projects was

well managed by that department. Efforts to make random connections across the various silos were deemphasized, slowed down, or put on hold. New organizational demands and potential conflicting initiatives continued to surface. This was the professional world of PTSD in action—prioritizing the scarce resources of people, time, space, and dollars.

Toward Health Systems Transformation Through Virtuous Cycles of Learning

> Research with experimental systems is thus directed toward the disclosure of something not yet adequately understood and articulated, yet sufficiently established by the technical conditions of experimental work to present an intelligible focus of inquiry. The system, then, is oriented toward the disclosure of new possibilities. . . . They are possible through an apparently feasible reconfiguration of present circumstances, they show up as significant or interesting possibilities, and their possibility is transformative rather than merely additive (they reconfigure the sense of what one was already doing and dealing with). (Rouse, 2002, pp. 337-338)

On October 23, 2014, the Center for Medicare and Medicaid Innovation (CMMI) issued a funding opportunity titled "Transforming Clinical Practices Initiative (TCPI) Practice Transformation Networks (PTNs)" (U.S. Department of Health and Human Services, 2014).[71] The TCPI envisioned the formation of collectives of group practices, health care systems, and other participants "that join together to serve as trusted partners to provide clinical practices with quality improvement expertise, best practices, coaching and assistance as they prepare and begin clinical and operational practice transformation" (p. 5). This request for proposals provided a specific opportunity for HSIR organizers to put their learning to the test with some big dollars attached. The CMMI contemplated funding successful applicants with between $2 million and $50 million (p. 5). Because the national objectives of the program were large—affecting

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[71] This Center is one of the Centers for Medicare & Medicaid Services (CMS) of the United States Department of Health and Human Services.

150,000 clinicians and 5 million Medicare and Medicaid patients (p. 7)—the total program budget was large—an estimated $670 million for all successful applicants (p. 5).

On November 11, 2014, more than 40 leaders of University of Utah Health Care and the University Health Sciences met to organize an application to become a Practice Transformation Network under the CMMI's Transforming Clinical Practices Initiative. The meeting was organized by the Health Systems Research and Innovation Program and chaired by Dr. Rachel Hess and Dr. Michael Magill. Dean Vivian Lee had determined that the TCPI application was a new institutional priority and had appointed Drs. Hess and Magill as co-chairs of the effort. The conversation at the organizing meeting quickly turned to the implications of becoming a PTN and its possibilities for the future of University of Utah Health Care. HSIR insiders viewed the broad participation of health care leaders in the meeting as evidence of the success of their early efforts to build bridges across silos. They did not fully understand the work that would be required to address the application's requirements, but well understood that they would be the organizers of that work.

Building a practice in health systems innovation and research. Barely six weeks had passed since the early October Health Systems Innovation and Research Program planning session, and HSIR's landscape was looking very different. Of course the TCPI opportunity was front and center as a project to be understood, organized, and delivered. In one sense, taking on a cross-disciplinary project like a TCPI application was central to the purpose and the ongoing work of HSIR: It involved large external funding, the transformation of aspects of care delivery, and plenty of research potential. The recent planning of the HSIR organizers could not have contemplated the emergence of such a new significant funding opportunity and the decision to make it an institutional priority. Their plates were already full. Borrowing Dr. Hess' comment

about the central difficulty of researching quality improvements, the ongoing work of HSIR and the problems requiring its organizers' time commitments were "all moving forward, right?" What other work of HSIR would be potentially impacted by pursuing the TCPI application? Interviews with Kim Bowman and Lauren Kirwan in November framed the then-current agenda facing the HSIR Program from their perspectives.

In addition to the TCPI project, HSIR had other new projects on its plate. Kim Bowman was in the middle of assessing a possible acquisition of a non-profit research organization. The founders were retiring and the deal presented an opportunity to acquire some proprietary software as well as some research projects and some analysis and statistics capabilities. The problem was that HSIR did not have a need for additional analysts and the organization had uncertain prospects for its own grant-funded research for the forthcoming year. Lauren Kirwan had been assigned to serve as a liaison to the Imagine Perfect Care initiative, which had been conceived by Dean Vivian Lee and David Entwistle, the CEO of University of Utah Hospitals and Clinics. This effort involved the senior leadership of University Health Care who were engaged in a several-month process to identify the specific changes to health care delivery that would improve the patient care experience. In addition to weekly group meetings, participants were also involved with subcommittees dealing with communication, technology, and clinical care issues. These groups were focusing on the entire patient experience in order to identify specific points of improvement, changes patients were requesting, and obstacles that might be preventing the changes from being made. Kirwan indicated that most of her Wednesdays were spent on this new initiative.

Both Bowman and Kirwan were addressing different aspects of HSIR's relationship with the Population Health Sciences Department. Bowman was concerned with achieving division

status within the Department, which still required some academic approvals. One of the key powers of academic division status was the appointment of faculty. Dr. Hess and the leaders of the cancer division would need to be appointed as faculty in their respective divisions.

Most of Lauren Kirwan's Mondays were spent on Population Health Sciences and curriculum matters. She was doing the heavy lifting of drafting a required submission to obtain the approval of the Ph.D. degree in health systems research. The template for the application included 16 pages of questions and information requests that required responses. She anticipated producing a 50-page document that would address curriculum, faculty, staff, market demand, anticipated students, budgets, and justification for the degree program, among other details. She concentrated on this document on Thursdays. The proposal was going to include the comparative health systems component to make the program unique. This component would study health systems locally, nationally, and internationally over a three-year period. Kirwan offered that the survey courses would "see what works and what doesn't work" across a number of systems in various places. Recently her Thursdays had also included meetings with other administrative personnel in health care. Most recently her meeting with Steve Alder was particularly noted. He headed the public health program and also chaired the faculty senate, which had approval authority over the HSIR Ph.D. degree program. He was clearly in a position to block approval of HSIR's Ph.D. program. The conversation was reported as confirming that the new Ph.D. "needs to be a leading new program that's not taking away from anything else in the University."

Kim Bowman was also working on budgets for the Department and HSIR. Budgets were typically developed well in advance of each academic year, which begin on July 1, and budgets were needed earlier this year in light of the degree application and division formation processes.

Bowman was anticipating a February delivery of both a draft budget and an annual report. The annual report was a critical piece for HSIR because the annual report would need to provide the justification for anticipated budget increases that would be required to grow the program. In turn, Bowman viewed the budget itself as a narrative exercise rather than merely an accounting one. The budget would be prepared in substantial part by "reverse engineering" budgeted items after answering the question, "what do I want to be able to say in the annual report next February?" A critical aspect of the annual reporting would be to document the larger aims of the program and that "we're touching people all over the university, that we are helping produce unique work that is fundable . . . [by] helping produce money externally . . .[and] saving money internally."

Of course, HSIR organizers were also concerned about and directly engaged in both grant applications and research. Promising new research projects were in the queue for mentoring and some grant proposals were moving forward. But the growing impetus for the research work was generating revenue to justify HSIR's existence. Kim Bowman was certain that the program had a five-year funding commitment from the Dean's office, so the immediate issue was not survival; rather, the growing problem was maintaining credibility among stakeholders who had invested in HSIR. Bowman identified two points of uncertainty related to the long lead time required to identify and fund research: What was the length of the honeymoon period for the HSIR experiment? And what would the investors accept as a return on investment? The numbers suggested as measures of progress were $2 million in revenue from grants for research produced by HSIR faculty by the end of the second year and an additional $4 million to $7 million in grants obtained by others with the assistance of HSIR faculty in the same period.

These new matters requiring particular attention in the fall of 2014 were additive to the commitments already undertaken by HSIR organizers. Lauren Kirwan provided a good example of this point. Doing ongoing "routine" work was limited to partial days on Tuesdays and Thursdays. On Fridays, she was still working on research issues affecting the community clinics and other community outreach. Her efforts to facilitate best practices for researcher access to the community clinics "went very poorly," Kirwan conceded. An administrative group had served for some time as a venue for presenting research proposals implicating the community clinics, but that group didn't want to act in a role with responsibility to approve or monitor the research. She speculated that the group members either did not view themselves as having the power or were uncomfortable in asserting it. She also believed that the unfamiliarity of researchers with the operations and needs of the community clinics was continuing to provide a disconnect on the research side of the problem. The providers in the community clinics did not have any available time to take on the requirements of researchers in addition to their care duties.

Many of the priorities for action in the fall of 2014 related to the new organizational realities facing the HSIR Program and its organizers. HSIR was in the process of moving from the Dean's office to become a division in a new department. A chair of the department would be hired and would make decisions with impacts on the HSIR Program and its autonomy. Committee duties were growing, and administrative level coordination was replacing attention to researcher/clinician coordination that had been anticipated earlier. Kim Bowman recognized that HSIR was moving out of the start-up phase and in 18 months, at the time of an annual report, would likely be saying, "Okay, it's started up; now we need to run it." The one unchanging feature of HSIR's life—engaging in research and bringing in dollars to justify HSIR's existence—also was becoming driven as much by the necessities of organizational life as it was

by the prospect of transforming health systems. Then CMMI issued the TCPI announcement and

introduced the new possibility of organizing a well-funded Practice Transformation Network.

The stakes for a successful TCPI application were already apparent to HSIR organizers. But, as

Bowman said, "Win or lose, I have to write that report in February."

The Transforming Clinical Practices Initiative. The TCPI funding opportunity (U.S.

Department of Health and Human Services, 2014) was structured around a detailed phased

model of clinical practice transformation, complete with detailed descriptions of primary care

and specialist characteristics and required milestones for each phase. The phases and some key

components of each phase of care transformation consisted of:

- "Phase 1: Setting aims and developing basic capabilities," including training in

  quality improvement methods, tools, rapid cycle change methods, applying measures,

  and engaging in collaborative learning of "best practices and lessons learned"

  (pp. 17-18);

- "Phase 2: Reporting and using data to generate improvements," including acquiring

  "core capabilities in improving the health of populations through more effective

  systems of care," producing real time reports, meeting clinical, financial, and

  utilization goals, and implementing electronic health records (pp. 18-19);

- "Phase 3: Achieving aims of lower costs, better care, and better health," including

  meeting a significant list of specific quality and practice improvement measures

  (pp. 19-20);

- "Phase 4: Getting to benchmark status," including meeting additional practice quality

  measures (pp. 20-21); and

- "Phase 5: Practice has demonstrated capability to generate better care, better health at a lower cost," including sustaining prior improvements and developing "business acumen in . . . alternative payment models including . . . shared savings models with and without risk, various contracting arrangements that a practice might consider, and how to evaluate the pros and cost for the population they serve" (p. 21).

Each phase included increasing requirements for engagement with patients and families. The requirements for specialist practices included similar provisions but also included requirements relating to engagement as a member of multidisciplinary and interprofessional patient care teams.

As a PTN, a successful applicant would be required to engage in the following types of activities summarized by the initiative in support of clinical practice change: "Recruiting clinician practices and building strategic partnerships" (U.S. Department of Health and Human Services, 2014, p. 11-12); "serving as champions for continuous improvement, culture change, and patient and family engagement" (p. 12); "facilitating improved clinical practice management" (pp. 12-13); and "using quality measures and data for improvement" (p. 13).

The TCPI model was expressly formulated to stimulate, measure, and disseminate learning. The activities and goals of the primary and specialty practices included goal-driven rapid cycle learning. The multiple PTNs would be required to conduct initial assessments of a broad range of capabilities of the engaged practices, including "readiness for transformation" (U.S. Department of Health and Human Services, 2014, p. 17), and to "provide ongoing feedback on the progress toward goals" (p. 13). Ultimately, the initiative statement, emphasized in bolded language: "**Over time, PTNs and their participating practices will be expected to increasingly converge on the use of a common set of core measures and have an adaptable**

reporting system that can capture these measures" (p. 16). In addition, "lessons learned from other transformation collaboratives and improvement activities will inform the implementation and management of TCPI" (p. 23). Other measures would be used to evaluate the TCPI model itself (p. 16). Practice transformation in the TCPI model would be all about embedded learning from an integration of experiences reflected in lessons learned as well as in measures of progress.

The TCPI was not just about learning, but also about implementing direct cost reductions in the delivery of diagnosis and treatment for patients covered by Medicare and Medicaid, including underserved populations. As one participant in the organizing meeting of University of Utah Health Care leaders observed, the initiative is about "spending less [for health care] today, not just prevention."

Pursuing the Transforming Clinical Practice Initiative. Dean Vivian Lee made an early determination that the University of Utah should participate in the TCPI. Dr. Hess had made a preliminary assessment of the scope of the initiative and believed the University of Utah could successfully apply and participate. Dr. Hess made an early approach to partner with Intermountain Health Care on a single proposal and learned that IHC was going to file a competing proposal. The HSIR team put an outline of the project together before the organizing meeting for the TCPI opportunity. Kim Bowman described the meeting as "very exciting" and indicative of "initial buy-in." They had observed a lot of people who "lived in the silos" who were willing to "come to one big table and to talk about a large project together." Bowman credited this result to the support of Dean Lee, who "lights fires under us," and Dr. Hess' bridge-building between multiple silos. He also credited the success of the meeting to Lauren Kirwan, who had personally built relationships throughout the leadership in University Health Care and was able to get the right people into the room. Following that meeting, the HSIR team spent an

additional half day brainstorming about the conditions and outcomes of success for participating in the Transforming Clinical Practices Initiative. Their key topic was "What does a virtuous cycle look like for this project?"

In the early stages of this project planning, certain outcomes could be put on a project schedule, but the details were missing. As Kim Bowman noted, it was an "early stage where we're still setting the ground for what we've got to do next." One big missing piece of information related to data capabilities: "We're hoping we get some critical answers from our data expert about what is and is not possible." That and other questions were pursued so that the HSIR team could "figure out what the playing field looks like" by the end of the first week. Week two would involve putting together a more specific game plan, complete with subcommittee assignments and deadlines. Additional deadlines would be imposed for the work of pulling the various pieces together and "one-voicing" the document. All this was due in just six weeks, in early January, in the middle of the academic holidays.

Other pieces of the puzzle to organizing the TCPI proposal were discussed at the organizational meeting. Demonstrated and growing process improvement expertise could be applied and taught to primary care physicians and specialists. The ValueU educational initiative was getting off the ground and would offer some tools that could be leveraged in that effort. The Value Driven Outcomes technologies would be especially pertinent to some of the data and cost savings requirements of the TCPI. Existing community outreach efforts could be leveraged. An expansion of existing tele-health capabilities was identified as an essential component. In short, existing initiatives within University of Utah Health Care could be leveraged to meet some of the technical requirements of the initiative. Central to any application would be the Care by Design primary care model developed under the leadership of Dr. Magill a decade earlier and the

academic teaching and research capabilities embedded in an academic medical center. Dr. Hess believed the presence of an academically-oriented PTN in the national mix would be a strong feature of Utah's TCPI proposal.

The central challenge presented by the TCPI was organizing and improving the practices of primary and specialty care physicians. As noted by one meeting participant, this was an opportunity to create a "community of care" for patients. The initiative particularly targeted underserved patient populations, so the application needed to structure a particular set of practices together. This was not hospital-based work. The University of Utah Medical Group represented a strong contingent of specialty care providers and some primary care physicians, but additional primary care practices would need to be engaged. The network of the University of Utah Health Plans provided a logical target base of over 2,000 physicians. The need to involve other insurers outside of the IHC system was discussed, because the University's health plans only covered 50,000 lives. The TCPI announcement contemplated that 75% of the physicians would ultimately "participate in incentive programs and practice models that reward value" (p. 7). This language signaled a requirement that participants would be weaned from dependence on fee-for-service reimbursement. One comment at the meeting noted that the "practices which sign up will take the risk of the [reimbursement] system moving." Signing up was a bet that reimbursements would move toward bundled and incentive payment approaches. But as one other commentator at the meeting noted, "the 75% test is not achievable without payer and employer shifts." In the fragmented world of U.S. health care, non-federal reimbursement was still dictated by employer preferences and private insurance models favoring traditional, service-based reimbursement. Fragmented care delivery was reinforced by the fragmented system of

private insurance, which favors patient and market choice at the expense of efficiency and coordinated patient care.

Comments at the meeting also emphasized that University of Utah Health Care was also making a bet that payment models would be changing. The medical group was largely oriented to surgery and secondary specialties.[72] One estimate offered in the room was that primary care providers would be minimally impacted by different payment models, but the specialists could risk 20% of their incomes operating under new payment models. Another meeting participant noted that the implied TCPI reimbursement of $4,400 per enrolled physician was not a sufficient incentive to participate unless participation aligned with larger institutional priorities. What would be needed to make up lost revenues from specialty care was a substantial increase in market share.

These meeting comments suggested that what was at stake in participating in the TCPI was not just receiving one-time grant money, but committing to significantly impact the business model for University of Utah Health Care. One leader confirmed that University of Utah Health Care would need to operate under two business models—a population-based model and a model based on unique tertiary and quaternary specialty revenue.[73] Expansion of population-based care, with its presumed emphasis on bundled and incentive payment models oriented to patient care cycles, would be costly but could be funded by the high-end specialty revenues. In transition, these tertiary and quaternary revenue streams could not be placed at risk. The growth

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[72] Secondary specialists and surgeons usually receive referrals from primary care or other specialist physicians.

[73] These services are highly specialized, require expensive technology, and are usually found in regional and academic medical centers.

of population-based care would also provide an opportunity to integrate practitioners around the larger community, avoid duplicative services, and enhance patient experience and care. The discussion envisioned an increase of University of Utah Health Plans to serve 400,000 to 500,000 lives over time to make sense of the population-based business model because alignment can only be achieved through the health plans. But it was also noted that ultimately the savings to the overall health system were likely to come from a reduction in tertiary services—at the tip of the services pyramid. That was where new technologies were driving up the costs of medical treatment dramatically. University of Utah Health Care would need to remain flexible to adopt different business models depending on the situation. As one leader noted, such an approach would be "very messy, but we're an example of what might work for the rest of the country."

While the discussion among University of Utah Health Care leaders at least posed the question of whether the TCPI should be pursued, Kim Bowman described the two questions that were being debated in the same conversation—"do we want to do this?" and "do we have a choice?" Given the changes that were already being driven by the federal government, the "no-choice" option was illustrated by Bowman's question, "What end of the train do we want to be on, on board and behind it or right in front of it?" He viewed the key objective of organizing a response to the TCPI as keeping all the specialty providers on board. While initial buy-in was in place, he commented that "once we get into the details of what this thing looks like, it's possible to lose that buy-in. . . .We still have to maintain their support all the way through." Central to maintaining buy-in would be to identify the key stakeholders who had the most to lose and keep them engaged in helping to refine the specific objectives of participating in the TCPI.

HSIR organizers also had to start thinking forward about how a successful TCPI proposal might be implemented. After all, answers to the data questions might be provided and the early buy-in of a broad coalition of health care leaders might be maintained even after some of the details and implications were further developed. At this early point in the process, only one thing was clear. It made no sense to add capabilities in advance of being selected to participate in the initiative, and everybody who would be contributing to the proposal was already too busy. Bowman couldn't even conceive of having enough time to hire a project manager for a winning proposal. He suggested that a successful TCPI initiative would be implemented in accordance with a simple principle: "We're going to do triple duty for a little while, while we figure it out."

Dr. Michael Magill, chair of the Department of Family and Preventive Medicine, paraphrased some testimony before Congress by a senior corporate executive concerned with health care costs. Questioned about what was essential to fix health care in this country, the executive purportedly responded, "You have to fix primary care." When asked for his second priority, the executive replied, "If you don't fix primary care, there is nothing else." The TCPI proposed a particular model for fixing primary care that would also have significant implications for all of the practices within University of Utah Health Care and the continuing viability of its business models. Another leader within the hospital reflected the general attitude of University leadership toward the changes facing health care stimulated by changes in federal reimbursement policies. He was optimistic because there would be many opportunities to experiment and innovate:

> It creates complexity in how you do that but at least it helps you start asking the right questions and trying to figure out how you learn lessons so that as we continue to change that we're better and better poised to embrace that change.

High idealism and low idealism; high rhetoric and high execution. My interview

with Dr. Rachel Hess in November occurred after the larger TCPI organizing meeting. She had

recently read a *New York Times* op-ed piece by David Brooks (2014) discussing high idealism

and low idealism, which provided her theme for the interview. She recounted Brooks as

postulating that high idealism is reflected in the "lofty goals" set by politicians, but that real

governance is "a low idealism kind of place" where getting things done is difficult, and

disappointments arise. She offered, "I would almost disagree with [idealism] as a principle

because I would actually say 'high rhetoric versus high execution.'" She continued, "running an

organization should be kind of boring." She clarified the analogy to medicine and the organizing

of the HSIR Program:

> [In] medicine, there are people who spend a lot of time talking about what's going to
> happen. And I think we were starting to fall into that space a little bit. I think we're
> getting a lot of stuff done, but I think that there's a time . . . to set forward an agenda, and
> there's a time to get that agenda accomplished. And we're really . . . moving into the
> accomplish-the-agenda-part of things.

She added a cautionary note, drawing an additional analogy to funded grants. "Sometimes you

look at . . . what people get done in their grants and they don't get done 90% of what they said

they were going to get done. . . . But they talk about it really well." Her implication was that the

world of governance and high execution was a low idealism place with obstacles to making

progress.

Dr. Hess believed that the agenda for HSIR was largely set. She had outlined the big

ticket items in a presentation to the Research Advisory Council. The list included redesigning

the PCORI interest group, setting up a grant support process, building mentoring and consulting

capacity, figuring out the website project, setting up an innovation challenge, and adding faculty.

These had been the core functions of HSIR identified a month earlier. She also offered that the

list included "some of the things that we really need to get a handle on in order to . . . make the kinds of work that HSIR needs to sponsor functional." Two specific examples were researcher access to data and researcher access to the community clinics. Dr. Hess had been appointed to chair the Research and Analytics Committee, which was charged to develop procedures to access the Electronic Data Warehouse and Value Driven Outcomes data—a function she described as "governance." She seemed to question her appointment, but she added a probable explanation: "I'm not an informatician, and I am an MD. And that makes me, in some strange way, less . . . that makes me, in some strange way more neutral, maybe." She added, "'non-threatening' might be the other word I would use." She was very positive about the implications of being in control of that data.

The community clinic access issue was somewhat more frustrating. Dr. Hess offered her perspectives on the work that Lauren Kirwan had been undertaking with the University of Utah Primary Care Research Network (UUPCRN), a committee that reviewed all research proposals relating to primary care. Dr. Hess recognized the group as a carryover from a much earlier federally sponsored initiative designed to organize research in primary care settings. The idea was to push that committee into a new role of facilitating and regulating access to the community clinics and primary care providers—another "governance" function. Kirwan had been working with the primary care providers to identify best practices that assured research would be appropriate to their needs and not intrusive on patient or provider time; this committee was a possible mechanism to implement such practices. Dr. Hess commented that "we need to move people in the direction of taking ownership. . . . It's asking them to take on programmatic responsibility . . . and sometimes people just don't want it." "They may not want the power and responsibility," she added. She identified two options, either put a new committee in place or

"view this as a mentorship and organizational capacity development opportunity," which was her preference. But she was unclear about how to achieve that development: "I don't know if it's training or if it's empowering." She still preferred that option to appointing a different group, which was "going to be bunch of people who are already doing way too much anyway."

Research in the community clinics was part of larger patterns of issues implicating organizational politics that HSIR organizers were confronting, and that held the potential of derailing HSIR's mission:

> One of our missions is to get . . . research within the community. . . .We need to get these structures set up. We need to get data access fixed. We need to get VDO access fixed. We need to get community clinics access fixed. We need to liaison with the hospital for research and to [get] the hospital's research agenda fixed. . . .That's the infrastructure that needs to be in place . . . and I don't think I quite envisioned six months ago how much infrastructure we were going to try to build with an organization because we can't *just* build the infrastructure.

The specific concern with the UUPCRN was the power differential that existed between the well-established researchers and the committee members, predominately junior female faculty. Dr. Hess believed she had the political capital to assure that senior leadership would not undercut the work of the committee if it were to exercise gatekeeping power. Dr. Hess noted that "I can't give them the power," but she could bolster the credibility of the committee and their decisions with senior UUHC leadership and others. "If we can get them to charter themselves to really do the hard things, [senior] leadership will be okay with it."

The community clinics situation was exemplary of a broader pattern. In the absence of clear processes, the default action taken by someone with any grievance had become complaining to Dean Lee, David Entwistle, and the other senior leaders of University of Utah Health Care. This pattern certainly preceded the arrival of Dr. Hess and likely all of the current senior leadership of the institution. One interview participant observed that all of the health

sciences and health care at Utah had been operated largely at the department level as recently as a decade earlier. The departmental silos even prepared and administered their own budgets at one point, an indication of the strong political autonomy of departments and their leaders.

Research coordination was playing out differently on the hospital side in part because of the Pop-Ops group, which was attempting to address governance. Dr. Hess had personally spent a lot of time building bridges with hospital-based providers, and viewed the Pop-Ops group as taking responsibility if appropriate research could not move forward. Thus, while HSIR would have the responsibility to influence the research agenda and assist with research and grant funding projects, hospital leaders also had responsibility and "would take the blame" if things were to go wrong.

Dr. Hess drew a connection between data and research access problems and a source of dynamic influence other than politics: growth.

> Part of it is that . . . you're in an organization that still thinks of itself as . . . relatively small and nimble. 'We can remember it all. We can keep it all in our head.' And that's great. That makes us super flexible on a number of levels, but we've got to grow up.

On the data access front, that growing up would be reflected in developing a common data dictionary of terms for the entire enterprise that was contributed to by everyone from the different data repository silos. "But . . . all these things have to happen and people have been talking about them for years," she noted in frustration. "It's . . . taking people who were here during the . . . more freewheeling start-up days and convincing them that they now work for a large company, and that best practices need to happen." Dr. Hess saw common solutions to the data and community clinic access problems—at the level of the professionals, the solution involved getting the people involved to know what they need to do and getting everyone on board. At the organizational level, the solution involved moving from an "organization that was

small enough to pull it off to an organization that starts to see where the problems are." "We know where the problems are," she added, and "now we just need to fix them." Her assessment of the current situation facing HSIR organizers was that "until we get this stuff solved, we can't move our research agenda forward."

Dr. Hess acknowledged that "I feel like we're in the low idealism phase," but also that "we've identified . . . the critical paths that have to be in place to get the idealism going." She recognized the TCPI grant opportunity was "totally a high-idealism thing," although she also commented that "I don't think that I've paid enough attention to it to be truly panicked yet." She pointed to the list of TCPI grant application tasks outlined in small erasable marker notes that filled the windows to her office, commenting "we're going into execution, and I think that if we get those things executed right, we can go back to a rhetorical phase." She also shared that she could not be an idealist with "30 things going on in [her] brain. You need five, you can't accomplish 30."

Although mired in the execution of operational details, Dr. Hess had not lost sight of the vision underlying HSIR's work: "I basically want to take us back to . . . this idea . . . that we learn from everything." She idealistically envisioned the time when

> the research-clinical collaborations will just [operate] seamlessly enough that the researchers' ideas can get executed in practice and the clinicians ideas can get studied, and that nobody says that they have neither the time nor the resources to do that. The researchers have the resources in the practices, and the clinicians have the resources in the researchers.

Dr. Hess attributed this learning focus to Dean Vivian Lee, whom she described as "one of the rare people who can see the details without getting bogged down in them." Dr. Hess believed that Dean Lee's primary objective was to build learning health system. Dean Lee had reflected on the pace of change in my interview with her, commenting, "Whenever you're talking about

change, you're talking about changing people's behaviors, changing culture, and it's huge. Change is hard." Dean Lee saw HSIR as ultimately contributing to change as part of a "virtuous cycle" because the work of HSIR would "attract more and more people who want to be a part of change, who have great ideas," and who say, "Finally I can do what I want to do, . . . I can fix these problems that apply to my life, I can make the health system better in my field." Dean Lee concluded her interview by asserting, "We're going to . . . get on this virtuous cycle." That ultimate purpose of the HSIR program and its idealistic roots would not be lost in the details of the current problems and the realism of current operations.

I sought to summarize with Dr. Hess what she thought were the essential themes for HSIR in the short term. I suggested, perhaps with too much idealism, "access, access, access, bridging, bridging, bridging . . ." She interrupted my offer with "governance, governance, governance."

Epilogue. The deadline to file TCPI proposals was extended to early February of 2015, and the University of Utah proposed to create the Utah Area Collaborative Transformation Network (Utah ACTN) with 2,300 primary and specialty care providers, representing about 40% of the clinicians in Utah (L. J. Kirwan, personal communication, February 10, 2015). If successful, 728 additional primary care physicians would need to be recruited, but all 1,300 members of the University of Utah Medical Group were committed. Drs. Michael Magill and Rachel Hess would be the principal investigators. The proposal envisioned a virtuous cycle of learning involving committed clinicians as learners, use of data, assessment of progress and needs, training, implementing tools including interactive learning, practice change, assessing outcomes of practice change and more learning from results by clinicians. The proposal

envisioned grant funding of $4,670 per clinician. University of Utah Health Care ultimately had

concluded that the TCPI application aligned with its larger institutional goals.

Developing a Narrative Understanding of Practical Inquiry

The "Building a Learning Health System" narrative is a story of collective practical inquiry: Organizers of the Health Systems Innovation and Research Program (HSIR) worked to refine practical problems and test possible solutions as they coped with shifting and uncertain questions, issues, priorities, constraints, and opportunities. It is also a story of organizing: The organizers established new relations and collective action oriented toward transforming health systems delivery by enhancing health services innovation and research. The story involves the organizational lives of professionals, an aspect of professional practice that lies uncomfortably beyond the boundaries of their specialized learning and technical expertise. Organizing professionals and collective work in health care is like the quality improvement work in care delivery that HSIR organizers sought to amply: Organizing is, borrowing the words of Dr. Rachel C. Hess, "messy" because there are too many variables to account for and because "this is all moving forward, right?"

"Building a Learning Health System" is a composite narrative substantially reflecting the actions, issues, ideas, and even the words of HSIR organizers and other leaders within University of Utah Health Care. Because their interviews were largely unstructured, interview participants talked about what mattered to them personally. The interviews identified the actions, issues, and other features of the situation that were meaningful and significant to an understanding of their personal and collective work relating broadly to health systems innovation and health services research. The story also includes references to actions, issues, ideas, and words recorded in my notes of meetings I attended, unrecorded interviews, and pertinent documents I reviewed, which were also available to the organizers. I crafted the composite narrative to preserve multiple perspectives and different points of emphasis on the matters interview participants presented.

A narrative grounded in the actions, issues, ideas and words of those involved in envisioning and creating the HSIR Program is a an account that reflects the within-*practice* stance presented in the introduction rather than an outside view. "Building a Learning Health System" incorporates the following features of a within-*practice* stance:

- The narrative is a performative account of the work of organizers that emphasizes their doings and sayings—their performances—and their observations and readings of their situations—their practical interpretations. This narrative contrasts with a representational approach that would have emphasized my conceptual account of what I had concluded was going on. Their performances and practical interpretations demonstrated their practical competence in developing and testing trajectories of collective action toward compelling collective possibilities they have identified.

- "Building a Learning Health System" presents issues and conflicts that arose at the edges of the traditional professional practices of clinicians who were facing increased pressure to identify and implement quality improvements using appropriate research methods. Similarly, HSIR's story also implicated changing the work of researchers to collaborate with clinicians and publish matters with impact on health care delivery. Specific conflicts about access to databases and community clinics grew in importance to HSIR organizers as obstacles to their work that needed to be corrected through improved governance.

- Central to the HSIR story are the issues and potential conflicts created by the activities of the organizers as they worked to establish new relations and working practices and the HSIR Program's place within University of Utah Health Care. These new relations and working practices would become defining features of

HSIR's *practice*, a complex of HSIR relations as also presented in the Introduction. By the fall of 2014, HSIR organizers conceived that the developing HSIR *practice* would include:

- o identifying and studying quality improvement projects with high impact potential that could be facilitated through publication of research;

- o mentoring junior faculty and clinicians;

- o identifying, facilitating applications for, and administering grants;

- o providing research methods and statistical support for projects; and

- o facilitating collaboration among investigators.

These relations and working practices also engaged with other well-established *practice* complexes—those identified by the persistent references to other academic and clinical departments as silos. Establishing new relations and engaging with others within the complexes of such other *practices* involved the "borrowing" of resources and establishing new connections among potential collaborators from those silos. Such work also triggered "landmine" reactions from time-to-time and generated the necessary response of HSIR organizers, in the words of Dr. Hess, to "keep everyone safe and whole," and to be "deliberate enough to not reinforce silos."

- HSIR's story is a dynamic and emergent account. Interview participants identified specific features within University of Utah Health Care that created resistance to change. These features included lack of clear access rules for databases and research in the community clinics, fragmented database structures and languages, and the absence of tools to identify common research interests and possible collaborators. The narrative also identifies features within University of Utah Health Care that were

facilitating change, which included ongoing lean process improvements and Value Driven Outcomes initiatives and the unqualified emphasis of institutional leadership toward transforming health care delivery. The narrative illustrates how changing organizational priorities, new organizational responsibilities, and other emerging features of the situation, such as the Transforming Clinical Practice Initiative (TCPI) opportunity, impacted the organizing activities of HSIR organizers and HSIR's possibilities. The TCPI was particularly notable because the project focused on changing primary and specialist practices rather than health services research. HSIR's practice would need to adapt to any activities and relations required of the HSIR organizers within a practice transformation network to be formed as contemplated by the TCPI even though such activities would likely be outside of the original charge to HSIR.

- "Building a Learning Health System" is also a cultural account of *practice* as that term was described in the Introduction. Because my interview protocol was substantially unstructured and allowed the topics to be set by interview participants, the matters they covered were matters they identified as meaningful and significant. Meaning and significance are collective creations of cultures and are communicated through words, stories, and other symbols shared within the culture. The interview accounts were marked by acknowledged gaps and issues in the performance of health care services and the cultural imperative to fix identified problems, improve care quality, and improve the professional lives of clinicians. At the same time, broader purposes were articulated including building a learning health system, transforming the health care system, and providing "the right care for every patient." A

within-*practice* stance put these larger possibilities in the context of identified ground-level activities of health care professionals rather than theory or strategy. HSIR organizers and other health care leaders at Utah as well as clinicians were responding to the gaps and issues in health care with specific projects and initiatives that were ideas in progress toward those larger reform possibilities. Quality improvements, Value Driven Outcomes, health services research, the HSIR Program, and the activities of HSIR organizers are all examples of ideas in progress toward culturally recognized collective outcomes.

- "Building a Learning Health System" also presents the need to change culture by developing new ways of working together collectively and making new meanings. The database and community clinic access issues were driven as much by the absence of common understandings and language as by the absence of common rules. The transition issues between inpatient and outpatient clinicians presented cultural issues of translation as much as technical issues of coordinating medical instructions and records. Building cooperation among mission-based silos risked triggering a clash of cultural imperatives.

"Building a Learning Health System" speaks for itself as an account of practical inquiry and organizing under conditions of uncertainty. Because that narrative is presented from a within-*practice* stance, the account documents in reasonable detail the key features of the situation recognized by HSIR organizers as significant, the meaning of those features to their work, and the responses they made or contemplated. My interpretation of what they encountered and the priorities for action they established would add very little to their practical interpretations of the situation that are already evident in the narrative.
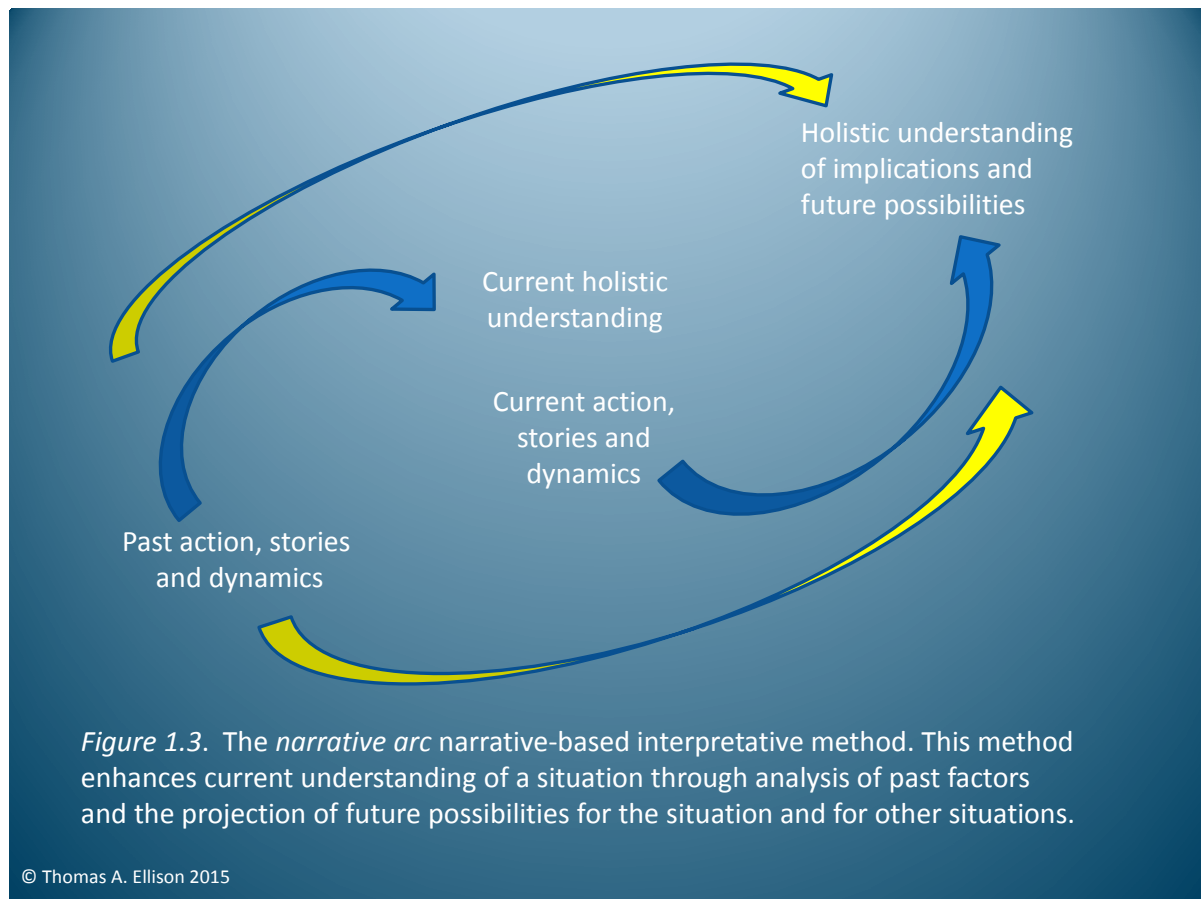
Consistent with the competence of reading presented in the Introduction based on the work of Ricoeur (1981), HSIR organizers may read the narrative to inform their future actions and understandings about the future possibilities for the HSIR Program. The narrative is also available to be read by others for application to their own situations. In addition to presenting a narrative about practical inquiry and organizing, "Building a Learning Health System" presents extensive commentaries of interview and meeting participants about the issues facing health care and clinicians and the potential role of health services research in contributing to health care delivery change. The weaving of those commentaries within HSIR's organizing story offers an opportunity for a reading that considers health care transformation issues and strategies in the context of a specific situation and specific efforts to organize impactful collective action. The situated detail available in a narrative allows other readers to compare and contrast their situations, anticipate features of their situations that may hinder or facilitate change strategies, and project the possibilities offered by their respective situations for their ongoing work.

The practice study methodology also envisions that the HSIR organizing narrative may be read for implications both for the HSIR Program and for other situations. In the balance of this chapter, I will draw these implications by applying a narrative-based analytic and interpretive approach contemplated by Ricoeur (1981) and described in the methodology chapter. In the final chapter, I will also evaluate the broader implications of the practice study methodology and this study of HSIR organizing, including for leadership and change.

Narrative Understanding and Explanation

As presented in my discussion of the practice study methodology, holistic understandings of a situation may be developed through a narrative reading that follows the past/present/future structure of a narrative arc. As presented in Figure 1.3, the analysis of past actions and ongoing

dynamic features of a situation contribute to a current understanding of what is going on, but a deeper analysis of the current situation may also contribute to an understanding of future implications and possibilities. I will start my interpretative work with an overview of the "Building a Learning Health System" narrative in terms of its structure and themes. These themes present a holistic understanding of the courses of action and the larger possibilities that HSIR organizers were pursuing. I will then provide a more in-depth analysis of the cultural, dynamic, and narrative resources presented in the narrative and how they are linked together with narrative connections to create a narrative-based explanation and expanded understanding of the HSIR Program, its future possibilities and its implications for transforming health care systems.

Figure 1.3. The *narrative arc* narrative-based interpretative method. This method enhances current understanding of a situation through analysis of past factors and the projection of future possibilities for the situation and for other situations.

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Narrative structure and themes. The HSIR narrative and the interview accounts of HSIR organizers reflect similar features. The accounts identified future possibilities that may be achieved through collective action. These possible outcomes of action varied in both the scale of potential impacts they represented and the time frames for their achievement. Making connections among clinicians and researchers, pursuing identified grant opportunities, building research design and biostatistics capabilities were examples of shorter-term objectives; resolving access to data and the community clinics, building a portfolio of grant-funded research projects, and launching a health systems research degree program were examples of medium-term achievements that could substantially increase the scale of HSIR influence. But even larger possibilities of the HSIR Program oriented the actions of the HSIR organizers. These possibilities were variously (and vaguely) described in terms of building a learning health system, creating virtuous cycles, developing University of Utah Health Care into a laboratory for testing care improvement ideas, and impacting health care delivery nationally. Such possibilities were suggested in the HSIR Program's name—changing health systems by innovating care delivery and conducting health systems research.

The HSIR narrative and interview accounts also persistently identified issues, questions, and gaps in health care performances and outcomes and the ongoing work of clinicians and researchers. The early work of the HSIR organizers was dominated by these issues, questions, and gaps. The breakfast, lunch and dinner (BLD) sessions provided a long list of questions posed by BLD participants and potential problems to be addressed by the HSIR Program. Further, University of Utah Health Care's symposium "Building a Health System of the Future" posed additional questions and challenges with implications for HSIR Program activities. These issues and questions were pieces of the current situations of the interview and meeting

participants and were reflected in stories they told and comments they made. The work of the practical inquiry of HSIR organizers was to take the pieces of a situation that were indeterminate and change them so as make the situation more holistically understandable and actionable (Dewey, 1938).

Further, the HSIR narrative confirmed that the work of HSIR organizers was itself uncertain. The organizers knew they needed to connect collaborators, pursue grants, identify high-impact quality improvement work, and provide research process support; but no specific paths or activities were predetermined or assured of success. HSIR organizers shifted the relative priorities of their activities over time based on changing features of the situation, emerging matters, and discoveries from their practical interactions with others. HSIR organizers recognized that their activities were provisional and subject to re-evaluation. HSIR organizers sought to discover the expectations of others for the work of HSIR and the success factors they would pursue and then to brainstorm the concrete steps that were necessary to progress toward such achievements. These success factors fell into two broad categories: success factors external to HSIR concerning innovation, health systems research, health systems transformation, and solving problems of stakeholders; and success factors relating to the internal performance and achievements of the HSIR Program itself. In addition, HSIR organizers evaluated and restructured their own work. If an idea they pursued was not achieving its intended outcomes, "let's figure out why it didn't work, post mortem it, and then figure out how to make it work," as proposed by Dr. Hess. Prioritizing HSIR actions therefore followed a certain narrative logic: HSIR organizers sought to piece together combinations of problems, ideas for possible solutions, available resources, and other activities that would make sense together as having impact in

building, creating, integrating, connecting, and moving toward larger, holistic possibilities of the HSIR Program and health care delivery change.

More specifically, HSIR organizers initially sought to identify gaps in performances, research proposals, and relations with possible research partners in order to compile ideas in progress. The narrative logic followed the "ideas, design, implement, evaluate, and disseminate" research model presented by Dr. Hess at the BLD sessions: Such ideas would generate opportunities for HSIR to design research, influence how research was implemented, assist in evaluating results, and disseminate those results that would be impactful to health care delivery through publication. The stated institutional objective was to become a learning health system, but the larger objective was to transform health systems more broadly. The collective action logic of the HSIR organizers reflected a pieces-to-whole orientation to future possibilities that is depicted as shown in Figure 5.1. As suggested by that figure, larger scale outcomes could be constructed through virtuous cycles as research revealed more gaps in performances, contributed to further ideas in progress, and stimulated new impactful QI work that could be implemented and scaled. As Figure 5.1 demonstrates, the logic of collective action recognizes the importance of building short term, middle term, and longer tern possibilities with increasing scales of impact. While short term objectives with limited scale may be specifically described and planned for to some degree, intermediate and longer term possibilities and the activities to create them may be only provisionally identified as ideas and pursued and adjusted based on discoveries of what has and has not worked.

Figure 5.1 presents a substantial simplification of the relationship of features of the situation and outcomes anticipated by HSIR organizers and the narrative structure that would

make sense of HSIR's activities. The first interview of Dr. Hess provided a number of specific examples of building larger, holistic possibilities from the pieces of prior or existing conditions.

Figure 5.1. The progressive, iterative narrative logic of HSIR organizing activities.

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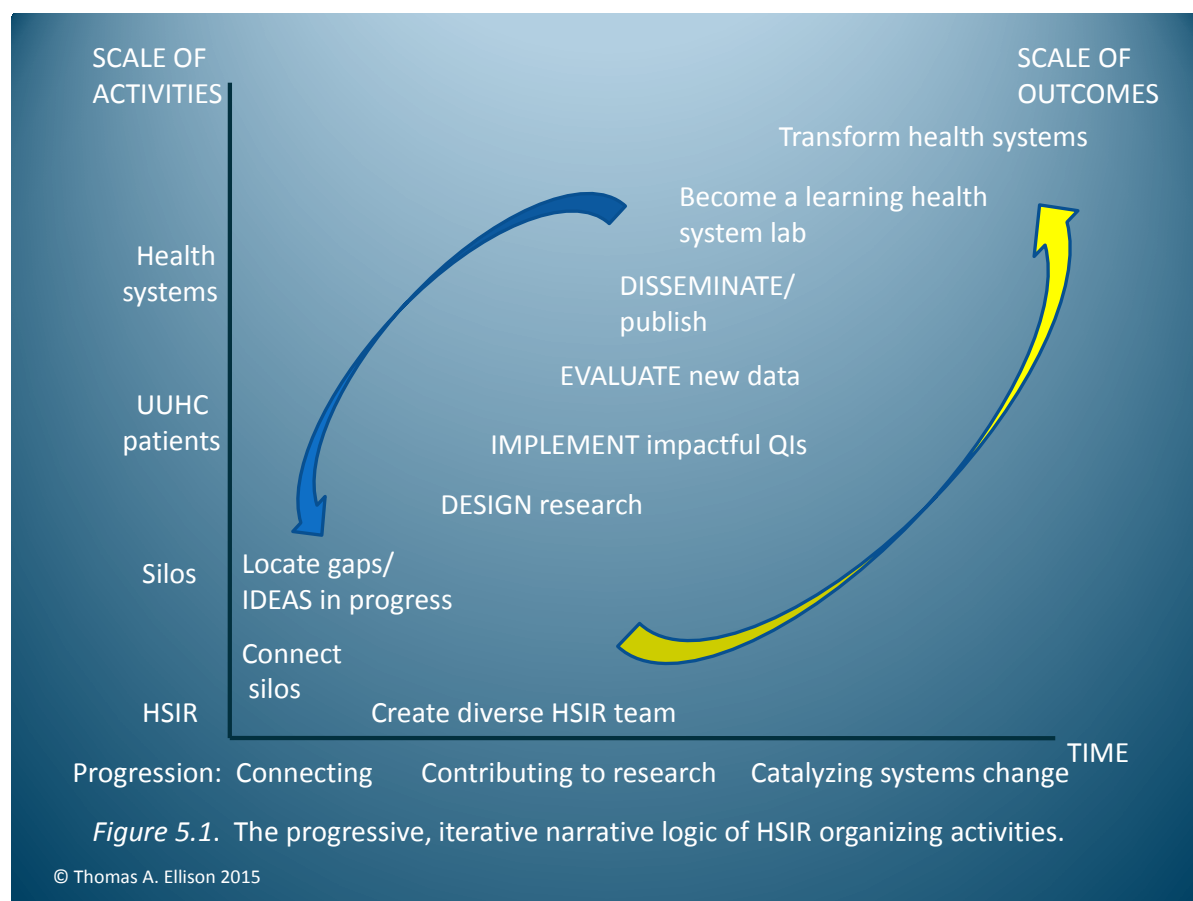
She planned to hire professionals with diverse perspectives in order to build an HSIR team that would reach common ground on issues. She saw the HSIR Program as one response to a health care systems and resources that were fragmented by the separate interests of medical and scientific silos. She believed better patient care would be obtained by utilizing broader measures of patient outcomes rather than ones just focusing on treatment success. She also recognized that central functions of HSIR included combining clinical and research resources across silos, connecting separate databases, and otherwise integrating knowledge. She wondered whether such efforts might implicate culture. As illustrated by "Building a Learning Health System," real life narratives contain important details.

Figure 5.2. Narrative connections in HSIR's organizing story. The logic of collective TIME action in HSIR's organizing story includes narrative connections (represented by lines and arrows) among people, actions, and outcomes that build toward system impact.
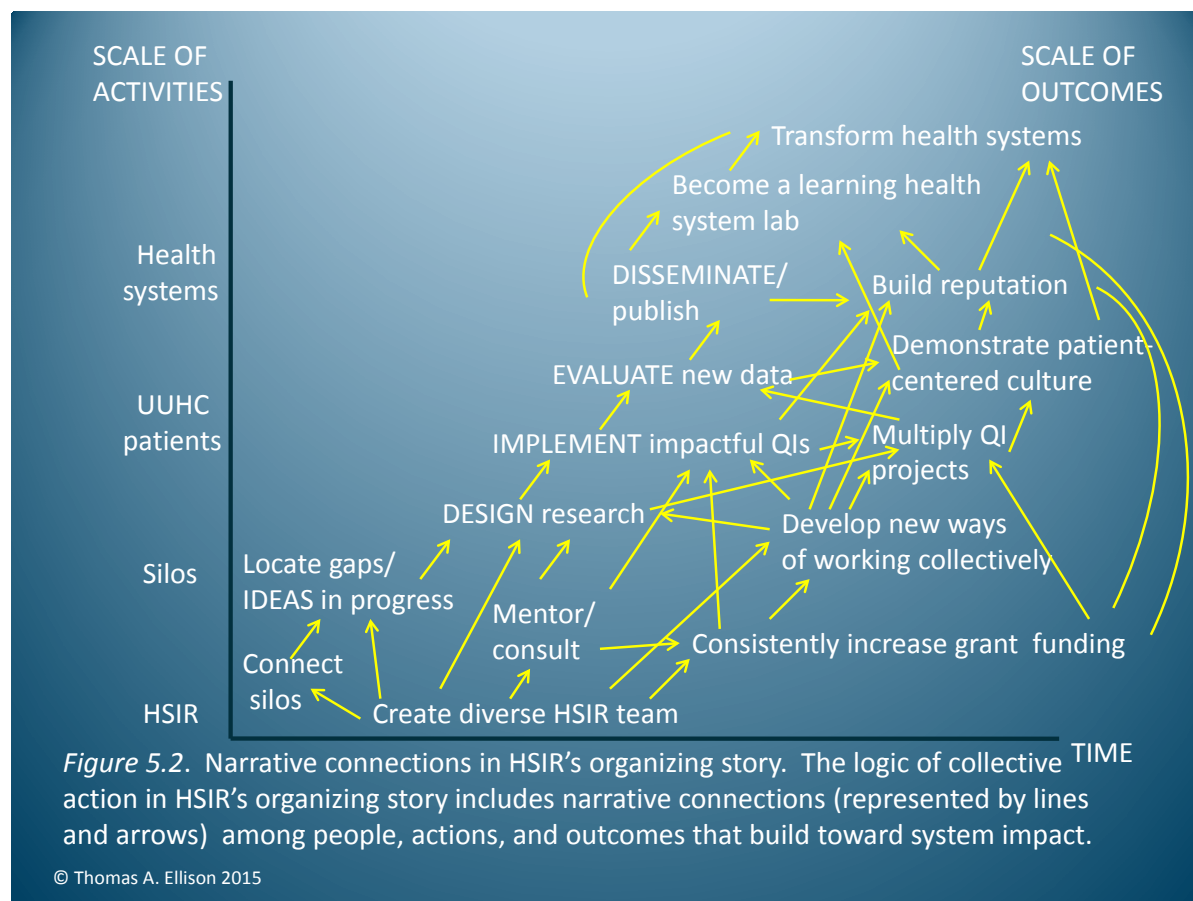
Figure 5.2 reflects a more realistic depiction of the creative combining and building of

HSIR activities. The activities would progress toward interim achievements that in turn would

combine to make progress toward possible outcomes with greater scale over time. Figure 5.2

also depicts a creative, narrative configuring together of the actors, actions, and scenes into a

storyline of organizing toward larger future possibilities for transforming health care. Each of

the arrows on Figure 5.2 can be thought of as representing a plotted narrative connection among

the various actors, actions, and outcomes that are possible features of HSIR's situation. While

Figure 5.2 is representational, very real relational connections would be created and documented

as HSIR organizers made new relations, engaged in new interactions, and published research

over time. In turn, the logic of collective action suggests that these episodes would converge

toward a narrative unity in the commitments of University of Utah Health Care to build a learning health system and transform health care delivery.

The holistic understanding of "Building a Learning Health System" may also be enhanced by exploring themes from some of the conceptual tools identified earlier in the literature review. The first part of the literature review was organized by the phrase *practice* as professionals organizing an emerging collective culture. The HSIR narrative may also be understood holistically as a story of *practice* creation and conflict, a story of professionals in academic medicine, a story of organizing and organizational becoming in University of Utah Health Care, a story of emergence and complexity in health care, a story of collective action, relational construction, power, and organizational learning, and a story of culture change. These are not alternative characterizations of one story; "Building a Learning Health System" in fact contains plotlines and scenes from many ongoing stories. Each of these stories reflects the pieces-to-whole narrative structure identified in Figures 5.1 and 5.2.

As an example, in the story of professional life proposed by Dr. Hess, clinical and research professionals would impact each other and create effective partnerships; in turn, as a story of organizational becoming, the independent silos containing those professionals would become sufficiently integrated through quality improvement work and research into a learning health system through virtuous cycles of learning and improvement. Over time new connections among clinicians and researchers also would create new ways of working collectively and new matters of shared meaning and significance, producing culture change. These stories share certain common narrative features—central actors represented by the HSIR organizers and University of Utah Health Care leaders and plots reflecting specific instances of innovation, grant making, and health systems research would combine and contribute to more significant,

larger-scale future possibilities, including organizational change, health care delivery change, and health systems change.

As noted in literature review discussion of narrative theories, actors in these stories would strive to construct and coordinate their holistic understandings in order to create an overall narrative unity in which all of these stories can make sense together. The stories with innovation and change themes also coexist with stories of successful ongoing clinical and research practice methods in the various silos of academic medicine. Dr. Hess' aspiration to leverage the knowledge resources of the silos while leaving them "safe and whole," as well as the suggestions that the HSIR Program would develop a unique academic contribution within a health systems research Ph.D. program, are particularly salient examples of practical understandings that resonate with narrative unity across the potentially conflicting storylines of academic medicine: "Building a Learning Health System" suggested that narrative unity could be achieved in health care at Utah by pursuing and balancing the following strategies:

- developing and preserving the values, commitments, and unique contributions of specialty practices;

- making changes to address performance gaps and implement accepted care improvements, including with health systems research methods; and

- increasing value of the entire enterprise by improving with respect to new measures of value and outcomes important to patients across all such practices.

The anticipation of these accomplishments and the achievement of narrative unity was encompassed within HSIR's tag line: "the right care for every patient."

In summary, a holistic understanding of the story of HSIR organizing may be enhanced by considering the multiple storylines in play within University of Utah Health Care and their

implications for continuity in the professional lives of clinicians and researchers and the change

required to improve value and reduce cost and errors in health care delivery. Because HSIR

organizers were just in the middle of these stories, their practical actions reflected a provisional

movement toward a narrative unity; their actions were creating a place for an HSIR story within

the health care and the health sciences without impacting most of the ongoing stories of

professional work within most of the academic and clinical silos. In a few situations involving

cooperation among HSIR, other health researchers, and clinicians, the resources of certain silos

could be borrowed or leveraged for HSIR purposes without triggering landmines.

Analysis of cultural, dynamic, and narrative resources. The practice study

methodology provided that my reading of HSIR's organizing narrative would be anchored in the

cultural, dynamic, and narrative resources offered by the "Building a Learning Health System"

narrative and implications and possible narrative trajectories that are suggested by such

resources. The following sections present an explanatory analysis of those cultural, dynamic,

and narrative resources and will use the conceptual tools identified in the literature review

chapter to explore the significance of those resources in a deeper way. Those conceptual tools

include the theories and empirical literature related to practice, culture, and the organizational

lives of professionals reviewed in the first part of the literature review, the theories and empirical

studies informing a dynamic understanding of professional life in the second part of the literature

review, and the narrative connections also identified in the last part of the literature review.

Key cultural, dynamic, and narrative resources. I will explore in this section the

relationships among some of the cultural, dynamic, and narrative resources that are evident in the

"Building a Learning Health System" narrative starting with cultural resources. Although I will

address each type of resource separately, these resources operated in interconnected ways in the HSIR organizing story.

Cultural resources. Cultural resources provide crucial building blocks of the narrative logic identified in Figures 5.1 and 5.2 and the various storylines connected with HSIR organizing presented earlier in this chapter. Because those storylines involve building and creating new relationships and collective activities—new ways of working collectively—the storylines implicate the cultural need to make new collective meanings, to develop the significance of new activities and discoveries, and potentially to change existing cultures within academic medicine. The HSIR organizing narrative incorporates a number of comments and questions that directly reference culture and the need to change it within academic medicine, further confirming the presence of cultural issues. Because the work of HSIR organizing implicates culture change, the central concern of my analysis is to identify the collective actions that relate to culture change and the cultural resources that are used in those activities.

The "Building a Learning Health System" narrative contains indications that cultural processes involving meaning making and shifting evaluations of significance are being engaged through the use of cultural resources that identified new matters of significance to the work of HSIR organizers, and those that made vague references to broad professional commitments and the general approaches to pursuing those commitments. In turn, new meanings and new matters of significance are the keys to understanding how the professional and organizational cultures within academic medicine might be changed through the work of organizing the HSIR Program and other related efforts. The following paragraphs will demonstrate how the actions of HSIR organizers and the broad and vague language they used acted as cultural resources that promote

new collective meaning making, changing assessments of significance, new collective forms of actions, and even culture change.

By way of a brief review of matters presented in the literature review, culture is performed; its features are presented in established collective ways of acting, responding to others and to what is going on, and making meaning. Also, *practice* is the more active side of culture where the features of culture are developed and extended to new situations through practice performances, practical inquiries, and organizing activities. Clues about cultural matters are evident not only in the established ways of acting, for instance in the way certain medical procedures are habitually conducted, but also with respect to ways participants go about establishing new meanings and identifying new matters of significance in their situations that require inquiry and collective action. Meaning making and changing evaluations of significance were occurring in Lauren Kirwan's struggles to establish researcher/clinician relations in the community clinics and in her negotiations to establish support for a unique curriculum for the health systems research Ph.D. degree program within the new Population Health Sciences Department. Both of the issues arose in the framing by HSIR organizers of a new *practice* (in the broad sense presented in the Introduction) in health systems research covering clinical, research, and teaching missions of academic medicine. These stories highlighted particular meaning making opportunities to accommodate the features of a health systems research practice within the existing structures and practices of academic medicine and to raise the significance of health systems research within academic medicine at the University of Utah.

The meaning making prompted by the organizing activities of HSIR organizers involved using symbols and everyday language of the groups those organizers touched. These words and symbols were evaluated in light of the habitual ways of acting and cultural systems of practical

meaning of those groups (Dewey, 1938, pp. 114-115). Interview participants used terms and

phrases such as silos, quality improvements, health systems innovation, transitions, and

translation to refer in everyday language to the issues, gaps, and problems that they identified as

significant targets for new collective action and understanding. Because health services research

and clinical/research collaborations had not been broadly pursued at the University of Utah,

much of the initial work of the HSIR organizers in one-on-one meetings, in BLD sessions, and in

pursuing initial research and grant opportunities had the effect of bringing new language,

meaning, and a growing sense of significance to stakeholders within University of Utah Health

Care concerning both quality improvement work and health systems research. Dr. Hess asserted

that quality improvements and health systems research are essential, interrelated components of a

single collective enterprise to improve value in medicine. Central to her message is the idea that

quality improvement work being done by clinicians is important and should be pursued, but

nevertheless might have greater impact in changing health care delivery if such work were

designed, evaluated, and documented with rigor. As she queried in her first interview, "if we do

cool things and never broadcast it, did they ever happen? Can they ever change anything beyond

Salt Lake City?" Dr. Hess urged clinicians to recognize that quality improvements must

incorporate appropriate research design and be accompanied with data analytics, an assessment

of implications, and publication in order to impact health care delivery in a significant way. She

also conveyed the expansive cultural imperative that impactful research should also endeavor to

change medical care delivery. Initial research projects and grant applications involving Dr. Hess,

Lauren Kirwan's efforts with the community clinics, and Dr. Hess' preoccupation with clinic and

data access also signaled that collective, cross-disciplinary activities were receiving priority

attention within University of Utah Health Care. These efforts enhanced the significance of

health systems research while also suggesting new significance within the institution regarding what a program named Health Systems Innovation and Research might become. The collaborative and connecting *practice* that HSIR organizers were building modeled the new ways in which cross-disciplinary innovation, research, grant funding, and even academic programming might be pursued more broadly across silos that had historically developed independent cultures, practices, and in some cases, even research operations. Those efforts progressed toward creating a unique position for a health systems research Ph.D. program, but their work on community clinic and database access produced conflict among competing values and working practices of certain clinical and research cultures. New language, new collaborative models of acting, and new conflict are the hallmarks of meaning making, changing significance of matters within established cultures, and, ultimately, culture change.

The key terms used by interview participants to communicate meaning and significance had different time frames and scales of reference. At one end were ongoing, well-defined initiatives. While lean quality improvement and Value Driven Outcomes (VDO) initiatives had been implemented to impact operations, references to these programs were not just about small-scale efficiencies and new data collection. References to these established initiatives reflected a developing understanding of the cultural imperative that value in medicine needed to be improved and measured in new and collaborative ways. The story of how the VDO program was created highlighted the cross-disciplinary, collaborative nature of successful collective action. The "Algorithms for Innovation" website (Algorithms for Innovation, n.d.) also featured the Care by Design initiative that sported a decade of history in prioritizing the restructuring of primary care (Algorithm 1: Focus on Primary Care, 2012). Even though these initiatives were well established, it is important to note from a cultural perspective that the significance of these

existing initiatives continued to develop as the HSIR story unfolded. Dr. Hess identified the potential new significance to national audiences of the combination of lean improvement initiatives and VDO work that could be developed through published health systems research. A successful Transforming Clinical Practice Initiative application would utilize the learning from each of those initiatives to be applied in a change process focused on a new network of primary and secondary care providers. Through both health systems research and TCPI participation, even what has been at stake in well-established initiatives could be reframed and expanded in the light of new events that suggested new sources of significance for such work.

At the other end of the time and scale spectrums were the vague phrases such as "health systems," "innovation and research," "the right care for every patient," building a "learning health system," and "Imagine Perfect Care." These phrases were offered as broad professional commitments to fix the problems in health care that the professionals recognized and ultimately to transform health care systems. Located between these broad though vaguely-stated commitments and specific ongoing projects were the new ways of acting and making meaning that would need to be developed in order to extend the scale of current care improvement initiatives, disseminate and promote the adoption of improvements through research and publication, and make progress toward those broadly-stated professional commitments. Under conditions of uncertainty, the practical inquiries and organizing activities of the HSIR organizers were focused in this middle zone, where new collective action, meaning, and cultural significance would need to be developed. The descriptions of their anticipated work were also stated as broad objectives rather than specific action plans. Examples of these references included the phrases "ideas in progress," creating "virtuous cycles," and publishing "impactful quality improvement work." Specific instances of such work would be developed in the future in

actually performing new forms of collective inquiries and in reaching new practical understandings from such actions. These general, even vague, references to such work were operating culturally to signal an invitation to join in investigating new, collective work.

The challenge of the HSIR organizers to create new collective action, meaning, and cultural significance was summarized by Dr. Dean Li when he said, "We're here to change medicine—every scientist should aspire to impact a clinician and every clinician should aspire to impact a scientist." This statement proposes that changing health care would involve clinicians who had been impacted by researchers in setting the direction and understanding the significance of their quality improvement work. Also, changing health care would involve researchers who have been impacted by clinicians to use their research findings and publications to change medical care delivery. Specific interactions and the impacts to care delivery that might be produced are not yet known and cannot be described in specific terms. Rather, such interactions and impacts would be discovered in working through specific projects. The impacts would have cultural significance to the extent that the clinicians and researchers each recognized and connected to the concerns and understandings of the other group to some degree and adjusted their activities as a result. This process would result in creating new connections in the cultural webs of significance of each group, making those webs more sensitive to matters that would impact the quality and value of medical care.

Viewed from a cultural perspective, vague language was to be expected in the early phases of practical inquiry and organizing of the HSIR Program because the ideas in progress that were being pursued by HSIR organizers were not well defined and progress seemed slow, at least on tangible measures such as grant funding and research participation. Using vague language in the early phases of inquiry invited broad participation and the development of

multiple paths to achieve collective outcomes that could transform health care delivery. This cultural perspective also helps to explain the Dr. Hess' opinion that any type of research could be re-characterized as health systems research. The potential always existed that any new combination of quality improvements and research could create a new collective way toward significantly impacting health care delivery.

The symbolic use of collective action and vague, everyday language in the ways documented in the preceding paragraphs and in Dr. Li's statement are consistent with the description of "practice as culture; culture as practice—part 1" presented near the beginning of the literature review. The meaning-carrying, significant features of the *practice* situation facing the organizers of the HSIR Program were identified in their interviews, and other aspects of their situations were presented in ways that suggested that further meaning making might be required. Meaning making was especially required where the mission-based interests of the silos were threatened and "landmines" were encountered, and also where situational changes forced a reassessment of what was significant under the conditions. As demonstrated by the description of "practice as culture; culture as practice—part 2" and the literature subsequently covered in the literature review, new collective meanings and changes in the webs of habitual cultural action might occur as a result of pursuing paths of practical inquiry that can only be vaguely conceived. The courses of such paths would only be defined by discoveries from inquiry and organizing activities that arise along the way.

The HSIR organizers initially conducted meetings, BLD sessions, and events touching a number of people. The organizers described these specific events in more vague terms reflecting their cultural significance—bridging and connecting resources across the silos in academic medicine. Their use of key terms developed from everyday language and other matters of

symbolic significance became cultural resources that helped the HSIR organizers to craft the future-oriented storylines about the HSIR Program mentioned earlier in this chapter. The actual activities of the HSIR Program also had the potential to serve as cultural resources to the extent that such efforts resulted in a broadly adopted change in the traditional ways of taking action or created models of new ways of working collectively that could be deployed as the basis for further care delivery innovation. Some alternative paths toward health system transformation were presented by HSIR organizers or their activities as areas within the scope of the developing HSIR *practice* and preserved in the "Building a Learning Health System" narrative. These paths included growing multidisciplinary HSIR resources, making connections across silos, mentoring and consulting, participating in research projects and facilitating TCPI participation. Each of these paths presented new forms of collaborative action that would change the historic patterns of action of participants and their culturally-informed understandings about their own practices. For these reasons, each new path of collective action potentially would present a separate path toward culture development as well as health care improvement. I will review those pathways of collective action in the following section.

Dynamic resources. The trajectories of the action paths contemplated by the HSIR organizers were further impacted by situated dynamics—the features of their situation that hindered or facilitated their desired, change-oriented outcomes. These dynamic features faced by HSIR organizers were identified by interview participants, my notes of meetings, and document texts, and they were captured by the "Building a Learning Health System" narrative.

Figures 1.1 and 1.2[74] offered a possible framework for evaluating dynamic influences in

a practice situation. This framework was used initially to sensitize data collection to the

categories of dynamic influence that might have been mentioned by interview participants. I will

revisit that framework in the following section, but by way of review, the categories of dynamics

included features of the situation related to culturally-anchored expectations and purposes,

processes and patterns of practice activities, positioning, power and ideology, time, emergence,

and uncertainty, new interactions and relations, practical knowing and inquiry, and narrative

possibilities. I will build an understanding of the dynamics reflected in the HSIR story by

reviewing the key features of the situation the interview participants themselves identified that

were facilitating or constraining their efforts. The set of features impacting HSIR organizing

initially represented a more limited subset of the broader influences impacting aspects of health

care. These dynamic features included some that originated outside and inside of University of

Utah Health Care as well as some that related to professional as well as business concerns. The

practice perspective adopted for this study anticipated that matters identified by participants as

significant to their efforts would include key sources of dynamic influence that originated

beyond the boundaries of traditional professional skills and performance concerns.

Shared commitments to significantly impact and even transform health care delivery

drove the very conception of the HSIR Program and all of the proposed activities of HSIR

organizers. Three of the key leaders in the HSIR story, Dean Vivian Lee, Dr. Dean Li, and Dr.

Rachel Hess, each conceived of the possibilities of health systems innovation and research from

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[74] These figures were presented in the Introduction and explained in the second section of the literature review.

pre-existing, deeply held commitments to transform health care for the benefit of patients in the systems and for future generations. These commitments informed the decisions and collective actions that were reflected in "Building a Learning Health System." These commitments, and even the story itself, were therefore culturally generated and politically reinforced, not vice versa. Other interviews with clinicians reflected the same commitment to improve practice, as well as their commitment to research improvements so that others could change their practices based on well-documented outcomes. Senior leaders have acted on these commitments by authorizing quality improvement and VDO initiatives and TCPI participation; such initiatives not only furthered innovation but also reinforced cultural expectations that the University of Utah would take charge of its own paths to innovation and systems change. Other exercises with rhetorical effect, such as "Algorithms for Innovation" and "Imagine Perfect Care" also reinforced broader shared commitments to change health care delivery. In turn, the commitments to health care delivery improvement helped to align clinicians and, to some extent, researchers to the change program and to explain the strong turnout and interest in health services research evidenced in the BLD sessions.

Additional sources of important dynamic influence included shifting federal funding priorities for both research and health care reimbursement and shifting institutional priorities implicating health systems research and the HSIR Program. At the federal level, changes in research funding priorities to emphasize health services and patient-centered research projects were offered by one interview participant as a driver in establishing the HSIR Program. Institutional expectations to obtain significant grant dollars were a growing focus of attention of HSIR organizers over the first six months of the HSIR Program. Anticipated changes in Medicare and Medicaid reimbursement were of direct concern to the senior leaders of University

of Utah Health Care; those leaders had developed the initiatives for lean process improvements and value-driven accounting in part as responses to those changes. The shifting federal and institutional priorities came together in the opportunity to organize a practice transformation network under the Transforming Clinical Practice Initiative. That unanticipated event required the HSIR organizers to pursue a very big grant opportunity with uncertain implications for HSIR's future work program. TCPI participation would certainly have involved obtaining grant dollars and would likely have impacted reimbursements for care over time. Such participation, however, did not anticipate and would not directly fund the type of health services research that HSIR had been created to promote. HSIR organizers would need to contend with new duties in organizing and leading TCPI implementation that might interfere with or change their innovation and research priorities.

Silos represented other significant sources of dynamic influence on the activities of HSIR organizers. While both clinical and research departments existed as structures within University of Utah Health Care, the dynamic influence of silos did not derive from organizational structure or status. Further, silos did not just exercise negative influence or respond to HSIR organizers with a "landmine" effect. HSIR organizers presented a much more nuanced evaluation of the silos in the HSIR story. In fact, the organizers were driven by commitments to realize the benefits of collaboration with and among the silos. HSIR organizers' interests in achieving positive benefits by establishing new interactions and relations with the silos were illustrated by their overriding concern about access. Silos offered embedded knowledge, resources, and care improvement opportunities that HSIR organizers hoped to tap for specific projects with larger health systems impact. On the research side, some of the resources existed in proprietary databases, while on the clinical side some clinicians controlled access to interesting patient-

centered research opportunities. Dr. Hess believed that unreasonable constraints on access to data and patient-oriented research opportunities would ultimately prevent HSIR from making significant progress toward its objective to promote and disseminate impactful research. On the other hand, she also recognized the need to keep the silos "safe and whole" in accessing any resources.

More than just resource access was driving HSIR's focus on the silos. The broader commitments of HSIR included the idea that clinicians and researchers in the respective silos would broadly change their practices sufficiently to contribute to the greater cause of transforming health care delivery by integrating impactful clinical improvements with impactful published research. Many of the early activities of the organizers in reaching out to different constituencies, conducting BLD events, and building website connections to databases were designed to inform a broad cross-section of stakeholders about the mission and anticipated capabilities of the HSIR Program. Certain departments already had robust research operations that were serving the needs of their constituents, while other groups such as hospital-based clinicians within the General Internal Medicine Department were more fully aligned with the objectives of the HSIR Program. These factors constrained building new relationships and research with some of the established research operations while leaving a more open path to work with other groups. The HSIR organizers responded to these influences by deciding to serve those departments without research arms as well as clinicians within General Internal Medicine. As Lauren Kirwan concluded, ongoing relations between HSIR and other departments might be limited to interactions with a few individuals who were particularly interested in engaging with HSIR. By the fall of 2014, HSIR organizers were increasingly focused on pursuing those specific departmental and individual relationships that would produce research ideas and permit

HSIR's engagement on research design, grant applications, and anticipated future publication. Such an approach would engage other sources of dynamic influence that could facilitate the work of HSIR, including the influence that comes from establishing new relations and interactions with particular departments and individuals based on HSIR capabilities and offerings that were closely aligned with the needs and expectations of those departments and individuals.

Other sources of dynamic influence related to time. Even during the first interview with Dr. Hess, time-related considerations were growing in significance, and she reported her concern that HSIR organizers had not made sufficient progress and were six to nine months behind schedule. Time spent in individual meetings had become a burden. As the organizers obtained clarity about organizational expectations for funding, their priorities for use of time shifted to transferring existing research and developing three new research proposals for grant funding. HSIR even conceived of modifying the format of ongoing BLD sessions and PCORI research interest group sessions to be refocused on research-promoting content. These shifting priorities occurred against a background of strong political support for the program and assurances of funding for several years into the future. The concern was not political as much as practical—it would take a long time to develop a meaningful portfolio of grant-funded research, and HSIR organizers concluded that they had no more time to waste in unfocused efforts that were merely promoting the general purposes of HSIR to general audiences. Time is one of the scare resources in the PTSD world of health care.

The passage of time highlighted two additional sources of time-related dynamics— emergence and uncertainty. The TCPI announcement presented the most salient example of the emergence of a matter that simply had to be addressed and that re-prioritized HSIR efforts in the process. The decision to reallocate 50% Kim Bowman and Lauren Kirwan's time to the

administration of the Population Health Sciences Department and the community clinic access issue were also surprises that impacted HSIR activities without advance notice. Each of these emerging requirements distracted HSIR organizers from developing the HSIR practice they were otherwise engaged in developing and resulted in a plot twist in their changing stories.

Uncertainty is directly related to time and space: The farther we try to project ourselves forward in time and space from the present, the less we can control or even anticipate the salient conditions of the situations we will face. The essence of uncertainty is located in the absence of current practical knowledge about the best actions to take and the most desirable outcomes to pursue. This essence was sensed by one BLD participant who observed, "We don't know what we know and we don't know what we don't know." Uncertainty was expressed and anticipated in different ways in the "Building a Learning Health System" narrative. Kim Bowman's reference to HSIR's database project in terms of having a hold of the tail of animal but not knowing how big it is was a further example of uncertainty in action. As another example, the most dramatic references to matters that were uncertain were contained in Dr. Hess' initial interview. Her list of uncertainties included just about every significant aspect of HSIR's anticipated operations including the ability to hire the right faculty, meet expectations, obtain bandwidth, form partnerships, maintain momentum, and maintain goodwill. These specific references identified underlying dynamic influences that might hinder desired outcomes depending on how uncertain conditions played out.

"Building a Learning Health System" preserved two other forms of communication that reflected uncertainties facing University of Utah Health Care and the HSIR Program: the vagueness of references to longer-term commitments and the means to achieve them, and the dozens of questions posed by participants in meetings and in interview transcripts. The activities

and decisions of HSIR organizers were responsive in some degree to larger-scale commitments broadly accepted within University of Utah Health Care and the more specific questions that they chose to pursue through practical inquiry. Uncertainty was directly related to practical inquiry: As noted by Dewey (1938), the more a situation is uncertain, the greater is the need for practical inquiry to make this situation more determinate and actionable.

Most of the storylines and the dynamic influences in the HSIR narrative were driven by the actions of HSIR organizers, which were inquiries seeking to discover something new that would allow practical activities to move forward. Practical inquiry was reflected in the initial period of organizing involving one-on-one meetings and culminating with the BLD sessions. These efforts were designed to ascertain expectations and develop focus around particular problems. While the BLD sessions and University of Utah Health Care symposium raised many questions to consider, only a few key questions and issues rose to the level of a problem to be addressed by an active HSIR agenda. Even those matters acted on were provisional; some efforts to establish new relationships were successful while others set off "landmines." Kim Bowman observed during this period that Dr. Hess set a practical agenda, which he called a "vision appropriate for what's already going on." HSIR's principle of continuous learning required inquiry to be applied even to its own ideas in progress. Dr. Hess expressed her attitude toward any one of HSIR's own ideas: "If it doesn't work, let's figure out why it didn't work, post mortem it, and then figure out how to make it work." The activities of HSIR organizers after the BLD sessions worked on resolving key problems identified. Possible solutions included establishing a means to identify research interests and potential collaborators, identifying high impact QI initiatives, influencing how QI projects were prioritized, developing access protocols for the community clinics, and persistently connecting and bridging between the silos. Each of

these general areas of activity involved practical inquiry into what were the real problems and what promising ideas could be tested as possible solutions.

Matters of professional and scientific knowledge were also dynamic influences in the "Building a Learning Health System" narrative. All of HSIR's activities other than work on specific research projects were beyond the typical activities of both clinicians and researchers; their work as organizers was not informed by typical professional or scientific knowledge. The examples of practical inquiry in the preceding paragraph established that HSIR organizers also were not applying theories or seeking propositional knowledge to increase their understandings of practical issues; they were seeking local knowledge about needs, expectations, ideas in progress, research interests, database access solutions, and other matters that would facilitate HSIR's success. The essential knowledge they sought was knowledge of what worked practically and understandings of why certain ideas worked or did not work.

On the other hand, professional knowledge recognized in health care is knowledge that has been reduced to theoretical or scientific constructs that can be researched through scientific methods, taught through curriculum (as distinguished from learned through experience in practice), translated from bench to bedside and to practice, and applied by clinicians. In academic medicine, clinical and research silos have existed in substantial part to develop, teach, disseminate, and apply knowledge of this type; in general terms, this knowledge has been abstracted from messy contexts, validated with statistical measures, and disseminated through publications that mirror the disciplinary structures of medicine and the health sciences. As noted by Dr. Hess, these publications and their peer reviewers have well-established notions about what constitutes publishable research and what research would advance established bodies of knowledge. While the novelty of research problems could drive publication interest, building a

body of successful publications would require meeting the pre-determined expectations of peer reviewers for methodology, statistical rigor, and form-of-knowledge claims. In turn, the entire specialist, disciplinary structure of academic medicine has reinforced the same knowledge structures through teaching, medical residencies, and promotion and tenure decisions. These factors have combined to create potentially significant obstacles for the HSIR Program: Researchers may not recognize certain quality improvement work as generating valuable (or even valid) research that will be recognized by their separate fields; and clinicians may not want to be encumbered by special methodological requirements in designing and completing rapid cycle quality improvements.

Narrative resources. "Building a Learning Health System" is a performative account based on what people did, said, and observed. This account is marked by actors, action, events, plots and subplots, movement across time, and other features of narratives. The narrative structure of HSIR's organizing work has already been reviewed earlier in this chapter and depicted generally in Figures 5.1 and 5.2. While I pulled together this particular account and its details, the features of the account were at some level experienced by HSIR organizers, who were in the middle of a story with uncertain endings. Their interviews provided them with opportunities to present in a storied way what they were doing and interested in; these interview texts reflect narrative construction in progress, rather than the creation and accomplishment of plans or specific goals. Because this study was framed to capture the content of major events and the movement of action trajectories and priorities over time, the "Building a Learning Health System" narrative captured additional narrative content just by preserving the sequences of certain events and including observations available from participating in meetings that occurred at specific points, or reviewing certain documents that became available. These narrative

features were not my creations as a researcher but were features of the situation experienced by

HSIR organizers and of the narrative connections to future possibilities they envisioned as

available in that situation.

The HSIR narrative also reflects the widespread use of stories within University of Utah

Health Care. The "Algorithms for Innovation" website (Algorithms for Innovation, n.d.) has

illustrated every general idea with multiple stories. The creation of the Value Driven Outcomes

initiative provided a particularly striking example of cross-disciplinary cooperation and

innovation. These stories have created an unambiguous emphasis on innovation and value in

health care at the University of Utah.   The stories serve the rhetorical purposes of senior

leadership in communicating commitments to transform health care delivery. But the stories

were also available as narrative resources that symbolized creative and collaborative

accomplishments. The VDO development story in particular served as an exemplar of news

ways of working to accomplish breakthrough innovation in cost and value accounting with

significant implications for health care. The essential storyline of VDO emphasized how

individual commitments and contributions from a diverse group of professionals were integrated

into new tools that could be implemented broadly to enhance local knowledge about the costs

and value of medical care.

Many interview participants also offered stories or vignettes of personal history to

explain their respective relations to innovation, research, and health systems transformation.

These personal stories were available as narrative resources for the participants as they crafted

responses to my open-ended interview questions, and they were also available to be shared as an

aspect of developing shared understanding among collaborators. In addition, these narrative

features of interview accounts were offered to create a sense of unity between the ongoing work

and stories of the individuals and the larger collective commitments to improve health care delivery at the University of Utah. This composing-together of personal and institutional stories created a sense of narrative accountability—individual stories were framed so as to communicate potential engagement with others to move forward the collective health care reform agenda. As an example, Lauren Kirwan positioned her work in resolving a particular dispute involving research access to community clinics in the larger terms of addressing "a very big gap between day to day common sense implementation and ivory tower research." She also envisioned HSIR's collaborative research model as "a prototype of how we need to . . . change the way that research is done . . . [and how] the health sciences campus operates." Kim Bowman identified with the work of obtaining and administering grants, which could have been expected from his prior work with the Office of Sponsored Projects. But his concern in making the narrative connection was to emphasize how grant funding over time would build the reputation of the University of Utah for health services research and enhance the platform for bringing more talent into the University health care system. These linkages of personal stories with larger commitments reflect a participatory engagement in achieving greater collective causes and an ethical commitment to other participants in that common endeavor.

The first interview of Dr. Rachel Hess provided a particularly striking example of establishing a narrative accountability with larger future objectives. Most of her specific interview exchanges included a direct reference to the larger collective commitments she articulated. Of 16 interview segments, six referenced the need for system change or to attend to broader measures of patient outcomes and seven referenced the fragmentation resulting from the silos and the need to integrate isolated knowledge, especially relating to QI projects, into broader

improvements. Her other principal focus was on building the HSIR Program, a natural emphasis in light of her leadership role and her ethical commitments represented by her position.

Lauren Kirwan emphasized the underlying collective ethical commitment that echoed through the "Building a Learning Health System" narrative and many of the individual interviews: "It's a partnership and a relationship we're developing," she commented, adding that "relational understanding across departments" still needed to be built.

In summary, the narrative resources served to provide unifying themes and storylines that helped HSIR organizers and other leaders in University of Utah Health Care to connect with larger purposes and commitments and also to unify the various stories in which they found themselves. These themes and storylines already have incorporated both the larger themes captured by the cultural resources and the plot twists engendered by the dynamic influences in the situation. The narrative resources also allowed individual participants to articulate their respective places with respect to a program about health systems innovation and research. The interview process allowed participants to identify not only pieces of ongoing stories and their particular roles but also their commitments to, and collective engagement with, the larger causes driving the efforts of HSIR organizers and other initiatives.

Enhancing narrative understanding by applying conceptual tools. The cultural, dynamic, and narrative resources highlighted in the preceding section were notable features of the developing situation that HSIR organizers faced. In light of how the "Building a Learning Health System" narrative progressed, each of the key resources noted in the preceding section had a particular significance in the HSIR story that does not need to be further explained or interpreted. But these features of the HSIR organizing situation may be further read more holistically for their significance to the work of organizing HSIR and its future possibilities.

This section develops additional observations about the HSIR narrative and the cultural, dynamic, and narrative features of the HSIR organizing in light of some of the conceptual tools identified in the literature review chapter. The purpose of these observations is to explore some of the central issues and questions that are likely to be addressed by HSIR organizers in the future and the significance of those matters for the future possibilities of the HSIR Program.
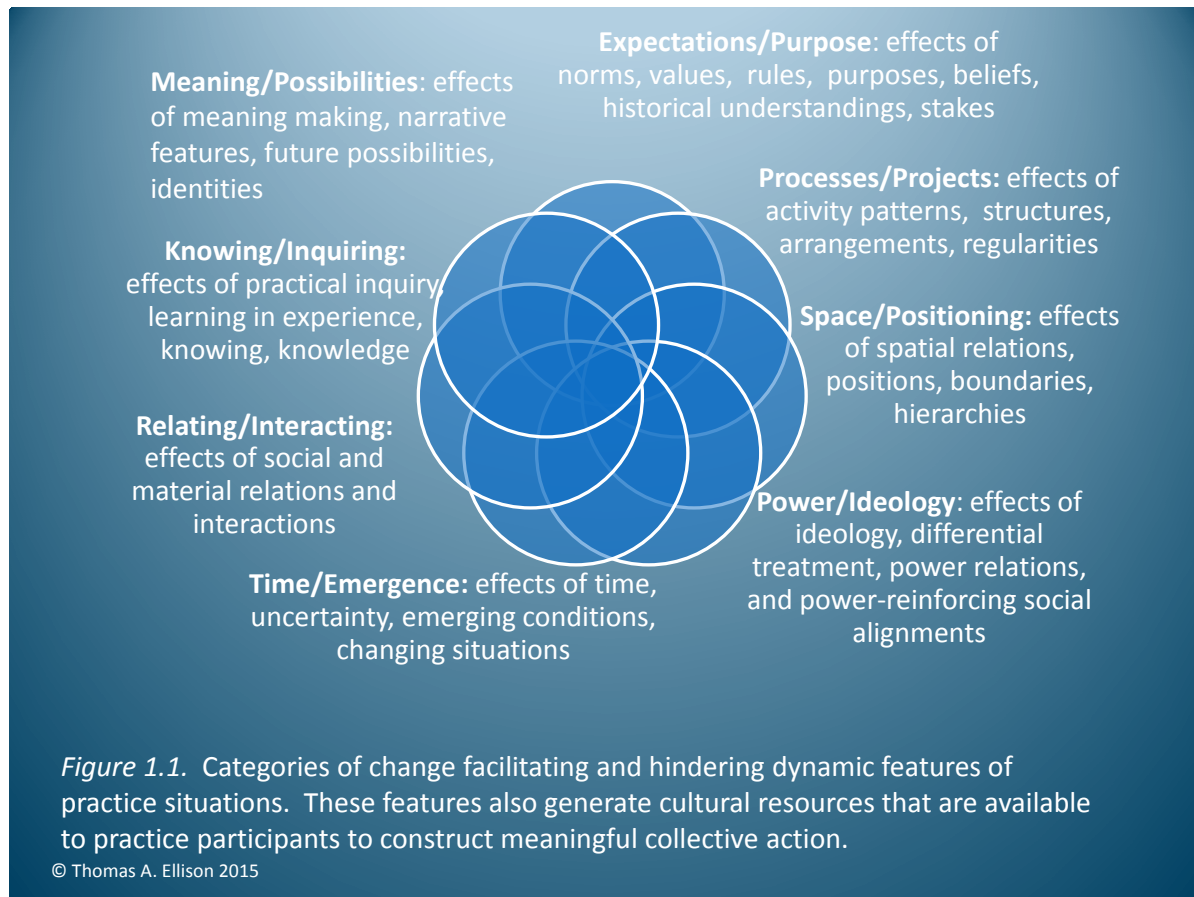
A central requirement of the practice study methodology is that any conceptual tools are appropriate to the empirical world under study (Blumer, 1969). The literature review placed this study broadly within a *practice* worldview, with particular emphasis on the cultural, dynamic, and narrative features of professional life within organizations. In the following subsection, I will address whether the "Building a Learning Health System" narrative can appropriately be interpreted through the cultural and dynamic perspectives reflected in the literature review. In the subsequent subsection, I will address the implications of the cultural and dynamic features of HSIR's situation on its proposed activities going forward and its future possibilities.

Understanding HSIR organizing through a dynamic, cultural lens. The earlier discussion of resources confirmed that the HSIR narrative implicates cultural resources, dynamic resources, and narrative resources. The operation of the narrative resources was presented in the narrative itself, but the implications of the cultural and dynamic resources for ongoing work of HSIR organizers were less clear. Evaluating the clinical and scientific departments in academic medicine as independent, but interrelated professional cultures helps to provide a deeper understanding of how cultural and dynamic resources interrelate: These cultures are shaped, reinforced, and potentially changed by the dynamic features of the changing situation in University of Utah Health Care and the broader world of academic medicine. A closer look at

how the HSIR organizers approached the silos provides some insight on the implications for HSIR of a dynamic and cultural perspective of academic medicine.

Dr. Hess recognized that the silos contained valuable resources—people, ideas, projects, specialty knowledge, grant and budgeted funds, and possibly other useful resources—to be accessed in some way by the HSIR program. Most likely such resources would be deployed in specific quality improvement and research projects consistent with their research-based purposes. Dr. Hess intended to avoid reinforcing the mission-based interests of these departments, which recognized their independent status and positions within University of Utah Health Care and academic medicine more generally. HSIR organizers would be required to establish new relations and ways of interacting with silos in order to accomplish HSIR's broader purposes, but the process of organizing new collective ways of acting had been known to set off landmines. Further, no one in academic medicine had any time; human resources were already fully occupied in existing patterns of activities and relations. As also noted in the discussion of dynamics, these factors worked to hinder HSIR's relations and activities with some silos while facilitating new interactions with others.

As noted earlier, Figures 1.1 and 1.2 presented a dynamics framework to sensitize data collection and interpretation. Figure 1.1 included a description of categories of dynamic influence and some possible evidence that might reflect dynamic influence. A simplistic analysis could place a silo within the category of space and positioning to reflect the organizational positioning and boundaries of the silos within Utah's academic medical complex. But the "Building a Learning Health System" narrative and my earlier analysis of dynamic resources demonstrate that a silo is reflective of aspects of all of the categories of the dynamic framework.

Figure 1.1. Categories of change facilitating and hindering dynamic features of practice situations. These features also generate cultural resources that are available to practice participants to construct meaningful collective action.
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The logic of the dynamic influences flows through Figure 1.1 in a clockwise direction from the top: Professionals in each silo have certain understandings and expectations about their organizational lives that are embedded in ongoing processes, practices, their positions, and the position of their respective silos within University of Utah Health Care and academic medicine. Established ways of acting, regularly performed processes and interactions, and common knowledge claims align participants within each silo to its unique purposes, and such alignments are reinforced by ideology grounded in the language of professional knowledge and expertise. Relations, interactions, research inquiries, training, and fellowships are concentrated on the work of each siloed discipline. The possibilities for the discipline and its new members are defined in terms of the discipline's historic practice traditions. Those traditions are enforced in the name of specialized knowledge and expertise through the structure of clinical training, residencies,

clinical departments impacting health care, doctoral training, accepted research methods, the assumed focus on developing knowledge within disciplines, and peer reviewed specialty publications impacting health sciences research.

As a matter of organizational structure, silos can grow up comfortably together in academic medicine because their respective expectations, processes, knowledge and expertise claims, and power alignments are all oriented internally to promote consistency and independence. But such independence functionally is accompanied by a price measured in fragmented care, botched transitions, isolated data resources, and care that, from time-to-time, is lost in translation. Despite the diligent efforts of highly expert professionals, poor patient and value outcomes should be an expected consequence of such a system. The ability to address such issues must in some part be anchored in addressing the negative effects and outcomes of siloed practices while realizing on their strengths and value. Whatever her comment might mean in terms of specific actions, Dr. Hess captured this essential balance by recognizing both the need to work effectively across silos and keeping "everyone safe and whole."

The original proposal for the Center for Health System Innovation and Research contemplated that the center would operate through collaboration with existing clinical and research departments to become a cross-disciplinary institutional resource with the strong implication, confirmed through interviews, that such existing departments should not be disturbed in the process. The shifting priorities adopted by HSIR Program organizers were responsive to the messages that HSIR needed to make a unique contribution, to build its own research portfolio and accelerate new sources of grant funding while not adversely impacting what other departments had built. HSIR was being subjected to similar dynamic influences that were also reinforcing the independence of clinical and research silos. The easier path for HSIR
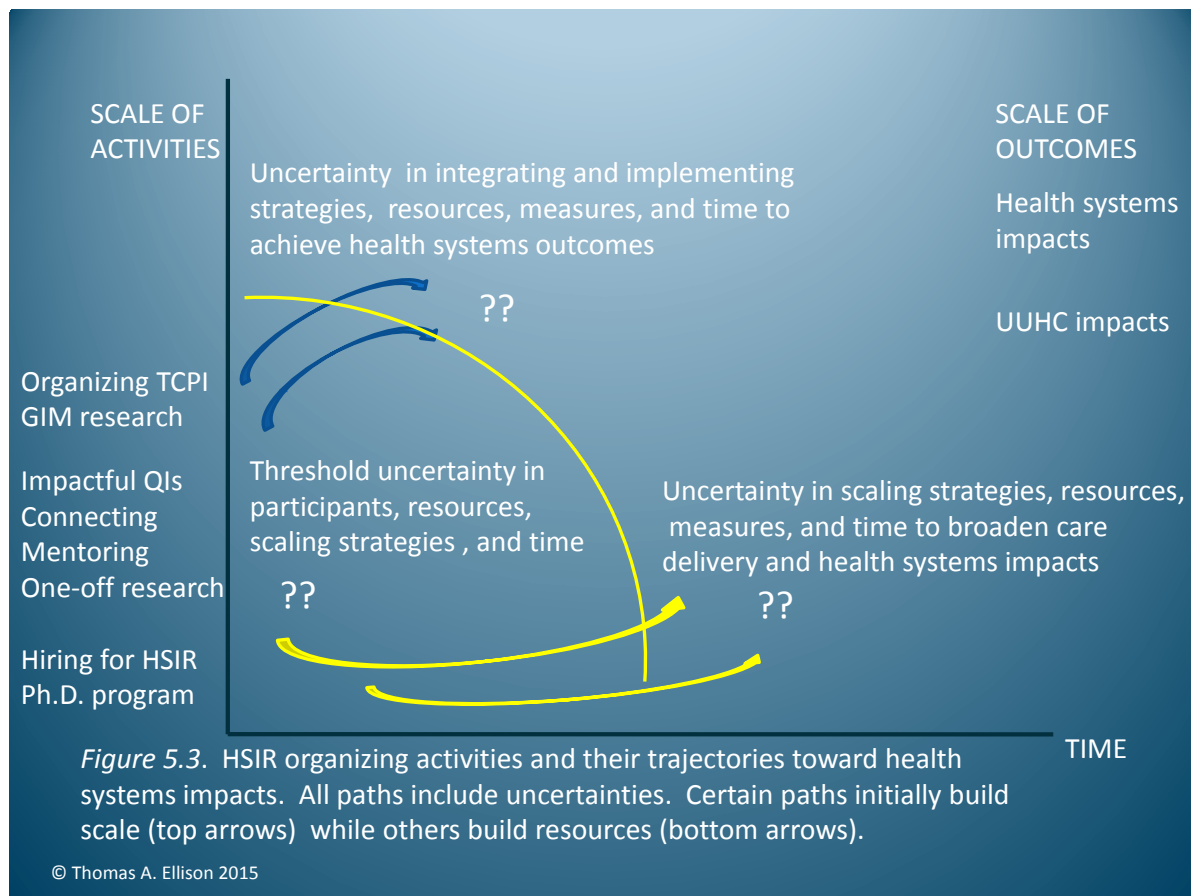
to follow would be to develop its own health systems research resources that would build its place among the existing silos based on HSIR's specialized knowledge and expertise in health systems research. Becoming a silo among silos is exactly what the dynamics and culture of academic medicine are facilitating in the case of the HSIR Program. At least structurally, the creation of the Population Health Sciences Department and impending division status and Ph.D. program for health systems innovation and research have reinforced that possibility.

The HSIR organizers, however, have adopted multiple paths of collective action toward larger program outcomes, and in so doing have preserved multiple possibilities for HSIR's future. I will explore the implications of the cultural and dynamic features of HSIR's situation for its future possibilities in the following subsection. After introducing the features of HSIR's proposed paths for collective action, I will address certain key dynamic influences that may hinder or facilitate HSIR's efforts to develop collective actions. I will then return to the matter of the silos and address the implications of adopting action paths that may confront the independence of the silos by influencing their cultures.

Implications of culture and dynamics for HSIR's future possibilities. As noted earlier, HSIR organizers envisioned organizing multiple paths of collective action to achieve potentially significant changes in health care delivery and health systems. These paths included

- creating a diverse collaborative of HSIR faculty and professionals;

- creating and implementing a new Ph.D. for health systems innovation and research in collaboration with other faculty and existing programs;

- participating in specific health services research projects with investigators from multiple disciplines and publishing results;

- mentoring and consulting on outside research grants and projects;

- making connections among researchers and clinicians with common research interests,

- identifying and participating in quality improvement work with potential impact and publishing results;

- developing and publishing impactful research with the General Internal Medicine Department; and

- facilitating the creation of a practice transformation network under the TCPI.

Figure 5.3. HSIR organizing activities and their trajectories toward health systems impacts. All paths include uncertainties. Certain paths initially build scale (top arrows) while others build resources (bottom arrows).

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As depicted in Figure 5.3, even though each path of practice development could contribute to achieving larger collective commitments to reform health care, its future trajectory could not be predicted or controlled. Each path has different implications for the location and scale of organizational activities and engagement, as well as the time required to achieve

potential outcomes. At one extreme, hiring faculty and professionals would take some time but would not require broad organizational involvement or have much organizational impact in the short run. The Ph.D. program would have a similar trajectory. At the other extreme, TCPI participation would require a broad organizational commitment and new forms of cross-disciplinary coordination initially, and such efforts could also produce short-term, organizational-level impacts in care delivery. General Internal Medicine's interest in health services research potentially would provide some initial scale to HSIR's efforts to build a portfolio of impactful quality improvement projects and could also create early impact on health care delivery from HSIR's efforts. The other paths of collective action envisioned by HSIR organizers are essential to HSIR's service function in the health care complex, but uncertain regarding the scale of organizational engagement that HSIR's efforts would produce or the time those paths would take to significantly impact health care delivery. HSIR might find it practically difficult to scale up the outcomes from one-off research projects, promoting connections, or engaging in mentoring and consulting since each engagement might involve unique factors. Impacts through publishing the results of such engagements would also take some time to develop, although publication would ultimately hold the potential to impact health care delivery on a broader scale.

The activities identified initially by HSIR organizers present very different challenges for HSIR organizers as pathways to achieving significant changes in health care delivery and systems. HSIR was conceived as a program that would generate a large impact operating from a small footprint. Activities that required achieving broad engagement within University of Utah Health Care as an initial strategy would require new relations and forms of interaction, which would need to be organized. In such situations, even the organizing efforts of HSIR would likely

be insufficient and additional coordinating activities would be required. I will explore the cultural and dynamic implications of these proposed pathways in the following paragraphs.

The activities pursued by the HSIR organizers present pathways to developing new collective action involving health care delivery innovation and health services research. As depicted on Figures 5.1 and 5.2 presented earlier in this chapter, these activities were intended to make progress on larger professional and institutional commitments to improve health care delivery and change health systems. As captured by the preceding discussion and Figure 5.3, the proposed activities of HSIR may be structured for purposes of analysis into three groups, which differ principally based on the initial scale of organizational engagement implied in the pathway. At one end of the spectrum are the activities that implied the need for greater initial engagement (such as TCPI organizing and research coordinated with hospital-based General Internal Medicine quality improvement initiatives); at the other end are activities that could be pursued with minimal engagement across organizational silos (such as HSIR hiring and the developing of its PH.D. program). These two groupings are different pathways to possible larger-scale outcomes as depicted on Figure 5.4.

In order to achieve health care delivery reforms or health systems change, organizers on the pathway that depends on building scale initially would need to develop integration strategies designed to assure not only that collective actions are appropriately coordinated across multiple organizational silos but also that the ongoing outcomes and discoveries of collective inquiries and actions taken along the way are placed in operation. These strategies would require extensive and persistent outreach to external constituencies in order to develop appropriate integrative systems. Organizers on the alternative depicted pathway would need to identify improvement strategies that implement a significant number of quality improvement initiatives.

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These initiatives ultimately could be scaled up directly through roll-out strategies and indirectly through research publication. Based on this analysis, HSIR's efforts to connect clinicians and researchers across silos, identify research projects, and engage in mentoring and consulting are really essential elements of improvement strategies that prioritize building an internal portfolio of people, projects, and other resources in lieu of reaching a higher level of scale in a fewer number of projects. Of course, an exceptional scalable project could be discovered and approached through an integrative strategy.

Figure 5.4. Integration and improvement strategies and their trajectories toward health systems impacts. These strategies were implied in HSIR's initial organizing activities. Uncertainties of time and scale reduce the effects of management tools.

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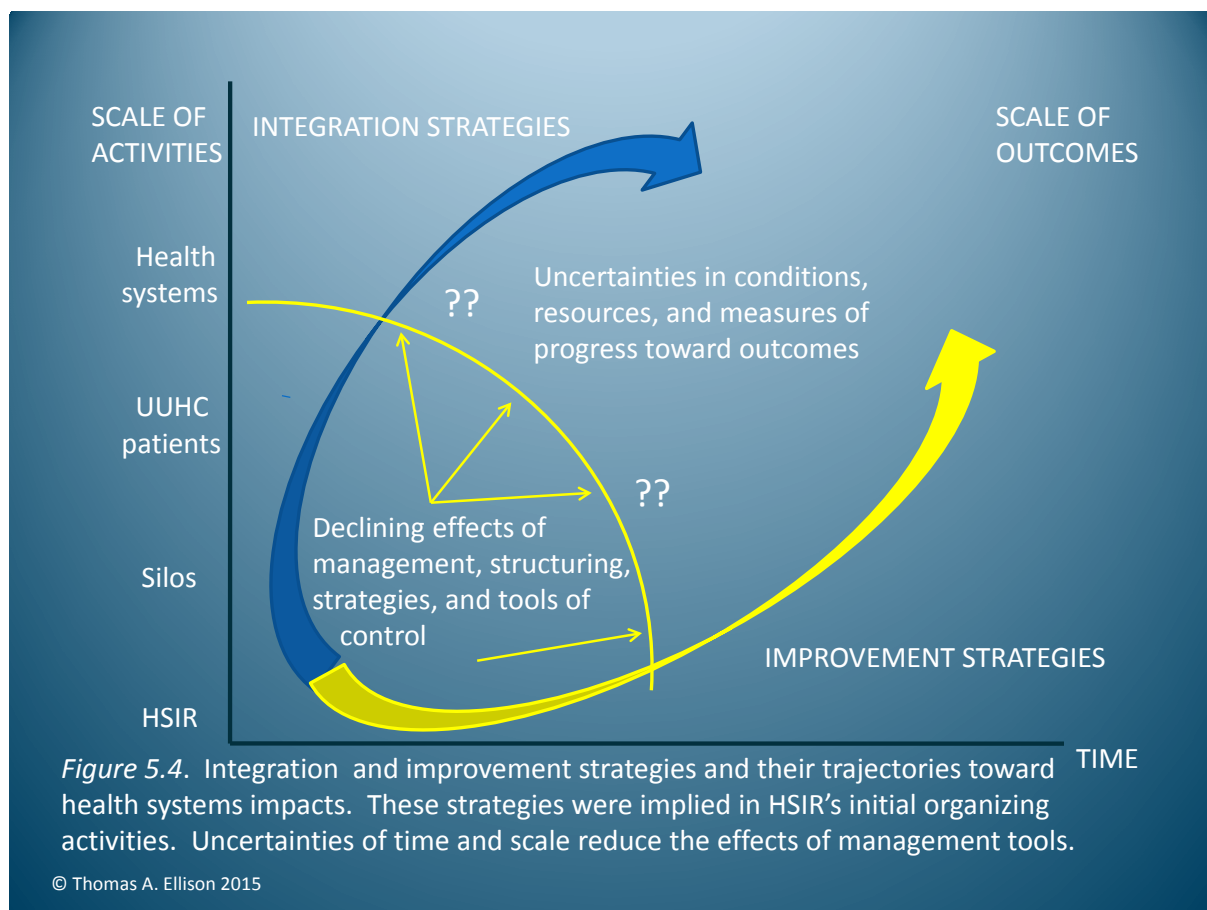
Figures 5.3 and 5.4 both depict that uncertainty would come into play with respect to the efforts to build the HSIR Program and create impacts on care delivery. The TCPI application and HSIR hiring, two examples at the two extremes of integrating and improvement strategies, illustrate the sources of uncertainty. In terms of hiring, the initial interview of Dr. Hess was clear

about the interim organizational outcomes she sought to achieve through hiring: building a

diverse team of health systems researchers from many disciplines. The resources available to

achieve that outcome were at the top of her list of uncertainties. Could she get the right people

with the right personal characteristics to apply and relocate to Salt Lake City? The TCPI

announcement presents different initial uncertainties: While the requirements and objectives of

the TCPI itself are clear, the organizational outcomes to be achieved and the measures of

progress to be monitored by University of Utah Health Care would need to be established. At

one level, just staffing the initiative with existing personnel presents choices with trade-offs for

other parts of the organization. At another level of consequence, comments by health care

leaders at the TCPI organizational meeting indicated that nothing less than the business model of

University of Utah Health Care is at stake and TCPI's implications for hospital operations are

uncertain. Further, in a very short time after participation would have commenced, leaders of the

practice transformation network would be required to make an assessment of the practices and

operations of the various primary and secondary care participants. They would not likely know

the resources required to deliver on the promises of the practice transformation network until

those assessments were completed. As depicted by Figure 5.3, HSIR's efforts to connect people,

locate, develop or facilitate impactful quality improvement work, and ultimately impact health

care delivery principally through publication of research also present uncertainties. Which

improvements would be prioritized and which research would be documented would depend on

who was participating, the novelty of their issues, and the potential to impact care delivery. The

interim outcomes for the organization, measures of progress, and the resources required for

success are all uncertain. Perhaps for that reason, HSIR organizers moved toward specific

projects that would more directly facilitate building the HSIR program in the short run.

The foregoing discussion of uncertainties has introduced a more general observation about the organizing of HSIR. Uncertainty and the emergence of changing matters of significance were central to the experience of the HSIR organizers. In part, these features of their situation were imposed from the outside (such as the TCPI) or above (such as Population Health Sciences, the TCPI endorsement, and shifting priorities around grant funding achievements). From a practice perspective, emergent change is to be expected (Rouse, 1996) and may be an essential feature of practices (e.g., Fuller, 1993; Rouse, 1996) and organizational becoming (Tsoukas & Chia, 2002). In changing conditions, and as represented on Figure 5.4, management decisions, structures, strategies, plans, and goals lose effectiveness as prediction and control tools over longer time horizons (Stacey et al., 2000). In such conditions, the future is shaped by relations and interactions that are responsive to changing conditions (pp. 186-189). HSIR organizers have demonstrated that organizing in such conditions takes a form of practical inquiry (Dewey, 1938) to identify which activities should be pursued over time that are responsive and "appropriate for what's already going on," as offered by Kim Bowman.

Uncertainties of the types presented on Figures 5.3 and 5.4 exist both within and outside of the zones of management influence. Therefore collective inquiry as envisioned by Dewey (1938) also should be a regular occurrence accompanying operating activities as well as activities that are more exploratory. While all of HSIR's activities could have been characterized as exploratory, HSIR organizers anticipated that connecting silos, facilitating and conducting health systems research, and evaluating quality improvement projects for impact would become aspects regular HSIR operations. As noted on Figure 5.3, these activities would confront uncertainties about who would be appropriate participants and how engaging with such participants could be leveraged into larger-scale impact of health care delivery. The activities

would be a part of a larger effort by HSIR organizers to create new relationships within the health care complex to address fragmentation and isolation. Viewed in this larger context of problem-setting, access to the community clinics and databases presented a variation of the same isolation problem. HSIR's activities to reduce isolation took the form of progressive practical inquiry: locate potential partners for health systems research and then develop projects to test new possible ways of working collaboratively.

Practical problem setting and problem solving are universal requirements of organizational life. Building on the logic of the HSIR organizers, practical inquiry strategies should be purposefully structured along with management, integration, and improvement strategies to reduce the potential hindering effects of uncertainty and to address the problems that arise from time to time.

How would the cultures and dynamics operating within University of Utah Health Care otherwise impact HSIR's pursuit of activities that might fall within the general examples of improvement or integration strategies? Before again approaching implications of the cultural and dynamic bundles called the silos, it is important to highlight the implications of one piece of a silo bundle—traditional conceptions of professional knowledge and expertise. As noted in the earlier discussion, traditional notions of knowledge as conceptually abstracted principles verified through scientific methods is a significant component of professional culture within professional disciplines. But one of the major themes in the second section of the literature review derived from empirical studies was that professionals in changing contexts "generate and apply practical knowledge derived from local discoveries and constructions."[75] A deeper analysis of the generic

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[75] See page 123 above.

integration and improvement strategies described earlier in this section will help to highlight the importance of local discoveries and constructions and the need to create dissemination strategies for local discoveries and knowledge that may not be theoretically or scientifically significant in the eyes of peer reviewers.

Quality improvement projects encompass bundles of local discoveries and knowledge that supplement specialized disciplinary knowledge claims as such claims are applied in practice. Such local knowledge encompasses

- knowing how processes may be improved;

- knowing the new outcomes that should be evaluated in undertaking and evaluating process improvements;

- knowing the practical indicators of improvement that may dependably indicate progress toward desired clinical, value, and patient outcomes;

- knowing how to document and present local knowledge in a way that could provide an example for other work and situations; and

- knowing what works and does not work in implementing process improvements with scale.

Replication of a successful quality improvement project depends not only on applying established science or theory, but also on the local knowing that accompanied the successful small-scale test. In integration strategies, integration processes themselves are central to the strategies. Integration involves not only coordination but also methods to build practical discoveries into operations at the same time more people are also becoming engaged with the work. Improvement strategies are ultimately dependent on the scaling up of the documented

research findings in implementation processes. What this local knowing looks like and how it should be preserved and disseminated are questions left open in this study of HSIR organizing.

The "Building a Learning Health System" narrative does not identify established paths to preserve exemplars of such local knowing. The ValueU educational initiative and the Eccles Health Sciences Library's "e-channel" project both offer the potential to preserve and feature aspects of local knowing from smaller-scale quality improvement projects. In turn, the learning from the examples provided by small-scale projects could stimulate new projects and more effective implementation and scaling of process improvement work. This scaling could occur through the expanded use of protocols that embed both research discoveries and the methods for implementing them. The same examples could stimulate new quality improvement experimentation in clinical processes that are not identical for many reasons. Other experimentation might be encouraged because processes are similar or analogous in key respects, because the implementation procedures solve a problem encountered in an unrelated area, or because the report clarifies an improvement or research method. These are examples of creating new possibilities through the use of narratives as contemplated by practice theories (Rouse, 1996). Of course, these examples are hypothetical, but they illustrate the power of Ricoeur's (1981) competence of reading as it could be applied to stories documenting how innovations occurred and improved care and value to patients. This current gap in innovation practice is making such stories readily available for reading. Paraphrasing Dr. Hess, if cool quality improvements are not made available for reading by others (whether or not through traditional publication channels) to stimulate new ideas in progress, "did they ever happen?"
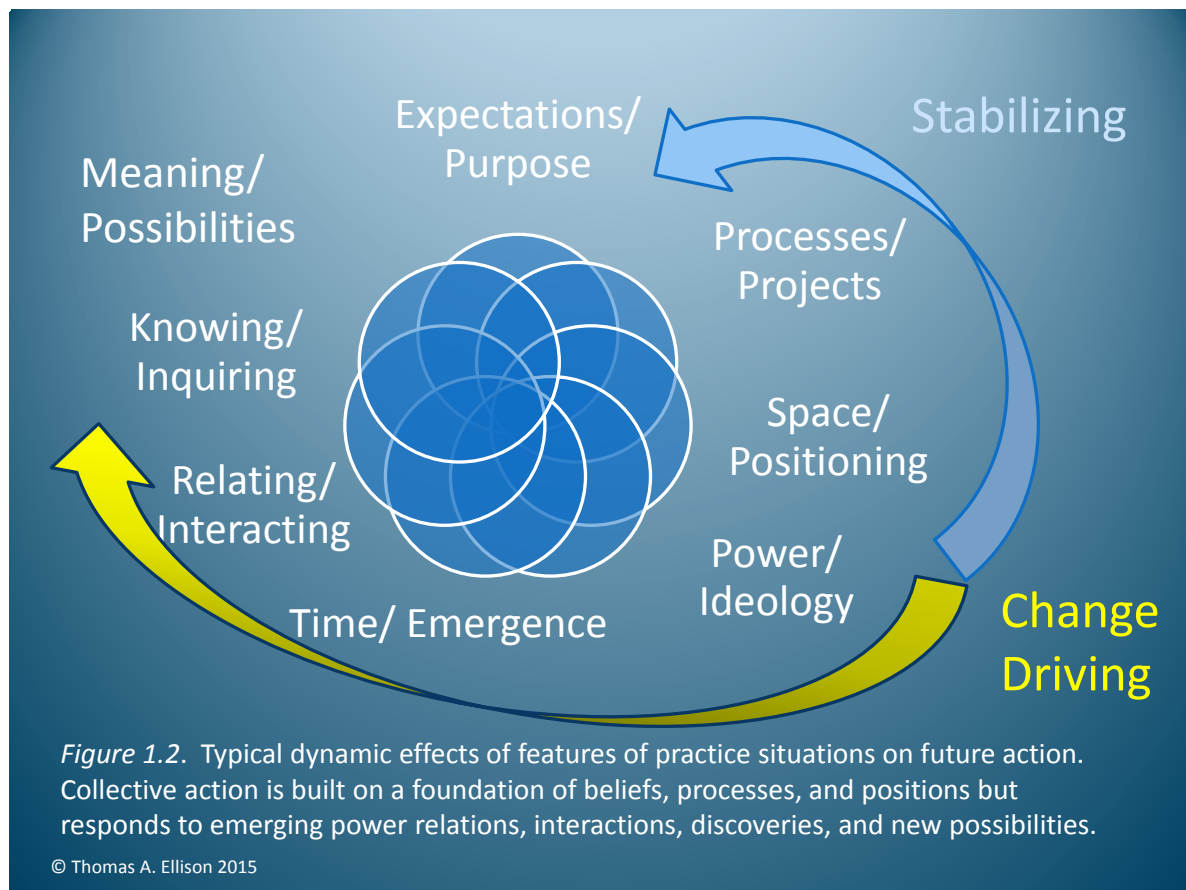
Stories of quality improvement experiments and implementation details could stimulate additional dynamic influences that are important to HSIR's long-term success. First, local

knowledge could be used to reorient knowledge-based social alignments to successful innovation projects (Rouse, 1996; Wartenberg, 1990). These alignments are now strongly, if not exclusively, oriented to the traditional knowledge claims of the traditional disciplines. Importantly, the potential for realignment results without loss to the academic silos since such stories would help to implement the work of scientific researchers into clinical practice. This process of dynamic influence is arguably the process that several interview participants envisioned in comments about clinicians and researchers having impact on each other. Multiple readings of quality improvement and implementation projects could cause diverse contributors to come together to create a new initiative, as was the case with the Value Driven Outcomes initiative. Creating cross-disciplinary knowledge alignments could have been a secondary objective of the original proposal for the Center for Health System Innovation and Research; such new cross-disciplinary alignments could be a precondition to the central objectives of HSIR to produce impactful innovation and research. Cross-disciplinary knowledge alignments could also have the dynamic effect of offsetting the impact from ideologies of professional knowledge and expertise. As an ideology, traditional conceptions of professional knowledge serve to freeze the evaluation of conflicting or competing knowledge claims and create a lag in response to matters that are not countenanced within the traditional claims (Ricoeur, 1991). If quick cycle innovation were matched with quick cycle dissemination of stories about the innovation, the change-hindering effects of the traditional knowledge claims could be reduced.

The previous paragraphs have sorted through the implications of time and uncertainty, knowledge and inquiry, and ideology for HSIR's anticipated implementation strategies. These analyses start from an acknowledgement that many features of the siloed world of academic medicine are reinforced by dynamic influences, which were explored in the previous section.

The "Building a Learning Health System" narrative demonstrates that certain of these reinforcing dynamic features were operating to hinder the change-oriented efforts of HSIR organizers. But the analyses in the preceding paragraphs also suggest that responses over time may initiate new dynamic influences that may counter or replace change-hindering features of the situation. Practical inquiry could be used to respond to emergent features of a situation and to limit the effects of uncertainty; moreover, the preserving and spreading of local knowledge obtained from the practical inquiries of clinicians and researchers could help to reshape social alignments oriented to knowledge and limit the hindering effects of ideologies of professional knowledge and expertise.

The foregoing examples of favorable dynamic effects introduce an important conceptual tool: As captured in Figure 1.2, certain dynamic influences operate in the ordinary course to

Figure 1.2. Typical dynamic effects of features of practice situations on future action. Collective action is built on a foundation of beliefs, processes, and positions but responds to emerging power relations, interactions, discoveries, and new possibilities.

promote stability and consistency in practices, while others may more readily become sources of influence facilitating change outcomes. Professional expectations, purposes, rules, and traditional understandings provide the underpinnings for established processes and projects that are performed within departmental silos. In turn, these processes create an organizational space and positioning for the department within the larger complex of academic medicine. In this way, the dynamic influences of purpose, process, and position provide the foundation of the professional practice within each of these departments and tend to operate to promote stability. Practice activities are dominated by the processes and projects that are recognized by the department as appropriate. Traditional claims of professional knowledge and expertise are deeply embedded in purpose, process, and position and provide a differentiating core to each departmental silo. Professional norms define appropriate research subjects, methods, and avenues for dissemination in order to reinforce those traditional knowledge claims. Ideology appears in the form of simplified statements that reinforce specialized knowledge and expertise claims and the necessity of associated procedures. The operation of these dynamic influences is revealed in the HSIR study by statements that researchers found quality improvement work uninteresting and the insensitive efforts of some researchers to impose burdensome research procedures on clinicians in the community clinics. The influences are also reflected by the responses of clinicians who did not want researchers interfering with their clinical operations.

But other dynamic influences could be more change-promoting. As emphasized earlier in this section, uncertainty and the emergence of new matters could initiate practical inquiry and promote responsive change-oriented activities. Local discoveries could produce new practical knowledge claims resulting in shifts in social alignments and ideologies. Inquiries and the dissemination of local knowledge could also generate new possibilities for innovation in areas

unrelated to the site of discovery. The opportunity for HSIR organizers is not merely to

understand how dynamic influences may be operating but also to deploy those understanding in

activities that modify key sources of dynamic influence in order to facilitate desired changes in

practice. This observation brings the discussion back to the starting point of this analysis:

recognizing the silos as independent cultures reinforced by dynamic influences that promote the

stability of the silos and hinder change-oriented efforts. How might HSIR's activities be

designed so as to confront and change the operation of the silos over time? I will approach this

question from dynamic and cultural perspectives.

The "Building a Learning Health System" narrative includes ample evidence that HSIR

organizers were sensitive to the dynamic influences at work in their situation. The narrative did

not include a strategy that would materially impact the silos or reflect that the organizers even

acknowledged a need to do so in order to be successful. Connecting, bridging, borrowing, and

facilitating access were terms used to describe their efforts, and such terms reflected action

logics that accommodate rather than confront the silos. The improvement strategies did not

involve confronting the silos, at least until improvements needed to be scaled. Pathways

deploying integration strategies, however, may not be able to defer more intrusive adjustments to

silo operations. So the more focused question becomes, how could HSIR organizers design a

cross-disciplinary integration strategy to limit the dynamic influences that could otherwise

operate to reinforce the independence and isolation of the silos?

Based on HSIR's organizing experience, a cross-disciplinary integration strategy could

be designed and conducted as a process of progressive practice inquiry and organizing. Based on

the analyses in this chapter, the following components should be investigated and considered in

the design of an integration pathway:

- Inquire in an open-ended way to obtain an understanding of the key matters of principal concern to each stakeholder group and identify common interests. This inquiry may resemble the inquiry I undertook in my study of HSIR organizing, which produced practically useful information about what the interview participants believed was most significant or at issue and also the possibilities they see for the work.

- Communicate discoveries of possible common commitments for the project. As was the case in the HSIR story, such commitments are likely to be vaguely worded but in a way that clearly resonates with broadly held professional values and interests. In this way, commitments could become a unifying call that could build and communicate consensus around broad objectives across various silos without highlighting any differences in narrower interests. Commitments are aspirational rather than technical statements.

- Build a common vocabulary of practical actions that develop collective meanings (Dewey, 1938) around aspects of the project where integration is required. The HSIR narrative indicates that stakeholders may read aspects of a project in particular terms familiar to them, which may produce disconnected understandings.

- Identify multiple pathways to achieve project objectives. As Dewey (1938) observed, determining the actual problem in an indeterminate situation requires progressive inquiry and fixing on a single solution may cut off further inquiry.

- Where possible, identify collective activities that would be extensions of existing processes and practices of participants. Such an approach anchors the new project

within patterns of practice, which are already persistently changing. Professionals regularly engage in new activities that connect to and build their existing practices.

- Identify existing processes and practices that may interfere with the project or limit its success. Such processes and practices probably were created to solve a different problem that is no longer at issue or that can be addressed in a different way.

- Identify who must support the project as conditions of its success and the nature of such support. A project may require supporting alignments of social groups and strategies to encourage such alignments.

- Identify non-participants who may be impacted by the new work and anticipate their issues and conflicts.

- Link new work to ideas in progress. Such ideas are likely producing local collective understandings about what works and what does not work; linking to them builds on progress that is already underway.

- Inquire to establish measures of progress. Such measures would need to be discovered in inquiry and would act as local knowledge to guide the further activities of participating stakeholders.

- Inquire to identify new future possibilities that might arise from the project. Such possibilities could help participants to frame their proposed work in terms of stories in progress and develop a sense of narrative unity in which all of the participants' activities and stories are viewed as converging.

- Identify gaps in transitions, communications, and performances that may be hindering progress. Based on the HSIR experience, such gaps may reflect a need to create common meaning or significance.

The foregoing elements take potential advantage of the typical hindering or facilitating characteristics of the different categories of situated dynamics presented on Figure 1.2. The key objectives of such inquiry would be minimizing the hindering effects of those categories of dynamics that usually provide stability in practices, including purposes, processes, and positioning, while maximizing the change potential of other dynamic sources. Of course, such inquiry would address the specific features and issues presented in a specific situation rather than operating in general terms. "Building a Learning Health System" is an example of how one group of organizers used practical inquiry and organizing to progressively refine questions, issues, and pathways for collective action while acting to limit the change-hindering dynamic influences of silos in academic medicine.

It is important to emphasize that the practical inquiry envisioned by Dewey (1938) is exploratory and progressive rather than analytic and conclusive. The objective of inquiry is to remain open to new discoveries and to new connections that may be made from such discoveries. In turn, such new discoveries and connections may serve to re-weave the webs of cultural meaning and significance for all who participate.

Summary of narrative understanding and explanation. The preceding sections reflect my reading of the "Building a Learning Health System" narrative for its implications for the further work of Health Systems Innovation and Research Program organizers. That narrative needs no outside interpretation as an account of practical inquiry and organizing; the narrative and the actions and comments of HSIR organizers and other leaders in University of Utah Health Care already offers their practical interpretations and the actions they determined were practically responsive to what they learned as they worked toward building a practice for HSIR and a learning health system at the University of Utah. Nevertheless my reading includes an

assessment of the cultural, dynamic, and narrative resources that are available in the story and presents a deeper analysis of the cultural and dynamic features of the situation and their implications for the ongoing work of the HSIR Program. As contemplated by Ricoeur's (1981) narrative arc and the practice study methodology introduced in this study, the purpose of this analysis is to enhance a holistic understanding of the organizing of the HSIR Program and also to ascertain to what other situations this study may refer. In the balance of this section, I will summarize my reading of the HSIR story's implications for the HSIR Program and its prospects from a holistic, narrative perspective but also in light of the deepened analysis of dynamic and cultural features presented earlier in this chapter. I will address the broader implications and significance of the HSIR organizing story in the concluding section of this chapter.

As noted earlier in this chapter, "Building a Learning Health System" should be understood as an intersection of many storylines rather than a single story. While I have emphasized practical inquiry and organizing as themes, the conceptual tools identified in the literature review offer other plots involving *practice* building, professional life in academic medicine, emergence, complexity, and organizational becoming. Theorists in those fields may find the "Building a Learning Health System" story to be exemplary of their perspectives. From a performative, within-*practice* stance, however, the storyline enhancing a holistic understanding of the work of HSIR organizers is a cultural one that incorporates those actions and dynamic features of the situation that were hindering and facilitating certain outcomes desired by HSIR organizers. My outline of a cultural storyline of HSIR organizing follows. This storyline is offered without all of the detail of the full story but with sufficient references to key features of the situation that are driving the future of the HSIR Program.

The HSIR storyline. The Health Systems Innovation and Research Program was conceived at the beginning of a significant era of change in health care in the United States. Although the Patient Protection and Affordable Care Act remains politically contested, its implementation has resulted in shifting resources and power away from basic research and toward patient-centered research, health services research, electronic records requirements, reimbursement experiments, and other pilot projects that are building new infrastructure to change health care delivery. Senior health care leaders at the University of Utah have responded to changes in regulations and incentives with commitments and initiatives to change health care delivery and its value, including through lean process improvements and new measurements of cost, value, and outcomes. The HSIR Program is only one aspect of University of Utah Health Care's overall strategy to use research to change health systems and improve the value of health care services. The HSIR Program's central part of that change strategy is to generate, study, and publish health systems research that will impact care delivery at the University of Utah and nationally and to significantly increase federal dollars flowing to Utah to support health systems research and clinical practice change. Now conceived as a division within the new Population Health Sciences Department, HSIR will retain a small organizational footprint with an oversized objective: to turn University of Utah Health Care into a nationally recognized laboratory for health systems innovation supported by health services research.

HSIR has been positioned to connect innovators with researchers, collaborate with clinicians to prioritize and facilitate impactful quality improvements, assess QI work and research for health systems change implications, and promote other cross-disciplinary activities that might impact care delivery. In conducting these activities, HSIR organizers have confronted the long-established, isolated cultures of the departments in academic medicine. These cultures

embody long traditions emphasizing specialized knowledge and expertise and related scientific research methods. Over time, these traditions have developed specialized processes, practices, databases, and systems of professional authority that reinforce the primacy of specialist interests in medicine over institutional interests. Such processes and practices dominate the attention and activities of the specialists, but all for the good cause of promoting expertise, skilled practice, and the advancement of slices of scientific knowledge. The HSIR Program is charged with assuring that clinicians work with researchers and impact their practices and that researchers work with clinicians and change care delivery in the process. But just a little bit of probing by HSIR organizers at the edges of the silos in academic medicine has revealed a disconnect: Clinicians might not want typical researchers around because research might adversely impact patients and care practices. Similarly, researchers geared toward scientific research methods think quality improvement work in medicine is not research-worthy, and may not even be interesting.

The charter for the HSIR Program has outlined one pathway to success: build a portfolio of quality improvement research projects with willing collaborators funded by grants, add staff resources, and grow into the larger shoes of a division in academic medicine—a strategy to become a silo in a silo forest. But HSIR organizers and leadership in University of Utah Health Care see a different path: HSIR can grow into a role of an integrator of health care improvements and health systems research. HSIR organizers have invested substantial effort in building new relations and promoting new interactions focused on health services research and relating grant funding opportunities. Senior leadership has recognized the essential health care delivery problem: Current approaches will not change health systems fast enough. Even though substantial training in lean processes has occurred and hundreds of projects have been

undertaken, leadership estimates that an additional $64 million and 64 years will be required to complete the lean initiative at current rates of deployment. University of Utah Health Care cannot be successful if innovation occurs on that schedule. Integrative and scaling strategies must be invented, tested, and deployed. Health systems innovation must be accelerated.

The announcement of the Transforming Clinical Practice Initiative changed the short-term landscape for the HSIR organizers. Senior leadership designated HSIR to organize and lead a practice transformation network contemplated by the initiative, along with the Department of Family and Preventive Medicine. University of Utah Health Care leaders understood that participation would require changes to the business model and might reduce the share of health care revenues captured by specialty services. Although the University of Utah might not be chosen to participate, the University of Utah had already made a big bet. The bet was not about winning a new opportunity for federal funding. Having invested in lean process improvements, a value-based accounting initiative, and a reorganized primary care practice model, the pieces for a successful application were already in place. The bet was that those same initiatives, combined with the infusion of health systems research capabilities and projects, would provide sufficient conditions to change the siloed cultures in academic medicine. This implied model of culture change was signaled by placing a family physician and a health systems researcher in charge of TCPI participation. How to proceed with TCPI implementation can be planned in light of the very specific requirements of that initiative. How to leverage TCPI participation and health systems research into broader culture change remains uncertain.

This foregoing storyline connects HSIR's pursuit of integration strategies with culture change. Integration strategies will necessarily confront and change the cultures of the departmental silos in academic medicine. These cultures are anchored in the ways people work

together, share what they know, and make progress. Shared work, knowledge, and progress are further grounded in a shared sense of what is meaningful and significant. Professional and scientific practices enact these cultures through processes developed to deepen and demonstrate the specialized knowledge and technical skills of their participants. While that important work must continue, clinicians and scientists in health care must now learn new ways of working and sharing knowledge across disciplines and making progress collaboratively by creating new relations and interactions involving broadened and integrated knowledge claims. Such relations and interactions will only make sense and become important if they are accompanied by a re-weaving of cultural habits of action and systems of significance to incorporate new relations, interactions, and integrated knowledge.

A cultural PTSD paradigm for HSIR. Stated simply, integration strategies depend on developing new relations and interactions that are meaningful and important enough to be persistently pursued. The "Building a Learning Health System" narrative suggests how people, time, space, and dollars may be approached to create a cultural PTSD paradigm. I will cover these elements in reverse order.

Dollars. Clinical departments currently benefit from a cost-savings sharing model which allows departments to receive some of the dollars saved from clinical improvement efforts. This practice could be extended through a partnership model to benefit team-based contributors to cross-disciplinary change efforts that generate measurable savings. A significant portion of such savings should be allocated to additional cross-disciplinary efforts, providing the seed capital for further innovation. In the cultural PTSD model, the work of the silos is demonstrated to have value through the collective action of many contributors and further collective action is prioritized through additional investment. Health systems research is central to such a program.

Such research could document the effectiveness and value of innovative processes, establish new measures of contribution and progress for the work of new partnerships, and accelerate new follow-on projects with implications to transform health systems. The flow of dollars tied to cross-disciplinary, collective outcomes would signify a cultural shift rather than just an economic incentive.

Space. Extending cost savings through isolated improvement projects will not change health systems without more. Innovation and delivery changes need to be seen as features of more and more clinical *spaces*. In a cultural PTSD paradigm, the spread of innovation through clinical spaces will be achieved by scaling. Scaling strategies must improve both value and patient care outcomes through the synergistic integration of knowledge and practice. While scientific knowledge of the specialties is crucial, special process know-how also is certainly involved. Ultimately, it is the practical knowing of the specialists, however, that may provide an unacknowledged critical contribution. Within their respective practices, clinical specialists use knowing from their broad experience to act as integrators of all types of knowledge in order to determine what works and what does not work in practice settings. Health systems research at the University of Utah has been conceived to find out what works and what does not work in efforts to generate collective, cross-disciplinary innovation. Because such efforts are innovative and cross-disciplinary, HSIR's story demonstrates that such efforts will be accompanied initially by vague references, issues of translation, and conflicts over methods. These indicators confirm that cultural processes of meaning making have been engaged. But how can progressive innovative efforts be scaled up? Fledgling efforts at the University of Utah to capture stories of innovation provide one approach: disseminate storylines of ideas in progress that worked and did not work. Stories make sense as a vehicle for sharing because innovative projects have actors,

action, settings, and reflect the past-present-future structure of narratives. Like the HSIR's own storyline, such stories need not have an ending, just future possibilities. Importantly, because stories rely on commonly recognized language, they have the capability to be read for a wide range of similar and different settings. The storylines should include the following elements:

- a description of the conditions that gave rise to the idea in progress and the problem that was proposed to be solved;

- the highlights of the process, including features of the situation that were facilitating or hindering progress;

- what has been learned in implementing the project; and

- the implications of the project for further innovation and health care delivery improvement.

Time. In the words of Dr. Dean Li, PTSD is about "temporal responsiveness." In integration strategies, scaling must be accompanied by speed. As noted by Dr. Hess, moving with speed to integrate work efforts and knowledge is likely to generate conflicts with isolated departmental silos. The "landmine" effect and the community clinic access issue both demonstrated that silos operate not only culturally but also politically. The original proposal for the Center for Health System Innovation and Research honored the departmental structure and the principle of shared governance across academic and clinical stakeholders. Other comments reinforced the idea that the departments were to remain whole. In the University of Utah health system, and in academic medicine generally, power is not wielded by senior leaders; power is located in alignments of leaders, operations, funding sources, and publications to the system of silos. In academic medicine, and in academia generally, senior leaders come and go, but the silos remain and are dynamically reinforced. The ideas for enhancing collective action through

dollars and scaling will not assure speed. What is needed is a special focus on implementation strategies. These strategies would take the learnings from ideas in progress and embed them in ongoing work processes. Implementation knowledge is a type of practical knowing that accelerates discoveries into practice. Innovation projects need to contemplate and be followed by implementation projects. Implementation knowledge may also be captured in stories. The default model in medicine is translation from bench to bedside to practice. While important, clinical translation assumes a certain codification of scientific knowledge that may not cover all knowledge pertinent to health systems change. Further, that approach retains a cultural separation between discoverers and appliers that reinforces the wide gulf between scientific research and clinical improvements identified in the HSIR story. Broadcasting storylines of implementation may help to focus new collective attention to the art of implementing ideas in progress quickly. Dr. Byington's research documented that implementing process improvements is central to producing health systems innovation from process discoveries. Her report also suggested that implementation work is a collective process of negotiation around acceptable measures of progress. Health systems research has a particular role to play in helping to document what works and what does not work in implementing ideas in progress. As ideas in progress are rapidly embedded into practice, impacted practice cultures will change. But cross-disciplinary attention to implementation could also change cultures more broadly by re-weaving into the webs of significance of those cultures new understandings about what matters in changing health care delivery.

People. The initial progress and bottom line of any significant health systems or cultural change will be measured by the contributions of engaged professionals to advance collective, change-oriented commitments of the type reflected in "Building a Learning Health System." But

as that narrative also acknowledges, physicians are frustrated by the gaps in performances and outcomes they see and the directions of their professional lives. The place to begin to understand health systems and cultural change is from the perspective of clinical providers. This is the approach encouraged by the within-*practice* stance adopted for this study. The existing provider-centered world of health care is an outside view of professional life founded on the expertise model of professional knowledge. In a world of clinician-as-expert, health systems must be redesigned to maintain hierarchies of knowledge and skill. Health systems research provides an exemplar of a different model of a health system centered on clinician-as-inquirer. Unlike the stereotypical professionals envisioned by psychological models of change resistance, clinicians are inquiring to identify new ways to improve the gaps in outcomes that they recognize and new ways to organize and partner across historic silos. At the University of Utah, they are already inquiring to create new process improvements and demonstrating attention to new measures of value and outcomes. Inquiring clinicians are open to changes in practice and business models. The message of HSIR organizers is that their inquiries and ideas in progress can have greater impact with some attention to the rigor represented by project design, research methods, and the dissemination of results.

The rebranding of clinicians as inquirers resonates deeply with the origins of academic medicine and the calls for the return of the clinician-researcher-teacher triple threat in academic medicine. Given the complexities of the health sciences and clinical practices, the triple threat in academic medicine will only be re-created through collective action. From a clinician perspective, the place to start with health systems reform and culture change is to enhance the learning that may occur from new attention to the practical inquiries of clinicians.

These comments about building a cultural PTSD model start to address the need for new machinery, politics, and culture in medicine[76] in ways that relate to the future work of the HSIR Program. New machinery is created and reinforced in the form of new innovation infrastructure fueled by health systems research and dollars reallocated to support and invest in new cross-disciplinary, collective projects. Politics are confronted by using time and speed in implementing ideas in progress. Ultimately culture is addressed by creating systems of inquiry that will promote the culture of a learning health system as promoted by Dr. Dean Li in the "Building a Learning Health System" narrative.

The Larger Significance of the HSIR Organizing Story

Although "Building a Learning Health System" is focused on organizing the Health Systems Innovation and Research Program, what matters to HSIR organizers and the other leaders who contributed to the story is transforming health systems. References to health systems were usefully ambiguous in the HSIR story. Understanding the HSIR story as a whole confirms that the term systems did not just refer to all-encompassing systems of care or the operating subsystems of medicine. The references encompassed all health care systems, including those that are cultural. Among the many questions that remain as a consequence of being in the middle of the HSIR story is one key question: What pathways of practical inquiry might refine what it would mean to transform the health system? In turn, this question requires a deeper exploration of the HSIR story for its contributions to a broader understanding of collective practical inquiry and promoting health system transformation.

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[76] These comments were made by Steven H. Lipstein and reported in "Building a Learning Health System."

The purposes of collective practical inquiry. "Building a Learning Health System" is a story of collective practical inquiry and organizing oriented to larger collective commitments to transform health care. Figures 5.3 and 5.4 and the related discussions revealed that uncertainties arose as the activities of HSIR organizers proceeded in the ordinary course. These uncertainties arose in the normal operating activities in attempting to organize cross-disciplinary innovation and research projects and were also anticipated in the pursuit of both integration strategies and improvement strategies toward larger health systems reform commitments. The different purposes of inquiry by the HSIR organizers are categorized on Figure 5.5.

Figure 5.5. Orienting purposes of HSIR practical inquiries. These purposes varied based on time and whether inquiries had operational or exploratory objectives.
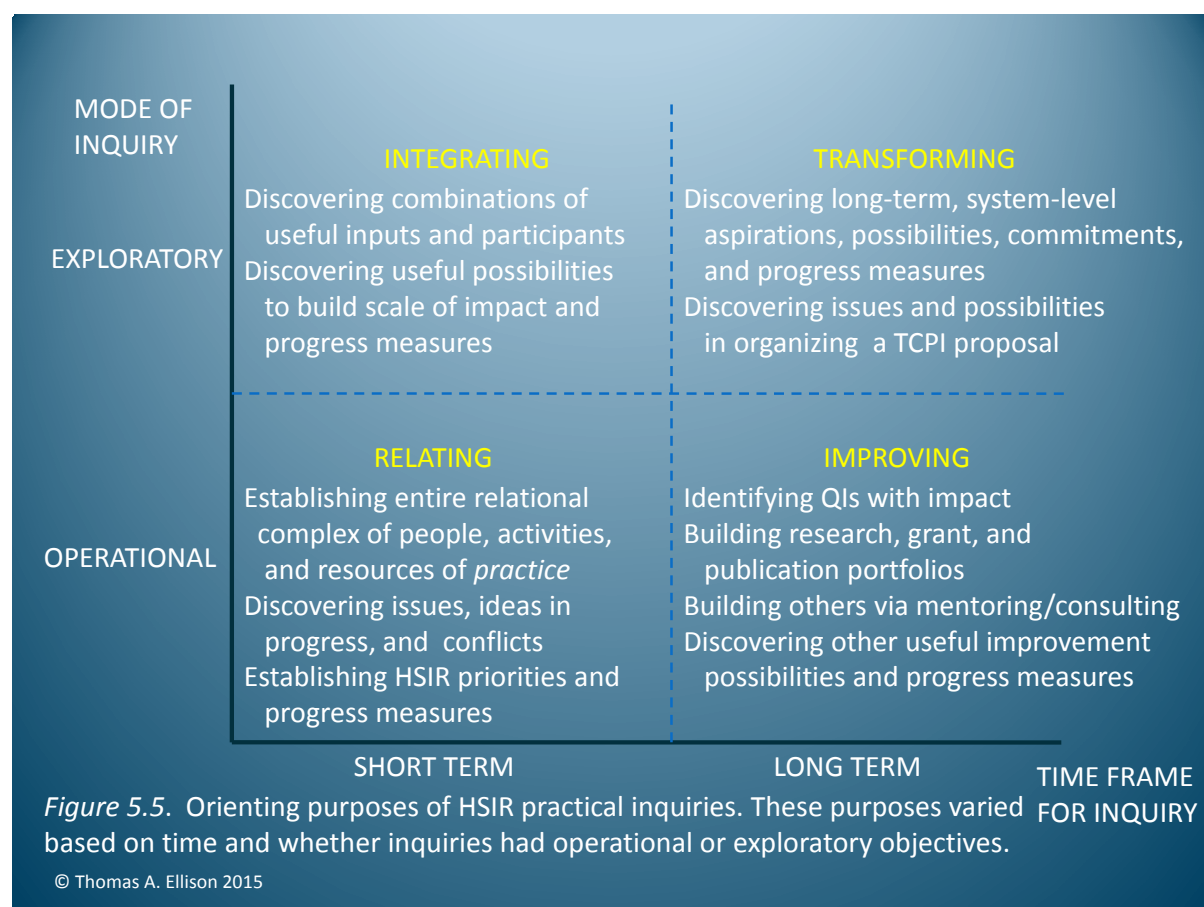© Thomas A. Ellison 2015

Figure 5.5 illustrates that the purposes of HSIR inquiry varied depending on whether inquiry was focused on an operational concern or was exploratory and the expected time frame over which the inquiry would be pursued. The categories of practical inquiry in Figure 5.5 retain

the logic of action reflected in Figure 5.4 and are accompanied by some representative activities that were undertaken by HSIR organizers.

In one sense, collective practical inquiry has a hierarchical relationship across the different categories shown on Figure 5.5. In the HSIR story, inquiring to build relations was essential to create the complex of relations that would constitute a *practice*; these relations provided a foundation for inquiries targeting both integration and collective improvement. The HSIR story offers just a few activities that I have characterized as having a transformative logic. The reason may be that both the pathways and the measures for progress in inquiries that would be truly transformative would need to be discovered and created through progressive collective inquiry that would not be locked into paths that are already tied to current operations and limited by the assumptions underlying those operations. Both integration and improvement strategies are tied to the provider-centered focus of the current health system. Integration and improvement strategies share a common premise that if clinical care is restructured, meaningful health systems transformation will follow. While transformed systems of health will certainly reflect restructured clinical care, like many matters requiring exploratory inquiry, essential actions, inputs, and measures of progress toward transformative commitments are unclear. In order to provide the right care for every patient going forward, the integrated clinical care processes of transformed, value-driven health care systems will need to be created. Inquiring to develop integration and improvement strategies could contribute to such discoveries but might not be sufficient to achieve aspirational outcomes to transform health care systems. I will pick up this particular commentary in the concluding section of this chapter.

Rather than assuming hierarchical relationships among the types of inquiry shown on Figure 5.5, collective inquiries toward transformative outcomes could be pursued independently

from inquiries pursuing operational, integration, and improvement strategies. Transformative inquiries would start with a clean slate and proceed in a pure discovery mode, looking for new possible ideas that are suggested by novel connections among ideas in progress, resources, dynamic influences, and other emerging features of the situation. Consistent with the literature reviewed in the second chapter, these ideas, however vaguely they might be presented, would represent real possible outcomes of new collective action (Dewey, 1938; Rouse, 1996), and not just abstract concepts. As noted by Rouse (2002), a possibility would be "transformative rather than merely additive" if the possibility "reconfigure[d] the sense of what one was already doing and dealing with." (pp. 337-338). As contemplated by Polanyi (1966) such ideas would likely be produced while exploring for new discoveries and would take the form of creating a newly appreciated coherence from various pieces of the situation. Creating a holistic coherence from otherwise disconnected pieces of a situation would reflect the structure and logic of a narrative. Based on these observations, transformative inquiries would in part involve creating and telling plausible stories about future possibilities that would change the meaning and trajectory of ongoing storylines and then pursuing the questions and problems those stories have suggested. While integration and improvement strategies will also be accompanied by narratives, transformative strategies may be distinguished because their creation may depend on the transformative power of narratives.

Practical inquiry has a special purpose in collective life. Practical inquiry progressively refines the problems that will be addressed by collective action. By pursuing collective inquiry, problem setting is informed by the diversity of perspectives and the local knowledge of participating stakeholders. As collective inquiry proceeds, ideas are pursued through the actions of many stakeholders and problems and possible solutions are refined by their discoveries. As

this process continues, common understandings and capacities for collective action grow. This inquiry process produces coordination for further action by building cultural understanding of what is meaningful, significant, and important to pursue and what is at stake in success or failure. Directives, plans, and solutions determined by executive authority may provide some degree of coordination, but merely implementing managerial tools may not build similar capacity for collective action, at least in conditions of uncertainty or conflict where meaning and significance need to be developed. Cultural processes of meaning making and developing new understanding through collective practical inquiries may be features of all adaptive and creative collective action.

Dewey (1938) expressed concern about inquiries that are prematurely terminated. His concern was located in the risks of pursuing ill-conceived problems and solutions, which could result in taking misdirected paths. This commentary about collective inquiry confirms that a premature termination of inquiry may limit an organization's cultural, adaptive, and creative capacities. Meaning making and adaptive and creative efforts would be central to pursing ideas in progress through exploratory inquiries with integrating or transforming purposes depicted on Figure 5.5. But collective inquiries for operational purposes to develop new relations, interactions, and process improvements also could require the creative reconfiguring of current or future operations and trigger cultural processes to develop meaning and significance around changing procedures and professional roles. Such collective inquiries are driven both by question-asking and the discoveries that are made as problems are explored. Because achievements through inquiries may take time to develop, practical inquiry should also be structured to include measures of progress for the ideas in progress and possible discoveries that are being pursued.

These features of collective practical inquiry are demonstrated in the "Building a
Learning Health System" narrative. The efforts of HSIR organizers to connect with
professionals broadly across the silos in academic medicine paid off when the Transforming
Clinical Practices Initiative was announced and the HSIR team was able to organize an
application. Sufficient ground work had been laid in University of Utah Health Care to
emphasize the significance of innovating and changing health care delivery, and Dr. Hess'
connections had increased common understanding of the significance of health systems research
as contributing both to innovation and related grant funding. At the meeting to discuss the TCPI,
participants not only talked about the pieces that would need to be compiled to complete the
application but also the possible impacts on University of Utah Health Care of being selected.
Developing such common cultural understandings would also help to develop the capacities to
actually develop an effective practice transformation network if the TCPI application were
approved. As an example with different implications, making new connections and trying to put
together the right collaborators was laborious and time consuming in the spring of 2014; HSIR
organizers reached an early conclusion to develop a technical website solution for what was
playing out as a complex relational problem. The website developer queried about whether the
organizers were solving the right problem. In the subsequent period, the learning from relational
interactions was reduced by putting the BLD sessions on hold. HSIR organizers may have made
both decisions from necessity in light of time constraints, but there were consequences to the
decisions that limited inquiry and learning.

In order to assure that collective practical inquiries are constantly pursued, a learning
health system would most certainly develop systems of practical inquiry that would resemble
Rheinberger's (1997) experimental systems in scientific research practice. Practical inquiry

systems would actively engage the practical perspectives of clinicians and researchers about matters they have discovered that are of potential importance to health care delivery. Their ongoing practices would help them to highlight areas for further inquiry that present interesting implications and possibilities, even if such matters were vague in the early going. A system of practical inquiry would use those discoveries to direct further inquiries and interpret further discoveries, building the stock of culturally recognized meanings. Even with respect to the scientific practices reviewed by Rheinberger, such systems were not purely technical systems to be engineered and programmed. Rather they were cultural systems that depended on common capabilities to recognize discoveries as important within cultural systems of meaning. Vague ideas became objects of inquiry and took on meaning when they were named and connected to other cultural resources and possibilities as inquiry progressed (pp. 36-37).

The learning health system envisioned in the future by University of Utah Health Care would certainly encompass the health systems research touched by the Health Systems Innovation and Research Division. Certainly dissemination of research through traditional publication channels will be an essential part of the Division's work. But HSIR could also play a central role in creating new systems of practical inquiry. These systems would capture and disseminate practical discoveries and local knowledge that arise from ongoing relational, improvement, integrating, and transforming inquiries with implications for changing health care delivery more broadly and transforming health care systems. Such systems could focus on key areas of practical concern that might not rise to the level of theoretical interest. Two examples include how to implement quality improvements broadly in practice and how to implement scaling strategies that might be created.

Building population-centered systems of health. In concluding my efforts to enhance the narrative understanding of the HSIR organizing story, I will establish the potential for transformative inquiry by commenting on one possible transformation scenario captured in the HSIR story. Patient-centered outcomes initiatives and the purposes of the Population Health Sciences Department introduce the possibility of building population-centered systems of health. Most of the current change efforts in medicine instead are focused on increasing the efficiency and value of existing provider-centered health care delivery systems. Both patient-centered and population health initiatives change the core assumptions of the health care system—the work of health care professionals should be refocused on population and patient health, wellness and other new outcomes that are not defined in terms of medical procedures or services. That premise has the potential to transform health care if systems of health were organized from the perspective of population health. The transformative potential of re-centering health systems toward populations would be captured in a new storyline emphasizing communities of care rather than facilities for treatment. In this story, new community-based social alignments oriented to individual and population health would operate across facility and organizational boundaries to promote health and wellness as a first priority. Reimbursement policies would be realigned toward population health and away from treatment. In the fragmented world of United States health services and reimbursement, this storyline barely passes a threshold test of possibility. My purpose is not to make a feasibility analysis, but to outline how transformative practical inquiry might proceed to create possible stories of such systems of health.

The provider-centered delivery model is anchored in the relational complex of *practice* that providers have determined are central to their work, including other providers, equipment, and supporting services. Over time, certain service functions in health care have been reduced to

replicable processes and routines. These processes and routines have operated together (sometimes effectively and sometimes not) in sociomaterial (Orlikowski, 2007) systems of diagnosis and treatment. These health systems have operated in a more or less coordinated and fragmented way.[77] What would population-centered systems of health look like if they were developed using the same relational, process-oriented, and system-oriented building blocks that are evident in current provider-centered health care systems? Practical inquiry might pursue the following questions:

- What relations (education, training, counseling, exercise, testing, etc.) would a community member need to access to promote health and wellness as a priority?

- What relations would be in place to maintain consistency in health and desired function in daily life? What relations would be on standby?

- At the level of process, what processes and practices would support health and wellness as a priority but also effectively address known and emerging conditions?

- And at a systems level, what sociomaterial systems would be in place to support health and healing back to the outcomes each patient desired—the right care for every patient?

Perhaps inquiry that is both practical and transformative in orientation would produce different pathways to health care reform than could be developed through purely integrative or improvement strategies. Because HSIR professionals will gain special knowledge about the

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[77] The organizing of the HSIR Program demonstrated the same essential pattern of relationship building in *practice* and developing processes and routines in anticipation of developing more or less coordinated sociomaterial systems of innovation and research.

implications of discoveries for health systems transformation, HSIR should engage in practical inquiry to develop and refine possibilities that might be transformative of current health systems.

The pieces of the story of the population-based systems of health are being developed at the University of Utah. Whether such pieces will be pulled together into a narrative of "Building Systems of Health" may depend in part on whether transformative practical inquiry is pursued in addition to addressing through inquiry the practical problems that will arise within the established and already challenging pathways of toward health care improvement and integration.

Discoveries and Implications From an Exploratory Study of Organizing

The study of the organizing of the Health Systems Innovation and Research (HSIR) Program explores a situation where professionals were developing new collective action that would affect established professional practices in significant respects. I envisioned that studying such a situation over a period of time could enhance our understanding of how new collective professional relations and activities may be organized, facilitated, and hindered; new professional relations and new collective actions are increasingly important features of professional life and are central to the adaptive strategies of institutions providing health care, justice, and education. HSIR organizers created such relations and actions through collective practical activities that progressively sifted through issues and questions, refined problems and possible solutions, and refocused short-term collective commitments.

This study is also an exploratory study of a practice study methodology that I developed from my review of philosophical theories of practice, narrative theories, studies of scientific research practices, and professionals in changing practice situations. Practice from these perspectives is a dynamic, changing, storied complex of relations, not just a package of specialized knowledge and skills. My literature review documents that studies of professionals have typically been concerned with documenting or developing theories rather than exploring practice as an interrelated complex of professionals, material things, and changing influences. In addition to avoiding researcher-imposed theories, the methodology's design principles focus on the future-oriented actions, talk, and observations of professionals who are engaged in creating change and their issues, conflicts, and discoveries. Open-ended interviews seek to allow interview participants to talk about what they think is important for me to understand—matters that were meaningful and significant to them—and to tap into their narrative thinking—the

connections they made among past features of their situation, factors influencing ongoing actions, and their future commitments and possibilities. The composite "Building a Learning Heath System" narrative preserves their different perspectives and the meaningful details they offered. As contemplated by my methodology, this study also contains a holistic, interpretative reading of this story for its future implications based in part on a deeper analysis of the cultural, dynamic, and narrative resources that were features of the organizing situation.

This study is also a story of change in academic medicine. Transforming health care systems is the overriding objective that matters to the HSIR organizers and other health care leaders at the University of Utah. Those leaders were already taking notable steps to change health care processes and create new measures of cost and value. They view health systems research as a possible catalyst for new forms of cross-disciplinary collaboration that would improve care while breaking down cultural barriers within academic medicine. "Building a Learning Health System" presents inside-out, ground-level perspectives of participants who were organizing toward reconstructing health care through research and documents the cultural and dynamic features that were influencing their efforts. This story is available to be read by others who also face the challenges of effecting change in the complex world of health care systems.

As contemplated by the practice study methodology, the "Building a Learning Health System" narrative may also be read for its broader implications—implications not tied to the particular setting or the intentions of HSIR organizers. I will review some of those implications in terms of what I learned from this study. I will then explore the implications of this study for leadership and change practice, with a particular emphasis on exploratory inquiry, creating learning and integrating organizations, and changing culture. I will also comment on the significance of practical and exploratory inquiry for leadership and change theories. In the final

section of this chapter, I will revisit the practice study methodology, offer criteria for the evaluation of practice studies, and highlight some key ideas and tools from the methodology that may be deployed to enhance cultural change processes.

Discoveries From "Building a Learning Health System"

What did I learn from this narrative and study? Because I was engaged in exploratory inquiry, I will offer my conclusions about this study in terms of my discoveries as a researcher of HSIR organizing—the insights, surprises, and connections that were most significant to me in my efforts to enhance understanding of professionals organizing toward professional practice and health systems change.

Exploratory inquiry matters. The initial organizing work of the HSIR organizers was highly provisional and exploratory. They worked to discover what was important in their situation, experimented to identify what was working or needed to be fixed, and created multiple paths toward larger commitments to change health care systems. Several features of their exploratory work stood out as essential to discovery.

- Exploratory work was driven by broad commitments to the possibilities of improving and changing health care. These commitments were culturally driven to close gaps in practice and politically reinforced. Even though described in vague terms, such commitments appeared to be the impetus for all activities rather than specific goals and prescribed activities. Portions of their work became goal-directed and amenable to planning only when certain problems or objectives became sufficiently defined to allow a specific goal to be stated.

- Exploratory work was driven by questions, issues, and problems rather than solutions. Key questions and refined problems generated new activities, relations, and interactions, which in turn generated new questions, issues, and problems.

- Exploratory work was concerned with making overall progress rather than documenting specific achievements. Dr. Hess' phrase "ideas in progress" captured the essence of her activities as well as the quality improvement work of clinicians.

- Ideas in progress require measures of progress. Such measures were not quantifiable or even fully articulated. Rather, measures of progress were developed from the expectations of others, what was working practically and not working, and the potential of new relations and interactions to generate impact.

- Collective exploration is centrally about discovering new ways to generate collective progress. Discovery of ways covers all meanings of that term, including developing direction and courses of action, developing the manner of acting and characteristic performances, and making progress toward possibilities. Discovery is a process of creating something new rather than disclosing something hidden.

- Exploratory work of HSIR organizers involved pursuing multiple pathways at the same time, identifying new options, and learning from failure as well as success. The greatest risks were reflected by narrowing options to a sole problem/solution combination because the pursuit of an ill-conceived problem or solution might put the project on an unproductive path.

- The exploratory activities of HSIR organizers demonstrated the essential logic of discovery contemplated by Polanyi (1966)—making new connections among features of a situation that might lead to a holistic coherence. This logic and the activities and

discoveries that arise in exploration reflect the narrative understandings of inquirers who make coherent holistic stories out of the specific features of a situation. [78]

Practical progress on collective problems is encompassed within narratives.

Progress, as distinguished from achievement, is accounted for in narratives rather than analyses. The exploration of HSIR organizers reflected the power of narratives and the future possibilities embedded in narratives to orient the direction of practical organizing activities and the pathways for action set by the organizers. Most essentially, the activities of HSIR organizers and the problems they were working to solve were persistently linked to the future possibilities they recognized for transforming health systems and health care delivery at the University of Utah. For decades, University of Utah Health Care had been constructing its story as a leading regional academic medical center. A new, transformative story was developing around the idea of turning that health care system into a nationally recognized laboratory for small-scale testing and health systems research. That storyline places HSIR activities in the middle of a storyline tied to building new capacities for innovation and research that would also change care delivery and health systems.

"Building a Learning Health System" demonstrates that simply looking at a situation over time reveals the pieces of a holistic story. The first interview with Dr. Hess reflects two key narrative themes: fixing the issues with health care delivery and transforming health systems in the process. The personal stories of HSIR organizers and their ongoing activities in their

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[78] In Polanyi's (1966) view, the brilliance of scientific and artistic discovery rests on developing holistic understandings by connecting the particulars of a situation. This discovery occurs while an inquirer is engaged in activities to produce new learning. Dewey's (1938) practical inquiry and Schön's (1987) design are similarly based on a logic of creating overall coherence from questions and problems.

respective interviews may be framed as a part of the story by persistently connecting their work to the larger HSIR Program objectives and possibilities. Their work in refining problems and shifting work priorities fills out the details of the storyline of progress. These narrative connections suggest that the story of progressing toward larger purposes provided meaning for their work. The storied connections offered in "Building a Learning Health System" also allows their work activities to be read and understood by others as a part of a story.

Collective culture infuses practice and practice changes culture. The HSIR organizers were building a practice centered on health systems research. Certainly health systems research represents its own package of specialized knowledge and expertise, and the Ph.D. program oriented toward health systems innovation and research demonstrates that the field is silo-worthy. The organizing of HSIR presents an evolving practice that would include mentoring, consulting, participating in cross-disciplinary research, and attracting and administering grant dollars. What is interesting about a health systems research practice, however, is that it necessarily interfaces across the disciplines and well-established cultures of clinical specialties and sciences in academic medicine. "Building a Learning Health System" illustrates how this practice-building process was beginning to impact those established cultures. The story of the community clinics is an example. Researchers needed access to clinicians and patients to conduct research of interest to them using research methods recognized by their disciplines. They met resistance from clinicians. The clinicians were in the business of caring for patients with protocols accepted in their fields and operated on tight time schedules. They found researchers unresponsive to their concerns and patient interests. The resistance demonstrated was not in the minds of participants, but embedded in realities of patient care situations and conflicting cultural requirements of the professional disciplines.

Two objectives of the HSIR program are to sensitize researchers to the opportunities of researching quality improvement work and to turn clinicians into health systems researchers. Researchers and clinicians who want to follow those paths would be required to experiment with significant adjustments to their respective practice relations and activities. Those activities are already tightly wrapped up in cultural webs of specialized knowledge claims, skills, established methods, technical processes and procedures, aligned professionals (and their teams and machines), and supporting administrative practices. From a ground level perspective, these are the operating systems of health care. Some of those experiments might take hold among a group of researchers in a particular field, or a group of clinicians with a common practice, and result in changes in their performances—their collective methods, processes, procedures—and changes in the alignments of the supporting systems. Since culture consists of collective habits of acting, responding, and making meaning, a change in collective performances, methods, processes, procedures, and supporting alignments may produce a change in the impacted professional culture. One certainty, however, is that no culture change will result unless collective performances, methods, processes, procedures, and supporting alignments also change.
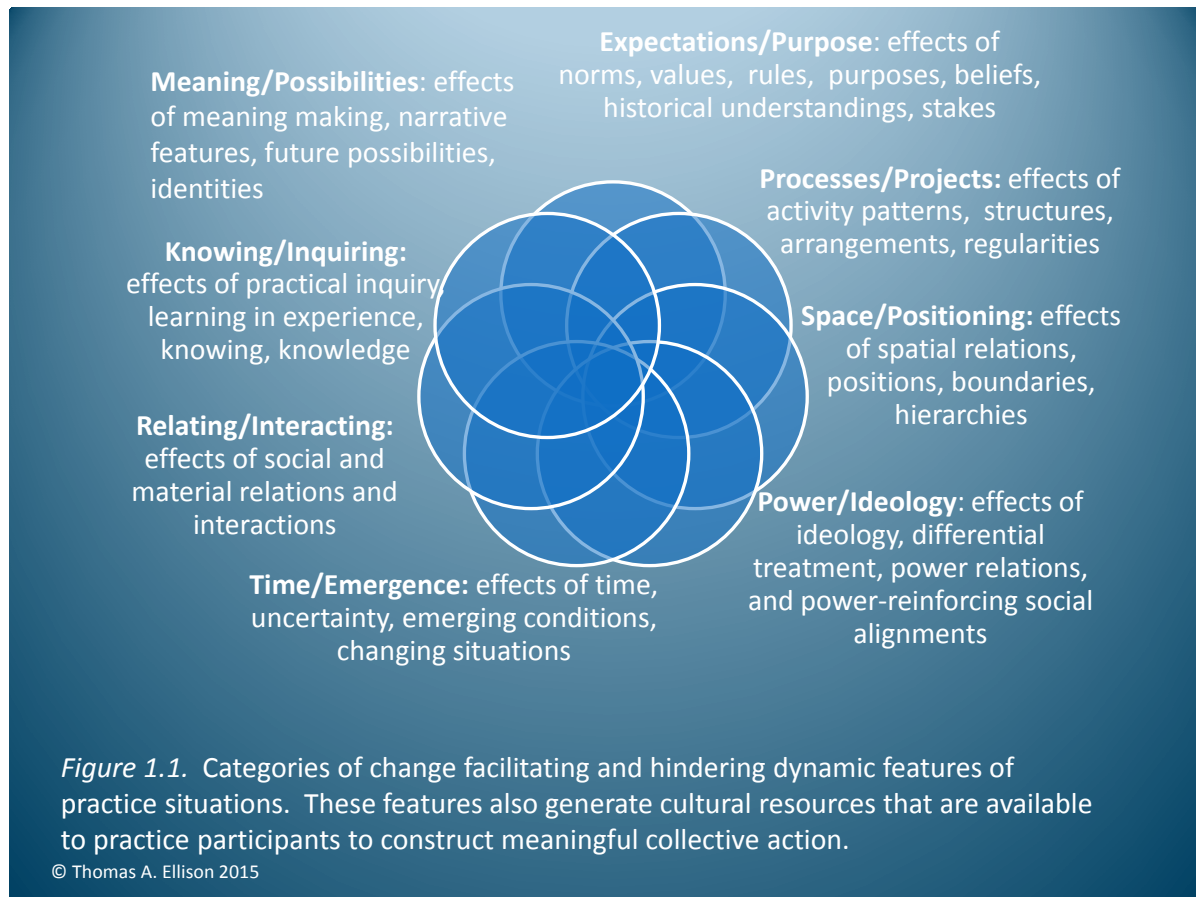
The practice literature already encompasses a cultural perspective, but I did not undertake this study with a preconceived cultural focus. The initial interviews and developing narrative themes brought cultural considerations to the forefront. At one level, culture change is a process of addition: New connections and new forms of collaboration will be required to scale up innovations and integrate with health systems research, resulting in new collective meanings and relations and activities of significance that will be added to the cultural webs of habitual action. But everyone already has no time, and they have to keep moving forward within existing complexes of practice relations and activities. From this perspective culture change must also

involve subtraction: Habitual actions must be dropped in the process of re-weaving the webs of cultural significance in health care disciplines. These observations confirm one of the central conclusions of this study: Culture change is essential to the creation of transformed health care systems; professionals need to make room for new relations and activities by eliminating some traditional routines and performances.

Features of situations dynamically facilitate and hinder collective, change-oriented action. My research was sensitized to identify dynamic influences of features of situations. Interview participants did most of the identifying when they talked about what was important to them. Conducting those interviews over time produced changing perceptions on the situation and the influences that were at work. The dynamics framework depicted in Figure 1.1 offers possible categories of such influences. The dynamic influences had significance in the "Building a Learning Health System" narrative to the extent that interview participants identified particular conditions as notable parts of the storyline in influencing what was being done and the possibilities for future action that were opened up or constrained by the sources of dynamic influence. The interviews also included some indications that participants recognized such influences as significant in terms of how they were affecting the ongoing story and possibilities. A key example was Dr. Hess' consideration of departmental silos as being sources not only of change-facilitating research, but also of isolation and research methods that were insensitive to clinician and patient needs. Her focus on issues of making connections across silos, accessing databases, and establishing governance for community clinic research illustrate the paradigm for HSIR's work: facilitate access to resources and capabilities necessary to achieve change-oriented objectives and work to address the problems that are hindering necessary action. Those particular issues had particular impact on HSIR's future prospects because the solving of those

issues could be leveraged into a substantial increase in health systems research through new collaborations that would not require the persistent involvement of the HSIR team.

As my research progressed, I was open to discoveries that would change the dynamics framework shown in Figure 1.1. The interview with Dr. Dean Li and his reference to the people, time, space, and dollars (PTSD) resource model caused me to add the category of space and positioning to the framework. At the University of Utah, the term space literally referred to physical building space and the potential significance of physical adjacencies. I interpreted space more broadly to include organizational positioning, hierarchies, and even strategic positioning. In my thinking, the silos were a clear example of this category of influence. But my analysis in the preceding chapter confirmed that the silos were really complexes presenting and generating dynamic influence in each category I had identified. The observation has important implications: If one were to take the silos as a problem of organizational structure, one might look to prescribe solutions involving restructuring. The HSIR organizers adopted a more comprehensive and nuanced approach to the silos in their actions by addressing dynamic influences that might be categorized in several of Figure 1.1's dynamic categories. Specifically, the organizers operated to identify impactful changes to customary procedures, worked across organizational boundaries, worked to align senior leaders and partners throughout University of Utah Health Care, created new relations and forms of interaction, and advocated for new possibilities. At the same time, they adjusted their work based on emerging factors so as to keep their coalition of leaders and partners aligned and supportive of their work. In short, they acted to create favorable dynamics that would facilitate the HSIR's success across the full range of the dynamic categories I had identified. Understanding the full range of dynamic influences and the ways they could affect possible stories is a more holistic way to address those influences.

Figure 1.1. Categories of change facilitating and hindering dynamic features of practice situations. These features also generate cultural resources that are available to practice participants to construct meaningful collective action.
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Culture was not only evident in the dynamic influences of the academic and clinical silos, but also in ways that implicated meaning making. In particular the use of vague terms to describe gaps and commitments identified meaning making opportunities. Gaps in care, especially those occurring at the point of care transitions between inpatient and outpatient clinicians or between facilities, provide evidence of cultural problems in language translation and the inadequacy of a common vocabulary to coordinate actions in such situations. Such care transitions were described in terms of "translation," further confirming the absence of an adequate vocabulary to allow coordination of care across specialties and facilities. In light of these discoveries, I would add language and vocabulary as a separate category of dynamic influence and supplement language-related conceptual tools in all future studies using the dynamics framework.

Practical inquiry is the creative discovery of problems and ideas. HSIR organizers embodied Dewey's (1938) concepts relating to inquiry. Rather than consisting solely of mental processes, problem setting and problem solving depended on actively experimenting and creating new relations and procedures in order to discover what worked and did not work. In the case of creating new relations, HSIR experimented to create an online matching service populated with data regarding research interests, and they sought to create new procedures for conducting research in the community clinics. These were trial-and-error efforts; the most critical aspect of their organizing work was that they continued progressively to seek new discoveries.

Problem setting and problem solving are characteristically thought of as processes of analysis and planning. Ideas in progress evident in the HSIR story could not be derived solely through analysis, and the multiple pathways that HSIR organizers undertook could not be successfully developed through planning exercises alone. Uncertainties and issues that could not be planned for or analyzed away would need to be dealt with. The plot line of the HSIR story reflects exactly these types of issues. HSIR organizers repeatedly used narrative connections and generated explanations of their exploratory activities in narrative terms by connecting actions with plot lines. In turn, their actions remain available to other readers of the HSIR story to gain a narrative understanding of exploratory work in their respective situations.

The bottom line of practical inquiry work in professional life is developing responsiveness to changing conditions and in turn changing the practice worlds and potentially the cultures underlying those respective practices of professionals. Practical inquiry holds the potential to make significant changes in substantial aspects of practice because the very activities of inquiry seek discoveries about questions, issues, and gaps that may suggest paths for improvements and new directions. Merely conducting typical operations does not necessarily

hold the same potential because operations typically drive toward conformity and consistency rather than discovery. The question that remains is how can we tap the creative potential of progressive inquiry and pilot-testing to effect significant changes in practice? I will offer some possible answers in the final section of this dissertation in a discussion of applying Dewey's (1938) conception of practical inquiry and practice study tools and principles to enhance culture change.

Collective practical inquiry is essential to organizing and adaptive organizational action. One of the keys to understanding the organizing activities of the HSIR organizers was that they involved practical inquiry that was collective. Collective inquiry not only involved shared vision, common goals, or activities that were adequately coordinated. These are components of more traditional models of strategy and planning. The performing of inquiry itself was a distributed activity among multiple inquirers who each sought to bring a unique perspective to the table. At one level this was apparent in the separate interests and work of the HSIR organizers themselves. Dr. Rachel Hess benefitted from her deep experiences as a physician and health services researcher; Kim Bowman brought to the table his experience with grant administration and the management of operations within the University system; and Lauren Kirwan contributed an interest in academics and a strong sense of relational understanding. Dr. Hess envisioned building an even more diverse team that could increase the capacities of the HSIR Program to make diverse contributions over time. Team members would contribute going forward by continuing to be involved with different people and projects depending on their respective interests and would continue to make unique discoveries from their own backgrounds and perspectives. At an even larger level, the participants in BLD and the leaders in University
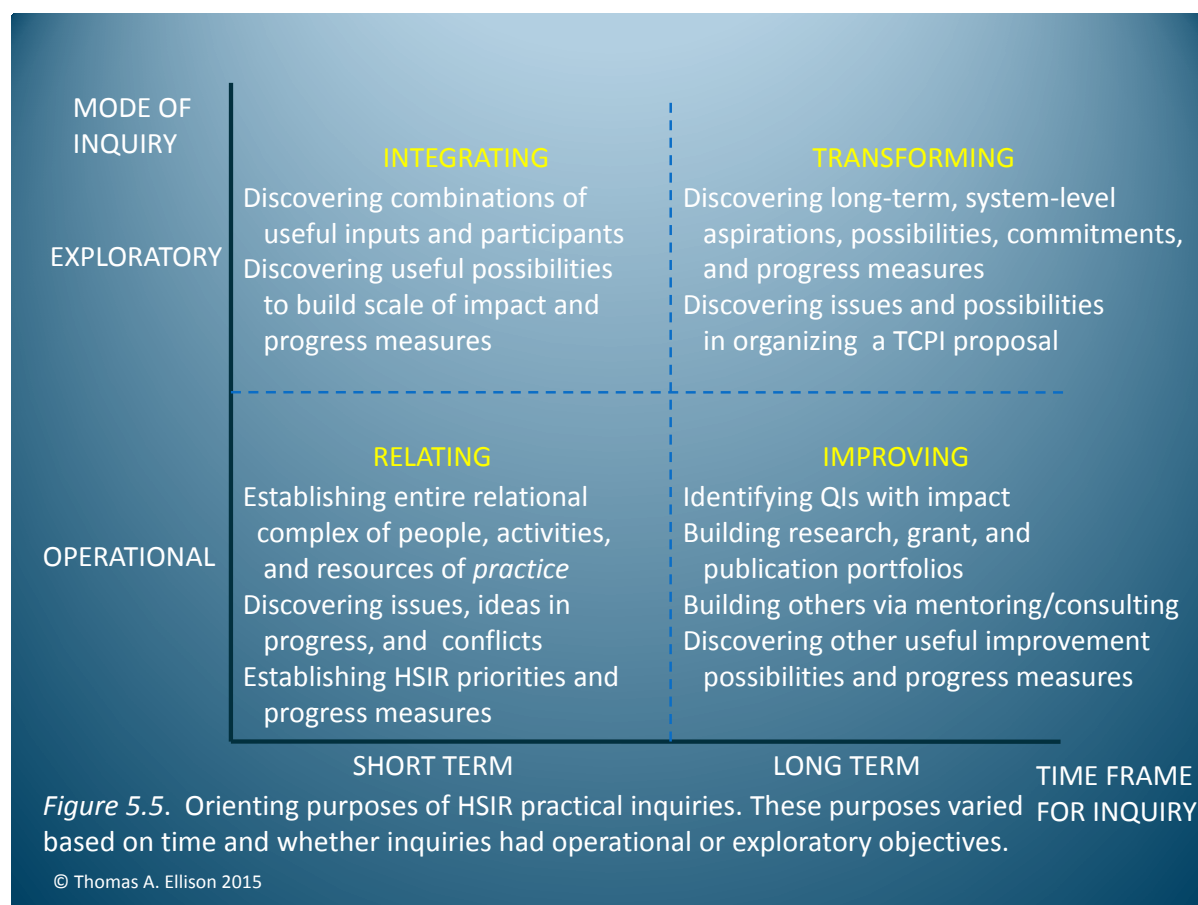
of Utah Health Care were also contributors to the larger inquiry about how to change health care delivery and transform health systems.

The nature of collective practical inquiry differs from the nature of personal inquiry in one key respect beyond involving multiple participants. Collective inquiry processes need to encourage a broad engagement of participants to assure that the inquiry benefits from the different perspectives and different ideas in progress that may be contributed by such participants. The diversity in perspectives and positions also contributes to the collective capabilities to recognize emergent features of the situation shared by participants and explore what the implications of emergent features might be. While personal inquiry may be described as refining and narrowing problems toward single solutions, collective inquiry is expansive: The success of collective practical inquiry depends on recognizing and benefitting from different capabilities and views. The challenge of collective inquiry, then, is developing ways to assure full participation and contribution by participants from their differing perspectives. The work of HSIR organizers to connect potential research collaborators and address community clinic access issues can be seen as enhancing broad participation and contributions of many with different perspectives toward health care delivery transformation. Developing strategies with integrating effects would serve a similar purpose. If such broad participation and contributions can be achieved, then two important results will occur: First, individual participants will be able to see their professional contributions through new collaborative work involving health systems research and care delivery changes that could not have been produced from individual actions. Second, the prospects for health systems and cultural transformation will also be enhanced by the breadth of participation and diversity of contributions.

Implications for Leadership and Change Practice and Theory

"Building a Learning Health System" demonstrates that Dr. Rachel Hess, Kim Bowman, and Lauren Kirwan are leading ground-level efforts to change health care delivery and systems in the simplest sense of that term; they are moving first to organize and demonstrate ways that health systems research may contribute to improved health care. This leadership, however, is not focused on traditional productive and strategic concerns of organizational executives and managers. And while their work is oriented toward producing change in health care, their activities do not model traditional organizational change approaches. This section will provide some thoughts about how the HSIR organizing story informs leadership practice and certain leadership and change theories.

Exploratory inquiry and leadership and change practice. As I presented in the Introduction, my interest in pursuing a study of professionals experiencing substantial changes in their practices stemmed from my experience. I wanted to understand why management theories seemed to disconnect when applied to professional life and also to explore what could be learned from professionals in action. As summarized in the preceding section, my discoveries from the HSIR organizing study particularly emphasized collective practical inquiry and related organizing activities in professional and organizational life as well as the dynamics and cultural influences that impacted such activities. That summary suggests that practical inquiry and organizing activities present special characteristics that are not typical of activities prescribed by typical management theories. These characteristics are particularly highlighted in the pursuit of what I will call exploratory inquiry.

Figure 5.5. Orienting purposes of HSIR practical inquiries. These purposes varied based on time and whether inquiries had operational or exploratory objectives.

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As noted in the previous chapter and as reflected on Figure 5.5, some of the objectives envisioned by HSIR organizers involved activities that were removed from current operational concerns and uncertain either by reason of the scale of collaboration and outcomes envisioned (participating in the Transforming Clinical Practice Initiative is an example) and also the time frame required for the outcomes to be achieved (health systems transformation is an example). Figure 5.5 demonstrates that different purposes of inquiry may be conducted over shorter or longer time frames. That figure also depicts that practical inquiry may be located on a scale that ranges from very operational to very exploratory. Focusing on exploratory inquiry in zones of uncertainty helps to highlight the characteristics of exploratory inquiry and how such inquiry may be different from typical management approaches. A partial comparative list of

characteristics of management activities and collective exploratory inquiry is set forth in the

following Table 6.1:

Table 6.1

Characteristics of Exploratory Inquiry and Management Activities in HSIR Organizing

Characteristics	Mode of activity: Management activities	Mode of activity: Collective exploratory inquiry
Worldview	Stable and predictable	Emergent and uncertain
Conception of power	Hierarchical and positional	Located in emergent social alignments oriented to sub-cultures
Orientation of activities	Leadership directives, established goals, and formal plans	Culturally generated and politically supported commitments to long-term, significant outcomes
Central purpose	Achieving control and predictability	Creating and changing conditions of the situation and responding to changing circumstances
Focus of attention	Operations	Discovering emergent possibilities
Level of key activities	Senior executives and management	Ground-level performers
Mode of action	Evaluating and directing	Learning through new interactions and making new connections
Mode of organizing	Delegating	Self-organizing
Essential leadership	Positional and delegated	Massively distributed exercises of collective action that remove obstacles and make progress
Key success factors	Obtaining consistency and control	Preserving difference and multiple pathways
Change paradigm	Improvement	Integration and transformation
Locus of change	Technical processes, engineered systems, technology	Organizational and professional sub-cultures
Knowledge paradigm	Theoretical knowledge, which is abstracted from experience, taught, and applied	Practical knowing, which is generated in responsive relations oriented to situated details
Locus of knowledge	Theories and concepts of specialized knowledge	Local knowing best evidenced in practical collective activities that work
Knowledge transmission	Developing and teaching mid-range theories and skill training within disciplines	Acting collectively across disciplinary boundaries and generating storylines

Typical inquiry methods	Scientific random controlled trials and comparative effectiveness studies	New relations and interactions, pilot testing, and drawing connections and implications
Key tools	Analyzing, strategizing, and planning	Questioning, narrating, designing, and experimenting
Emphasis of tools	Understanding the pieces while growing and improving operations	Understanding the holistic storylines and generating new future possibilities
Benchmarks	Conformance to standards based on historical data	Locally created measures of progress toward future possibilities

While some of my characterizations may be questioned, the exercise in Table 6.1 demonstrates that very different assumptions, methods, and purposes are pursued in typical exploratory and management activities. The story of HSIR organizers illustrates that exploratory inquiry was central to their work and the future prospects of significant health care delivery reform. While ongoing operations within health care will always be managed in traditional ways to achieve consistency and control, the HSIR study also documents that reorganizing the processes and systems of care will necessarily involve practical and exploratory inquiry. What are the implications of these observations for leadership and change practice?

Most fundamentally, leadership and change practice should attend to the features of exploratory inquiry listed in Table 6.1. These features reflect a different worldview than typical command-and-control management. They also imply the need to develop very different strategies and social practices to achieve leadership and change outcomes. Some of these strategies and practices are described later.

Moreover, collective practical and exploratory inquiries should be encouraged and nurtured. A narrow focus within collectives on goal-directed, productive activities may not create the conditions for discovery that could initiate adaptive changes in collective activities. Because exploratory inquiry is oriented to discovery and creating possibilities, inquiry may need

to operate outside of planning and control regimes. Principles of enabling leadership developed within complexity leadership theory (Uhl-Bien et al., 2007) are helpful in illustrating this point. Complexity leadership theory separates administrative, adaptive, and enabling leadership functions and identifies key roles for enabling leadership. These roles include creating the conditions to facilitate adaptive activities, keeping administrative functions from having adverse impacts, and integrating creative results from adaptive actions.

Another concern of leadership and change practice should be to put dynamics in place that will produce creative knowledge and action through practical inquiry. The dynamics framework in Figure 1.2 illustrates how specific categories of dynamic influences might be operating in practical and exploratory inquiries to facilitate or hinder adaptive change.
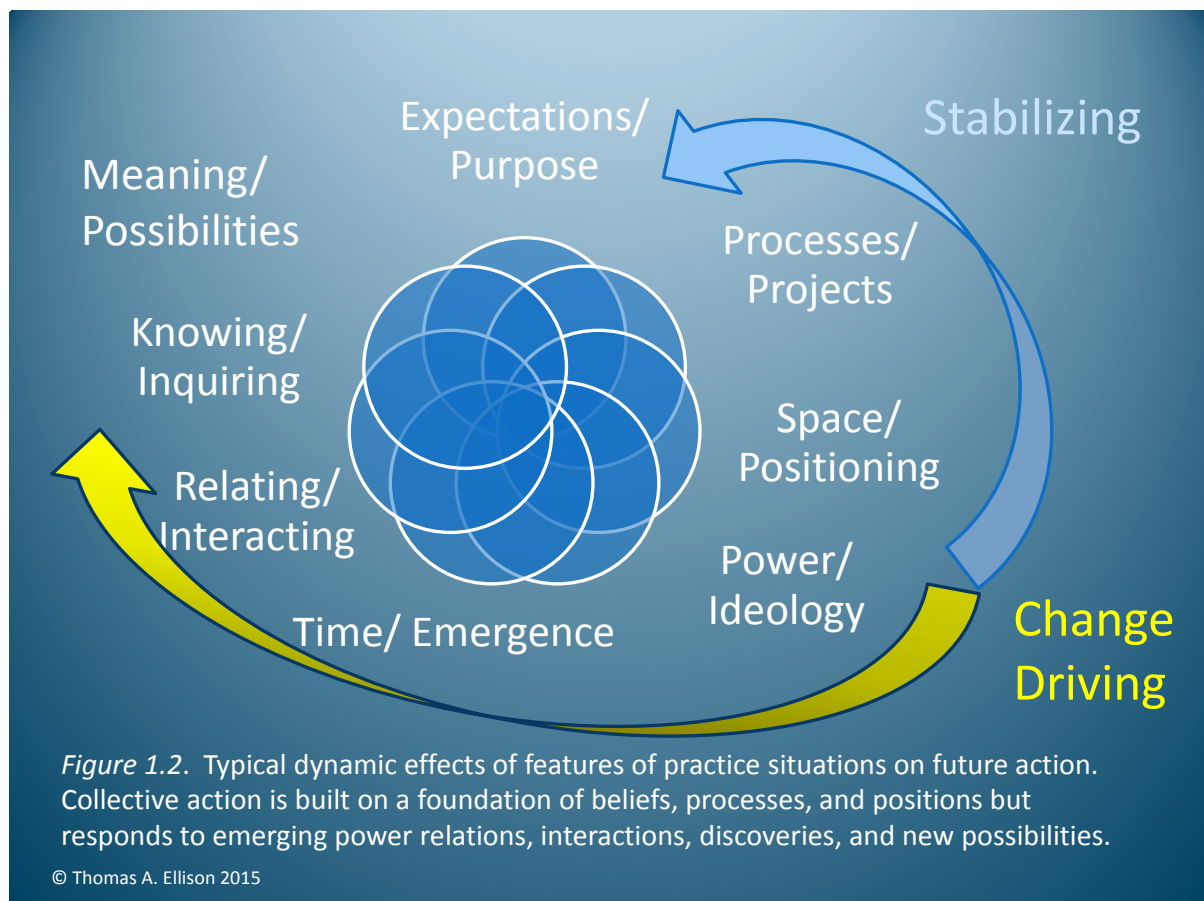

Figure 1.2. Typical dynamic effects of features of practice situations on future action. Collective action is built on a foundation of beliefs, processes, and positions but responds to emerging power relations, interactions, discoveries, and new possibilities.
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Table 2.1[79] provides some additional details about those dynamic categories that could be used to create enabling leadership strategies. Some essential change-oriented activities and outcomes identified on Table 2.1 should be facilitated, including:

- re-interpreting understandings and expectations;

- reorganizing processes and projects;

- re-positioning roles, strategies, and structures;

- realigning agents and resources;

- reacting to emerging conditions and discoveries;

- relating and interacting differently;

- re-learning, inquiring, and experimenting; and

- reconstructing narratives and possibilities.

As noted earlier, re-creating an action-oriented collective vocabulary may also be essential in situations involving strong and potentially conflicting sub-cultures. These types of strategies should operate as tools to facilitate creative change-oriented inquiry and minimize the change-hindering effects of other dynamic influences.

Leadership and change practice in a learning organization. Just enabling practical inquiry is not enough. Leadership must increase the discoveries that might occur by encouraging new forms of inquiry and learning on a wide scale. The HSIR study demonstrated that organizing must be focused on creating diverse and widely distributed capabilities to engage in collaborative practical and exploratory inquiry. In order to benefit from such inquiry, however,

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[79] Table 2.1 is located on page 138.

such capabilities must operate in a systematic way. Brown and Duguid (1991) observed that practical learning occurred in informal communities of practice that developed around specific practical needs and interests in the course of ongoing activity. The role of leadership in their view is "the *detection* and *support* of emergent or existing communities" (p. 49). They drew a sharp contrast between informal communities of practice and the task forces or other groups that are formed by organizations to carry out specific projects. The problem with the inquiry that occurs in such groups is that it may already be too confined by narrow administrative purposes of specific task forces.

The HSIR study offers some guidance to the leaders of the systems of discovery that must operate within organizations. As illustrated by the development of the Value Driven Outcomes initiative and the organizing of the HSIR Program, teams that are sufficiently multi-disciplinary and charged to create sufficiently broad and challenging outcomes may generate practical discoveries of significance. In other circumstances, similar creative discoveries might be sufficiently directed and stimulated by open-ended challenging questions rather than by narrow directives. Leadership might ask, "what are some keys questions and issues that we need to address?" Such issues and questions could be posed as areas for further inquiry. The HSIR study also revealed a lack of basic information about research interests that was hindering the self-organization that might otherwise develop informal communities of practice. In organizations of limited size, such information pertinent to self-organizing cross-disciplinary teams may be generated informally. In large organizations, formal systems may need to fill in the gaps. But HSIR's efforts in developing a website to facilitate new connections on a very large scale took time and revealed technical difficulties. Consistent with the idea of communities of practice, the PCORI interest group presents an alternative model of professionals who met

together around a topic of common interest. Perhaps groups would self-organize if leadership identified areas of need for inquiries and creative action and then supported the groups that self-organized in response. While these functions of enabling leadership could be exercised at multiple levels within an organization, in the bureaucracies of health care institutions, creating centralized systems of discovery may be required with the support of institutional leadership.

Practical inquiry is not just about making discoveries but also about changing the conditions that presented the questions and issues in the first place. Dr. Dean Li commented that the HSIR Program should be evaluated in the context of an overall organizational strategy for change, and HSIR organizing activities identified and acted to address specific conditions that were hindering change-oriented action. Practical and exploratory inquiries involve acting to change and improve a situation where inquiry processes incorporate both experimenting and implementing discoveries. Collective inquiry, then, is the essential mode of collective action that could produce self-directed organizational becoming (Tsoukas & Chia, 2002) and implement comprehensive change strategies. Within University of Utah Health Care, this conclusion means that leadership should facilitate inquiry that is focused on the scaling and integrating of discoveries into practice. Other learning-oriented strategies may not be up to the task of transforming health systems. For example, while the dissemination of health systems research through publication will remain an important strategy of the HSIR Program, the publication process may be too slow to accomplish organizational and systems change objectives, and may be too removed from contexts of practice to incorporate the local knowing from ideas in progress and measures of progress that is essential to scaling. Training is a typical learning strategy, but training assumes that the right processes can be and have been codified. While findings regarding specific process improvements must continue to be generated to improve health care

delivery, even wide-spread improvement activities will not necessarily produce scale and integration contemplated by generic strategies prescribed to transform health care (Porter & Lee, 2013).

Because the paths to scale operations toward larger organizational and systems outcomes will involve new relations and interactions and will encounter surprises, conflicts, and uncertainties along the way, such paths cannot be designed and will need to be discovered. Extending Weick's (2001) analogies, leadership in a world of path making encourages wide-spread experiences with unfamiliar terrain and provides compass-like tools (as distinguished from road maps) that may help to initiate and coordinate collective discoveries on a wide scale. Leadership for path making values reports of improvisation, changes in direction, and substitution of new light tools for heavy ones that are not adaptable to the changing terrain. Leadership that creates new paths starts with the statement "I don't know" and then "searches for the better question, accepts inexperience, stays in motion, channels decisions to those with the best knowledge of the matter at hand, crafts good stories, is obsessed with updating, encourages improvisation, and is deeply aware of personal ignorance" (p. 94). Path-making leadership reflecting these qualities must be widely distributed throughout an organization.

Creating an integrating organization. Leadership in health care must refocus efforts to use inquiry to discover new ways to scale and integrate toward organizational and systems change outcomes. The challenges of building scale in both discovery and implementation suggest that a learning organization in health care should be re-conceived as an integrating organization. Such an organization would use discoveries from practical and exploratory inquiry to integrate otherwise isolated pieces of useful scientific knowledge, professional skills and expertise, process improvement know-how, practical local knowing, experiences preserved in

storylines, equipment, questions, issues, gaps, and other features of the situation. Integrating

inquiry would be directed to create multiple pathways toward holistic, practical systems of care.

Such integrating operations could be encouraged to occur at all levels of scale within the

organization. Organizing activities of leaders would attend to creating integrating opportunities

and experiences and building integrating functions and capabilities which present themselves as

real possibilities to generate significant changes to health care delivery and health systems.

Leadership capability to recognize implications for larger health systems change and to build

stories of changing practices and change outcomes would be central to integrative inquiry and

organizing.

      Creating culture change. Because new pathways implicate culture and culture change,

path-making leadership must also be culturally aware and use practical and exploratory inquiry

to change culture. The transformation of health care systems will require new collective

activities and accountability for new collective outcomes. Ultimately, the broad scale of

integrating operations and systems transformation must be grounded in culture and processes

implicating culture change. As suggested earlier, such transformation will not occur unless

accompanied by both additions to and subtractions from the cultural webs of habitual actions in

health care. This point likely also applies to many other organizational settings where

professionals are facing adaptive challenges. In addition to implementing the list of change-

promoting activities and outcomes presented earlier, I will also offer some comments in the final

section of this chapter about how practical and exploratory inquiry employing Dewey's (1938)

conceptions and the principles and tools of the practice study methodology might also be used to

facilitate culture change.

The implications of practical and exploratory inquiry for leadership and change

theory. In the preceding chapter I reviewed the implications of the "Building a Learning Health System" narrative for transforming health care. So far in this chapter I have demonstrated the relationship of collective practical inquiry, and in particular exploratory inquiry, to leadership and change practice. These discussions taken together acknowledge the important cultural and transformative roles such inquiry may play in organizational life and the essential functions of leadership in enabling such inquiry and integrating its discoveries into organizational life. Significant changes in the practical activities of professionals implicated by integrative strategies will trigger cultural meaning making processes. Do these implications have any significance for leadership and change theory? Leadership and change theories have come together in conceptions of adaptive leadership (Heifetz, 1994; Heifetz et al., 2009); Uhl-Bien et al., 2007). At minimum, these theories recognize the importance of leadership to adaptive as well as operational functions. As noted earlier, complexity leadership theory (Uhl-Bien et al., 2007) makes a particularly useful distinction between adaptive and administrative leadership functions and outcomes as well as identifying the roles and objectives of enabling leadership. The earlier discussion of leadership practices demonstrated the connections among exploratory inquiry, enabling leadership, and adaptive leadership in its various theoretical forms. From these perspectives, collective practical inquiry and exploratory inquiry constitute adaptive tools and strategies to be facilitated by enabling leadership functions.

Theories of distributed leadership (Gronn, 2002) and shared leadership (Pearce & Conger, 2003) also anticipate the widely distributed nature of leadership required to conduct and sustain inquiry. These theories are consistent with the ground-level perspective urged in the

HSIR organizing study and emphasize the importance of having widely distributed leadership that engages in and uses the discoveries from inquiry.

Leadership has also been conceived as residing in leadership outcomes of direction, alignment, and commitment (DAC) (Drath et al., 2008). This particular theoretical perspective provides an alternative framework to explore the theoretical importance of collective practical inquiry. Leadership under this theory is located in any combination of social practices that produce DAC rather than in positions and hierarchies (p. 636). DAC theory defines direction, alignment, and commitment from a collective perspective:

> (1) direction: widespread agreement in a collective on overall goals, aims, and mission; (2) alignment: the organization and coordination of knowledge and work in a collective; and (3) commitment: the willingness of members of a collective to subsume their own interests and benefit within the collective interest and benefit. (p. 636)

These theoretical moves of DAC theory accommodate the features of practical inquiry within a possible leadership framework: The practical inquiry and organizing activities of HSIR organizers worked toward achieving agreement on direction, aligning work, and achieving commitment to change-oriented outcomes. Arguably, such outcomes would not have been achieved in the HSIR study without the practical inquiry and organizing that occurred. I would propose a different line of theory development implicating practical and exploratory inquiry in light of and consistent with the essential purposes of the DAC theory.

DAC theory (Drath et al., 2008) purports to identify an ontology of leadership—the essential effects and outcomes that mark the exercise of leadership itself. This approach seeks to identify what makes a difference in *practice* to collective outcomes; if no difference is produced in practice, then theorizing about an outcome would make no difference (p. 636). The conclusions in this chapter demonstrate that practical inquiry, and exploratory inquiry in particular, may contribute important outcomes in the form of discoveries that are not provided

through other forms of collective work and management activities. Among the essential discoveries might be the particulars of direction, alignment, and commitment for any given situation involving inquiry. Because such situations may be uncertain and in conflict, inquiry may be required just to achieve the widespread agreement on goals, sufficient new understandings to align work and knowledge, and the new meaning making required to develop collective commitments for further action.
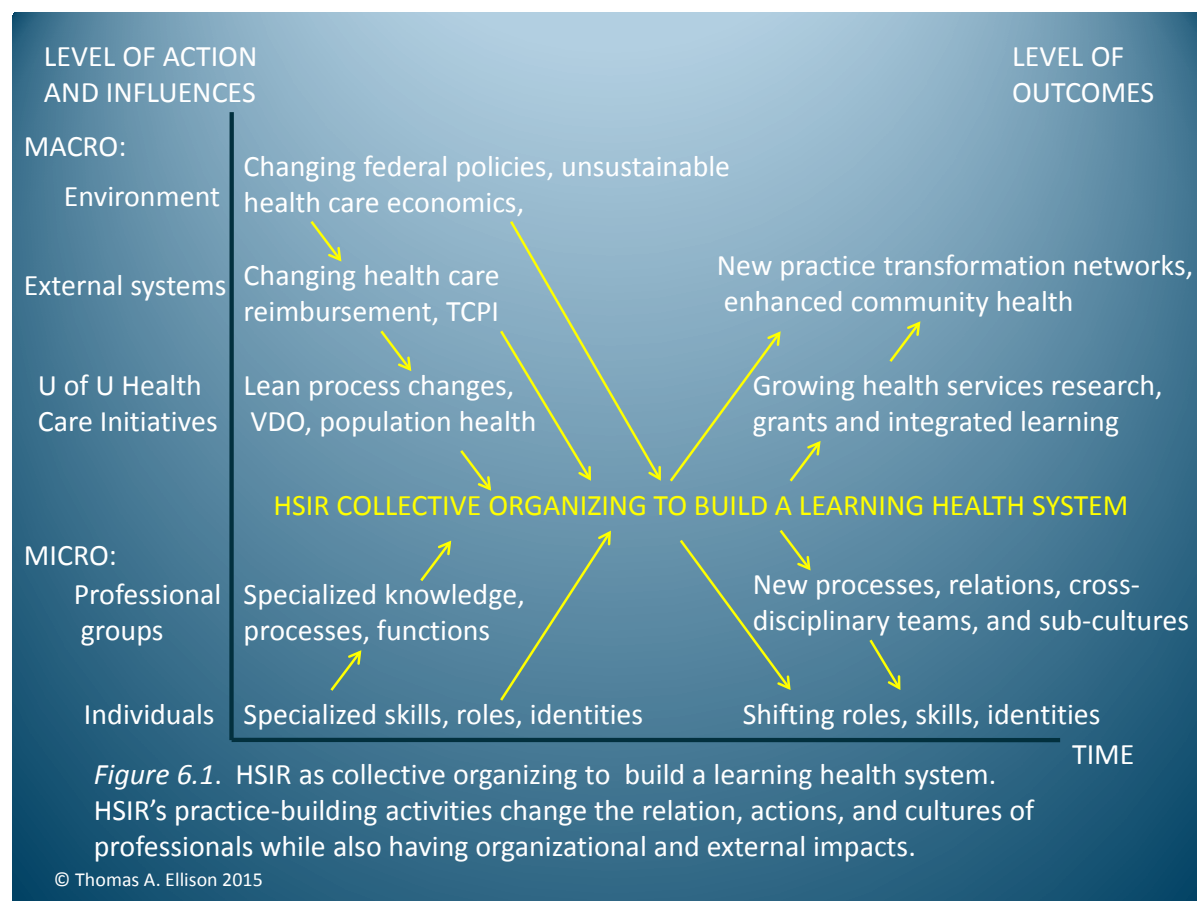
DAC theorists put forth the DAC ontology to help to "explain *how people who share work in collectives produce direction, alignment, and commitment*" (p. 636). Given the potentially significant and unique contributions to collective life offered by practical inquiry in both operational and exploratory contexts, should the DAC ontology be modified to include inquiry as an additional, essential outcome of leadership? By making such an addition, DACI theory would also seek to discover the social practices that are essential to promote inquiry and its outcomes as integral features of leadership and explain how people share work to produce inquiry. Such inquiries concerning social practices and distributed collective action might help to increase attention to the special contributions of practical inquiry to the work of leaders and to the development of new forms of collective action, especially in conditions of uncertainty where adaptive actions are required. The study of the social practices and distributed collective action that support inquiry would further enhance understanding of cultural and organizational change in collectives. The work and theories of leadership ultimately concern the success of collective life, and those theories should incorporate practical inquiry as an essential leadership capability to address the need for collective change and renewal.

Methods Matter

My concluding thoughts about the HSIR study relate to the practice study methodology. As noted in the Introduction, all methods are selected to produce certain desired outcomes (Bruner, 1990; Kuhn, 1970). The practice study methodology was created to explore the ground-level perspectives and practical understandings of those who are engaged in collective, change-producing work in organizational settings. The starting point for exploratory research is to find out what is going on, and the place to start with such research is with the people who are at the center of change-oriented activities. The open-ended interview approach was successful in allowing participants to identify not only what was happening but also what was meaningful and significant to each of them. In the balance of this section I will explore the contributions of the practice study methodology, some of its implications for further research of situations where a practice perspective might be applied, and the criteria I would propose to evaluate research using the methodology. In the final section, I will outline the application of a practice study principles and tools as a cultural change method.

Evaluating practice study research. The practice study methodology is potentially significant in developing a multi-level exploratory method to study professional life in organizational settings. As emphasized in the introduction, the *practice* of professionals is a dynamic complex of relations and not just a bundle of specialized knowledge and skills (Rouse, 1996). The methodology allows consideration of the full range of environmental, organizational, professional, and personal factors that combine to influence collective action in organizational life. It also enhances an understanding of how collective action might, in turn, influence individual and collective life and outcomes. Figure 2.1 reflected the basic logic of the multi-level research approach offered by the methodology and its particular focus on meso-level

action. [80] The meso-level perspective achieved in this study of HSIR organizing was the

collective, *practice*-building perspective adopted in the Introduction. I have modified some of

the details on that figure to create a new Figure 6.1, which reflects some of the contributing

features and possible outcomes of HSIR organizing and *practice*-building.

Figure 6.1. HSIR as collective organizing to build a learning health system. HSIR's practice-building activities change the relation, actions, and cultures of professionals while also having organizational and external impacts.
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Narratives are central to the practice study methodology. The methodology presents a

package of principles and techniques that are intended to capture the power of narratives and

narrative understanding. In the study of HSIR organizing, the approach allowed the presenting

of important narrative perspectives, including:

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[80] Figure 2.1 is located on page 78.

- the composite "Building a Learning Health System" narrative;

- the intertwined stories of HSIR organizers and other leaders who saw HSIR's work from different views;

- a holistic narrative thematic analysis reflecting different storylines;

- a more detailed analysis of cultural, dynamic, and narrative resources and their contributions toward a holistic narrative understanding of the HSIR story;

- an emphasis on narrative resources, including evidence of efforts to articulate narrative unity among various stories in play in the situation; and,

- an emphasis on the key theme of this chapter, a story of practical inquiry.

These narrative perspectives are significant because they provide a way to enhance understanding of a *practice* situation through research that does not depend upon or become narrowed by the application of available theories. The preceding chapter was offered to demonstrate how narrative perspectives may enhance understanding of a particular situation and also how a holistic understanding may be further enhanced by incorporating the conceptual tools offered by theories and studies influenced by theories. Further, by preserving narrative perspectives, capturing the work of HSIR organizers in narrative form allows that work to be read by others for application in their situations.

In addition to emphasizing narratives and narrative understanding, the practice study methodology also allowed for the exploration of the HSIR story through a dynamic and cultural lens. The HSIR study demonstrated that the methodology may be usefully deployed to identify cultural and dynamic resources with particular significance to the work of organizing new relations, interactions, and programs in academic medicine. While such influences are likely to vary widely in different circumstances, the idea of identifying and analyzing the effects of

cultural and dynamic features of situations could be applied to widely divergent research situations. Over time, applying the methodology to different situations might improve an understanding of cultural and dynamic resources as the inventory of such influences is documented in the context of developing storylines.

The further application of the practice study methodology to additional situations will certainly refine the list of contributions it may make and whether any persistent patterns or theory may develop from its application. But the foregoing commentary demonstrates that practice studies offer a particular combination of contributions. The practice study methodology adopts a research stance with respect to *practice* as a perspective (Orlikowski, 2010), situated action and knowing, the need to obtain and preserve potentially divergent views about matters of collective concern, cultural and dynamic awareness, and the application of narrative-based analysis and interpretation. These particular features of the methodology are also reflected in this practice study of HSIR organizing. These factors, considered together, suggest that studies of *practice* should be evaluated using criteria that are attuned to the purposes and features of the methodology rather than deploying more traditional evaluation criteria.

The following Table 6.2 reflects the criteria I propose and provides some comparisons to more traditional case study evaluation criteria and the features of qualitative research traditions:

Table 6.2

Evaluation Criteria for Studies Using the Practice Study Methodology

General Criteria	
Practice Study Methodology Evaluation Criteria and Underlying Questions	Traditional Case Study Research Evaluation Criteria and Underlying Questions (Yin, 2009)[81]
Exploratory reliability—do data-related procedures focus on participant actions and provide evidence grounded in reports of participants and features of the situation?	Reliability—may data-related procedures be replicated to achieve same results?
Issues validity—are the issues of the study generated by the participants and are their actions responsive or directed to those issues?	Construct validity—does the study provide evidence for the concepts being studied?
Coherence—do the connections and analysis offered by the study create narratives that are reasonably detailed and also holistic and coherent?	Internal validity—does the evidence support causal or explanatory relationships?
Narrative applicability—are the interpretations of the study readable and potentially useful to other readers of the study?	External validity—are the results generalizable or connected to an external body of theory?
Practice-Related Criteria	
Practice Study Methodology Evaluation Criteria and Underlying Questions[82]	Corresponding Feature of Typical Qualitative Research or Similarity with Another Research Tradition
Within practice stance—does the study reflect the positioning and perspectives of participants?	External researcher positioning.

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[81] As noted by Stake (1995), the criteria for evaluating instrumental case studies, such as those proposed by Yin (2009) and used in Table 6.2, are driven by the need to develop generalizable conclusions or to connect to theory (p. 77); such criteria are not applicable to intrinsic case studies, where the priority of the researcher is on narratives describing and interpreting the case to enhance understanding of an interesting case (p. 77).

[82] These criteria are drawn from the materials and sources describing the *practice* stance in the Introduction, practice theories in the literature review, and the principles of the practice study methodology in the methodology chapter.

Future-oriented—does the study reflect the future orientation of participants?	Evaluative, emphasizing researcher-supplied explanations and causal relations.
Collective focus—does the study maintain a focus on collective issues, outcomes, and developing of collective meaning?	Entity focus, emphasizing individuals, groups, organizations, aggregated individual data, and cases as bounded entities.
Knowledge as situated knowing from experience and relational interactions—does the study reflect the practical inquiry and knowing of participants?	Knowledge as researcher-supplied representations or constructs, usually evaluated in terms of externally supplied theory or identified to develop generally applicable concepts or theory.
Sensitive to situated dynamics—does the study identify and explore the features of the situation that are hindering or facilitating actions and outcomes and responses to emergent matters?	Research focused on bounded situations.
Sensitive to political concerns—does the study reflect matters bearing on power and the operation of discourses, rhetoric, ideology, and social alignments that reinforce power relations?	Similar to the emphasis of studies grounded in critical theories and feminist studies of scientific practices.
Culturally aware—does the study emphasize matters that are meaningful and significant to participants, what is at stake in continuing or changing existing practices, and issues and conflicts grounded in meaning and meaning making?	Similar to the emphasis of ethnographies and culture studies.
Multi-level scope—does the study address matters from individual, organizational, and system levels while maintaining a principal focus on the level of matters at issue and at stake in the practice situation?	Most studies are either individual level or macro level in focus.
Researcher accountability—does the study reflect the positioning of the researcher and the influence and contributions of the researcher in the study?	Similar to the concerns of most qualitative research traditions.

These criteria should also be re-evaluated over time as the methodology is further applied to other situations and refined.

Applying Deweyan inquiry and practice study principles and tools to enhance culture change. Dewey's (1938) conception of practical inquiry incorporates some specific guidance about the operations of practical inquiry processes. The practice study methodology

incorporates the principles and tools of an exploratory inquiry approach that could be applied collectively in change processes by participants to enhance their efforts to develop new forms of collective, change-oriented action. Together, these ideas help to describe key features of an inquiry process that could be used to enhance culture change in organizational settings.

Dewey (1938) did not propose specific process steps to be followed in all inquiries. In fact, Dewey was clear that the particular qualities of situations, and not uncertainty in general, would provide the impetus for an inquiry and govern the particular procedures to address the conditions that were making the situation questionable (p. 105). His description of inquiry, however, suggests that inquiry typically proceeds through two general phases: first, the initiation of inquiry with respect to issues rendering a situation indeterminate, confused, obscure, or conflicted; and second, the conduct of progressive issue framing, problem setting, relation building, and experimentation to make the situation more actionable (pp. 101-119). These phases presume progressively deeper involvement in the situation.

The starting point for inquiry is to identify an actual, problematic situation that requires inquiry (Dewey, 1938, pp. 107-108). Because inquiry introduces changes to a situation, inquiry cannot be pursued hypothetically as an intellectual exercise without reference to the specific qualities and features of a concrete situation. At least some of the participants who are actually engaged in a problematic situation are likely to recognize that something needs to change; what makes the situation problematic is that appropriate collective responses within the situation are unclear, at least unless some features of the situation are changed or something new is introduced. Such situations present questions, such as: "What conditions are settled? What features are hindering action? What is missing in the situation?" In many situations, exploration is required to identify and understand all of the pertinent aspects of the situation. As Dewey

noted, "the cases in which a problem and its probable solution flash upon an inquirer are cases where much prior ingestion and digestion have occurred" (p. 108). Thus Dewey's work presumes that substantial investigation and familiarity with a situation has been developed during the initiation phase as a precondition to testing possible problem/solution combinations. The practice study methodology offers some principles and tools that are useful during the initiation and investigatory phase of an inquiry oriented to changing organizational conditions. These principles and tools include:

- conducting the change process as collective, exploratory inquiry without predetermined or imported theoretical perspectives or predetermined ideas that might limit the scope of inquiry;

- adopting a within-*practice* perspective that persistently seeks to understand the situation from the perspective of participants in the situation and in light of the full range of cultural and dynamic influences that are impacting their work;

- seeking diversity of perspectives and maintaining multiple perspectives in tension; and

- using open-ended data collection techniques with attention to dynamic and cultural influences.

In collective inquiry, not all of the participants who have a stake in the issues and possible outcomes of the inquiry will have had an equivalent opportunity to ingest and digest the conditions of the situation. This initial phase of inquiry provides an essential opportunity to increase engagement, establish new relations among diverse stakeholders and potential contributors, and develop communication and information sharing protocols that will be essential as the inquiry proceeds. The provisional outcomes from this phase of inquiry might be just an

agreed list of key issues to be addressed. Such a list of issues was the outcome of the initial explorations of the HSIR Program organizers.

As the inquiry proceeds forward, Dewey (1938) envisioned inquiry as involving an interplay of ideas—"anticipated consequences (forecasts) of what will happen when certain operations are executed under and with respect to observed conditions" (p. 109)—and observations of changed conditions that are directed by such ideas. This interplay progressively works toward creating a resolved, actionable situation (pp. 110-111). The practice study methodology also provides some principles and tools with respect to this latter phase of inquiry, including:

- driving inquiry forward with progressive question-asking based on emergent issues;

- identifying and developing the driving future possibilities that help to frame larger outcomes and form the basis for broadly recognized commitments

- identifying and developing stories, narrative themes, and the storied connections offered among features of the situation, and possibilities that would achieve narrative unity;

- applying the dynamics framework presented in Figure 1.2 for analytic and change strategy development consistent with the discussion in the preceding chapter and the discussion earlier in this chapter that identified essential change-oriented activities and outcomes.

The outcomes from inquiry should focus on implementing identified changes in operating practices and new forms of interactions that helped to make the situation facing the organization more holistically actionable.

Dewey (1938) also recognized that new meanings would need to be developed in the process of working out new activities, interactions, and relations. Such meanings are developed culturally, by testing what a possible problem and its corresponding solution might mean in light of the operating system of meanings (pp. 111-112). Meaning making is provisional, moving "through a series of intermediate meanings" (p. 111) until a meaning that "is more clearly *relevant* to the problem in hand" (p. 112) is recognized. This process works because progressive inquiry multiplies holistically meaningful relationships among significant features of the situation and creates a growing list of possibilities the situation is recognized as offering. Because resulting changes in activities will trigger meaning making, inquiry should be particularly focused on issues and conflicts change participants identify and the needs of participants to develop a shared, action-oriented vocabulary, a conclusion suggested by the HSIR organizing study. Ultimately, the successful implementation of changed activities and new interactions in ways that are meaningful to participant will provide the foundation for deeper culture change in the organization.

The details of the change process, including essential stakeholders and other contributing participants, would be driven by the requirements and issues of each problematic situation and could incorporate the techniques of other change approaches. The key requirement is that the process incorporates a structured version of exploratory inquiry involving key participants who update each other regularly in their progress. The principles and tools of the practice study methodology would help to identify the key cultural, dynamic, and narrative resources operating in the situation in the full context of ongoing issues, storylines, different views, and the other features of the situation that are significant to participants. In addition to generating ideas in progress and measures of progress, the dynamics framework in Figure 1.2 should help to identify

features of the situation that are hindering change and allow those matters to be addressed by further inquiry. As emphasized earlier in this chapter, exploratory inquiry is not just about ideas but also changing the conditions of the situation in ways that will facilitate the achievement of change-oriented objectives.

One key question is whether such principles and tools may be applied by organizational participants without outside assistance. As an outsider, I was able to solicit open and candid comments on matters that were significant to participants. I also observed in my study exactly the same level of candid communication among leaders in University of Utah Health Care in the meetings I observed. The precondition to such dialogue and effective change is a common commitment to the larger change possibilities that are being pursued through inquiry. Once participants enter inquiry with a common commitment to broad possible outcomes, my experience with the methodology demonstrates that the above principles and tools could be applied to enhance the success of inquiry focused on significant organizational and cultural change. The key to success of such efforts will ultimately be located in the persistence of collective efforts to continue inquiry toward their shared commitments and future possibilities and not terminate it prematurely. The processes of applying those principles and tools would be forms of collective action and inquiry that could also be studied with the practice study methodology.

My experience with the methodology also presents an even simpler idea that may be productively applied in change situations: developing and sharing storylines of practical activities that have worked to generate changes in work processes and projects. Ultimately, if such changes can be successfully replicated, then more permanent and scalable organizational changes may result over time. Such storylines may also be read by others who may apply the

process methods, implementation approaches, and other local knowledge to improve care processes in very dissimilar settings.

Methods matter in organizational life. The work and accomplishments of leaders in organizations at all levels are defined by the methods they employ; the results that they seek are intertwined with those methods. The activities and outcomes of practical and exploratory inquiry relate to discovery and change rather than prediction and control. The practice study methodology may provide such leaders with new principles and tools they can employ to enhance their understanding of culture and change in conditions of uncertainty. Applying such principles and tools may enhance their success in generating creative, change-oriented outcomes.

Appendix

Appendix A: Interview and Focus Group Schedules

Organizing For Health System Transformation

Investigator: Thomas A. Ellison

[To be refined with participant-specific detail]

Preliminary Matters—Not for Presentation to Interview Participants

Interviewer Positioning: Be attentive, showing personal interest in the interview account and stories of participant; avoid asking for evaluative opinions or too many short answers; avoid cutting off answers, let long answers run, and encourage additional detail at the end of long answers.

In order to enhance narrative content, (i) avoid questions that call for analysis or judgment, (ii) emphasize holistic narrative configuration rather than the mere sequencing of events, and (iii) emphasize participant activities as creative innovations to be "reactivated by a return to the most creative moments of poetic activity" (Ricoeur, 1984, p. 68).

Avoid the implication that the participants should have fully formed stories ready to be presented in the interview. Rather, the interview is an opportunity to explore "(as-yet) untold stories" (p. 74) and to unravel "the tangle of plots the subject is caught up in" (p. 75). Told stories ultimately emerge from a background of entangled plots, and an interview under these conditions is analogous to seeking the "'pre-history' of the told story, whose beginnings has to be chosen by the narrator" (p. 75).

Interview Structure: A first interview should be structured generally to capture storylines relating to the situation or project through a progressive conversation with a participant. This conversation will seek to (i) understand the participant's roles and background relevant to the project, (ii) understand the current situation involving the participant, (iii) identify past events and other matters of significance pertinent to the current situation, and (iv) explore possible future implications of the situation and possible actions to change it. These understandings will be elicited by using open-end questions and additional questions framed to obtain detail pertinent to the storylines offered by the participant. The order of matters covered and the content will be determined by the participant in the flow of the conversation.

A second interview for any participant will follow the same basic approach with less background focus and additional emphasis on matters identified in the initial interviews. In particular, follow-up detail should be explored with respect to events, story parameters and other narrative elements (the *who*, *what*, *why*, *how*, *with whom*, and *against whom* of the particular situation and suggested storylines), and also with respect to the categories of change-related dynamics (change facilitating and hindering features in action in the situation or, stated more basically, contributors to responsiveness or non-responsiveness in the situation) identified by the

participant. A second interview may also provide an opportunity to explore the relationship of past events and ongoing change dynamics with current understandings and the implications of current dynamics for future possibilities using the interpretative principles of Ricoeur's (1981) *hermeneutic arc*. More specifically, these principles would suggest (i) exploring any historically-presented dynamics and connections (analytic components) in light of their implications and significance (holistic) for the present (a validation/testing exploration) and (ii) exploring currently-presented dynamics and connections (analytic components) in light of their implications and significance (holistic) for future possibilities (a deeper reference/projection exploration).

Sensitizing Research to Change and Practice Dynamics. For purposes of sensitizing follow-up questions and any hermeneutic exploration, the following represent the categories of narrative and change dynamics features of situations identified by the theoretical chapter of my dissertation proposal:

- *narrative interactivity (key people, actions, events as positioned in storylines);*
- *narrative emplotment (thematic or explanatory connections in storylines);*
- *symbolism (exploring meaning of symbolic content);*
- *narrative temporality (sequencing, processes, emergence within storylines);*
- *narrative accountability and narrative unity (narrative treatment of ethical, moral and cultural traditions and efforts to move conflicting narratives toward coherence and unity);*
- *dynamics of narrative meaning and possibilities (changing stories, meaning, and possibilities);*
- *dynamics of knowing and inquiring (responding practically, learning, and knowing how);*
- *dynamics of power relations (responding to power and social alignments);*
- *dynamics of relational interactivity (responding to human and material interactions);*
- *dynamics of temporal openness (responding to emerging conditions);*
- *dynamics of ongoing practicing (organizing, ordering, and responding to situational change);*
- *other sources of dynamics presented in the situation or by the narrative; and*
- *dynamics of normativity (responding to understandings, stakes, issues, and norms); OR*
- *the absence, failure, or lack of impact of any of the foregoing dynamic features in the situation.*

The phrase "*change dynamics*" is a short-hand abstraction signifying specific features of a situation that are contributing to situational responsiveness or non-responsiveness and hindering or facilitating desired change outcomes; in turn, the above-listed categories of such dynamics are abstract examples of types of activities, relationships, patterns or other forms of responsiveness that may be specifically called out by participants as having an effect on outcomes. These change-influencing, dynamic features of the situation should be explored so

that they may be specifically described in concrete terms. By doing so, the dynamic features of situations may be catalogued and may ultimately help to constitute different categories of change dynamics.

Consistent with practice theories, such dynamic features also may be described in practice theory terms as aspects of ongoing organized social patterns of meaningful and responsive sayings and doings. Such a description may include the end/project/tasks structure of the activities, the underlying assumptions, understandings and rules that govern the patterns, the know-how that is embedded in the activities, and the social arrangements and orders that are related to such practices. A reasonable detailed description, in practice terms, of the features of a situation that are contributing to responsiveness or non-responsiveness and facilitating or hindering outcomes may allow the further categorization of such features as aspects of ongoing practices (or the absence of expected practices), features of the situation designed to change ongoing practices (or the absence of such features), new practices introduced into a system with notable system impacts (or the absence of such new practices or notable system impacts), conflicts among existing practices (or consistency of effects across existing practices), or the operation of environmental forces that require a response and the developing of new practices. Describing such dynamic features in practice terms may help to identify systematic relationships and embed outcome-promoting dynamic features within revamped organizational practices to promote durable change outcomes.

Interview Tools: The foregoing approach will require the tracking in my field notes of possible practice dynamics and narrative elements presented in the storylines offered by a participant for potential follow-up exploration in the present interview and in any follow-up interview. I may explore the use of expanded versions of Table 2.1 to track the practice dynamics and narrative connections.

Introductory Statement—For Presentation to Interview Participants

The following will be adapted for presentation at the beginning of each initial interview. A shortened version will be provided at the beginning of any follow-up interviews:

[Review Consent form if not previously obtained]

[Purpose of interview] The objective of this interview is to explore your experience at work involving _____ [identify nature of change-related project or efforts]. This is a very open exploration from your perspective about this ongoing collective work and in particular your experience associated with _____ [the Project]. I am generally interested in understanding how professionals work together to transform their collective activities, work relationships, and established practices and arrangements. While I will want to understand some specific aspects of your experience, our principal objective today is to capture what is happening to you and others, what's important to you, and how your collective activities, relationships and practices might change because of the Project.

[Participant control of the scope of interview] I want you to establish the matters that we will cover. In order to accomplish this objective, I will start by using very general questions to invite you to develop your story or stories about what is happening and, in doing so, to identify the various topics you might want to cover. The broad range of matters you might choose to cover in your story could include:

- *the background of the Project,*
- *who has been and is involved,*
- *what has happened and is happening,*
- *what questions, uncertainty, conflicts and obstacles you have encountered and are encountering,*
- *how you have engaged with others regarding the Project,*
- *what you've learned and are learning,*
- *what aspects of the Project have been significant and meaningful to you, and*
- *what the next steps should be in the Project.*

These are just examples of the types of matters you might seek to explore from your experience.

[Broader purposes of research] I hope to gain insights about the dynamics of changing situations and how such collective transformative outcomes occur by obtaining the separate accounts and differing perspectives of various participants. No one account is expected to be correct or complete. There are no "right answers" to any questions.

[Importance of participant-generated detail] In developing your story, feel free to expand on events and other matters you view as important to how activities, relationships, practices, and arrangements have changed. Those details are helpful to create a more complete story about what has and is happening.

[Participant role] Also, even though this is a somewhat "formal" interview, and we are recording this session, my objective is really to engage you in a conversation about your experience. I will then create a written transcript of our conversation and I may create additional summaries. You will have an opportunity to review, correct, and supplement the interview transcript and anything that I may create in summary of your story.

First Interview Questions

[A.1. Personal background and Project involvement] Please tell me something about your background and how you got involved in the Project.

[A.2. Pertinent background trends and influences] [Develop question regarding trends and influences that might be driving the Project]

[A.3. Organization and Project background] What was happening in the organization that gave rise to the Project?

[B.1. Current description of Project and change efforts] Please tell me what's been happening in your efforts regarding the Project? How's the Project taking shape? *Possible follow-on questions:* Are you responding to changes in your situation? If so, what are you doing to respond to such changes?

[B.2. Status of ongoing efforts] What challenges have been successfully addressed and what work still needs to be done? How well is the ongoing work understood and progressing? What is uncertain?

[B.3. Aspects of existing work at issue] Which aspects of your ongoing work have been placed at issue or in conflict or are creating issues for others? To what extent is your work requiring changes in the working relationships, practices or arrangements of others or requiring new ones?

[B.4. Current matters of significance] What particular aspects of the situation, your ongoing work, existing practices or arrangements or other existing factors are particularly meaningful or significant in helping or hindering the Project? What's missing that would be helpful?

[C.1. Historical overview—Project initiation, scope and purposes] [Insert question that follows up on specific matters identified in question A.3] What activities was the Project originally intended to encompass? Why did it seem important to pursue those activities?

[C.2. Historical overview—early change activities] Tell me about your early experiences in getting the Project going? Have you encountered any obstacles, surprises, or conflicts? How have or are those factors being addressed? Employ follow-up questions to identify the *who*, *what*, *why*, *how*, *with whom*, and *against whom* of the particular situation.

[C.3. Historical overview—matters of significance] Were particular events, discoveries, actions, existing practices or other factors particularly meaningful or significant in helping or hindering you in getting the Project going or in shaping the Project?

In light of your current efforts and these factors you've identified, I'd like to explore your current thinking about the future possibilities for the Project.

[D.1. Future implications—possible directions] Looking forward, in what different directions might the Project head? What factors are influencing Project toward these alternative paths?

[D.2. Future implications—next steps] What steps do you see as essential in the near term? What factors are driving you to take those steps? Are you aware of obstacles or

hindrances that might affect your success? What are you learning that may be helpful in the future?

[D.3. Future implications—possible significance] As you envision matters today, what accomplishments of significance do you think the Project will be able to achieve? What impact would the Project have on the organization? Would there be broader implications for the work of the Project within or beyond the organization?

[E.1. Concluding Question] In thinking through what you have covered so far, are there any clarifications or matters you might not have mentioned that might be helpful to an understanding of your current efforts and the scope and future direction of the Project?

Second Interview Questions

In this interview, I'd like to get your current perspective on some of the same questions we explored earlier. I would also appreciate the opportunity to explore some of the matters you have mentioned earlier in greater detail, if that's all right with you?

[B.1. Current description of Project and change efforts] Please tell me what's been happening in your efforts regarding the Project? How's the Project taking shape now? *Possible follow-on questions:* Are you responding to changes in your situation? If so, what are you doing to respond to such changes?

[B.2. Status of ongoing efforts] What challenges have been successfully addressed and what work still needs to be done? How well is the ongoing work understood and progressing? What is uncertain now?

[B.3. Aspects of existing work at issue] Which aspects of your ongoing work have been placed at issue or in conflict or are creating issues for others? To what extent is your work requiring changes in the working relationships, practices or arrangements of others?

[B.4. Current matters of significance] What particular aspects of the situation, or your ongoing work, existing practices or other existing factors are particularly meaningful or significant in helping or hindering the Project?

[C.1A. Historical overview—Project initiation, scope and purposes] How would you describe the purpose of the Project at this point?

[C.2A. Historical overview—recent change activities] Tell me about your recent experiences in working on the Project? Have you encountered any obstacles, surprises, or conflicts? How have or are those factors being addressed? Employ follow-up questions to identify the *who*, *what*, *why*, *how*, *with whom*, and *against whom* of the particular situation.

[C.3A. Historical overview—matters of significance] Have particular recent events, discoveries, actions, existing practices or other factors particularly meaningful or significant in helping or hindering you in getting the Project going or in shaping the Project?

[C.4A. Fill in details of historic story] Now I would like to explore some of the historical factors and events that you mentioned in your first interview so that I may better understand your view of how these events and factors may have contributed to how the Project is taking shape. [Develop specific questions based on factors identified in the first interview with linkages to narrative or change dynamics elements.]

[D.1. Future implications—possible directions] Looking forward, in what different directions might the Project head? What factors are influencing Project toward these alternative paths?

[D.2. Future implications—next steps] What steps do you see as essential in the near term? What factors are driving you to take those steps? Are you aware of obstacles or hindrances that might affect your success? What are you learning that may be helpful in the future?

[D.3. Future implications—possible significance] As you envision matters today, what accomplishments of significance do you think the Project will be able to achieve? What impact would the Project have on the organization? Would there be broader implications for the work of the Project within or beyond the organization?

[E.1. Second Pass] In thinking through what you have covered so far, are there any clarifications or matters you might not have mentioned that might be helpful to an understanding of your current efforts and the scope and future direction of the Project?

Concluding Question

[F.1. Obtain concluding insights] Has this interview process brought any matters to your attention or provided additional clarity that may not have been present before? Do you have any suggestions of how I could better conduct this type of interview? Any final thoughts for today?

FOCUS GROUP SCHEDULES

[To be refined with situation- and project-specific detail]

Preliminary Matters—Not to be presented to focus group participants

Focus Group Purposes: Focus groups may be considered after the first set of interviews as a method to develop an expansive perspective on different future possibilities by building on the storylines and change dynamics revealed from the interviews. This earlier focus group

structure grounds the conversation in what participants identify as significant or at issue at the time of the interviews, introduces pertinent storylines and change dynamics derived from the interviews, and moves to a focus on developing a holistic view of alternative future possibilities that are extensions from the current situation. Focus groups at a later point in time, when identified alternative futures are being pursued, may be appropriate to focus on the features of the situation that may be operating to hinder or facilitate desired Project outcomes. This later focus group structure grounds the conversation in desired outcomes that participants identify as significant or at issue, introduces pertinent storylines and change dynamics derived from interviews, and moves to developing options to enhance dynamic features that are facilitating desired outcomes and to minimize dynamic features that are hindering those outcomes.

Earlier Focus Group: Identifying Future Possibilities

The purpose of this focus group is to explore your current efforts in establishing the Project, identify what you feel are the most significant factors in the current situation and then explore the future possibilities for the Project suggested by these factors.

[EFG.A.1.—Current matters of significance] What particular aspects of the situation, your ongoing work, existing practices or arrangements or other existing factors are particularly meaningful or significant in helping or hindering the Project? What's missing that would be helpful? [compile list for further discussion]

[EFG.B.1.—Explore dynamic factors underlying matters of significance] For each identified matter, why is this matter of significance to the Project? What factors are operating in the situation that are related? [develop specific questions and prompts from interview contents] [If a positive matter] what would it take to enhance the contribution of this matter to the Project? [If a negative matter] what would it take to minimize the effect of this factor on the Project?

[EFG.B.2.—Explore storylines underlying matters of significance] For each identified matter, how are these factors related to some of the historical storylines identified from the interviews? [develop specific questions and prompts from interview contents] Where might these storylines be headed?

[EFG.C.1. Future implications—future possibilities] Looking forward, what possibilities for the Project are opened up by this discussion? Which directions are possible but seem less likely?

[EFG.C.2. Future implications—next steps] What steps do you see as essential in the near term? What factors are driving you to take those steps? What are you learning that may be helpful in the future?

[EFG.C.3. Future implications—possible significance] As you envision matters today, what accomplishments of significance do you think the Project will be able to achieve? What

impact would the Project have on the organization? Would there be broader implications for the work of the Project within or beyond the organization?

[EFG.C.4.—Holistic view of Project] Are the factors and future possible outcomes we have discussed mutually consistent and reinforcing? How might the different possibilities be reconciled?

Later Focus Group: Organizing toward Desired Future Outcomes

[LFG.A.1.—Current desired outcomes] What key outcomes do you currently envision for the Project? [compile list for further discussion]

[LFG.A.2.—Current matters of significance] What particular aspects of the situation, your ongoing work, existing practices or arrangements or other existing factors are particularly meaningful or significant in helping or hindering achieving those outcomes? What's missing that would be helpful?

[LFG.B.1.—Explore dynamic factors impacting the outcomes] For each identified outcome, what dynamic factors are operating in the situation? [develop specific questions and prompts from interview contents] [If a positive matter] what would it take to enhance the contribution of this matter to achieving the desired outcomes? [If a negative matter] what would it take to minimize the effect of this factor on achieving outcomes?

[LFG.B.2.—Explore storylines underlying matters of significance] For each identified outcome, how are these factors related to some of the historical storylines identified from the interviews? [develop specific questions and prompts from interview contents] Where might these storylines be headed?

[LFG.C.1. Future implications—next steps] What steps do you see as essential in the near term to address the factors we've just discussed? What factors are driving you to take those steps? What are you learning that may be helpful in the future?

Concluding Question

[LFG.D.1. Obtain concluding insights] Has this discussion process brought any matters to your attention or provided additional clarity that may not have been present before? Do you have any suggestions of how I could better conduct this type of group discussion? Any final thoughts for today?

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