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A Dynamic Exploration into Mentalization Among Youth on the Autism Spectrum

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by

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Abstract

The relationship between mentalization, affect regulation, and the quality of object relations among individuals with an autism spectrum disorder was explored. The findings could be used as conceptual support for the use of psychodynamic psychotherapy in the treatment of people on the autism spectrum. The study consisted of a retrospective analysis of neuropsychological assessment standard scores on three measures (Mutuality of Autonomy Scale, NEPSY-II Theory of Mind subtest, and the CBCL Dysregulated Profile). Forty-four subjects diagnosed with autism spectrum disorder —aged nine to sixteen—were compared with a matched non-autism clinical sample. The results supported the hypothesis that individuals with an autism spectrum disorder have less capacity for mentalization compared to the comparison subjects and the general population. The findings did not support more affect dysregulation among those with autism compared to the comparison group, and did not find heightened affect dysregulation in comparison to the general population. Additionally, the study did not confirm that as mentalization capacity decreases affect dysregulation increases. As was hypothesized, the absolute level of object relations was in the average range among individuals with autism.

Keywords: mentalization, affect regulation, object relations, autism spectrum disorder, psychodynamic

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Statement of the Problem

Individuals with an autism spectrum disorder possess deficits in social communication and interaction (American Psychiatric Association, 2013). Kanner (1943) believes that this is the result of impaired development of self-awareness, which requires several skills including *theory of mind* (Hobson, Chidambi, Lee, & Meyer, 2006). Theory of mind encompasses how one makes sense of their own and others' behavior based on underlying mental states, such as beliefs, emotions, and desires (Wallin, 2007). Several brain areas are believed to be involved in the capacity for theory of mind, and research supports that individuals with autism have impaired functioning in some of these areas (Kana, Keller, Cherkassky, Minshew, & Just, 2009). The research into theory of mind is extensive and full of evidentiary support. Theory of mind research has placed a strong focus on the cognitive contributions involved in understanding the perspectives of others. This focus has consumed the research and theoretical focus (Dant, 2015). Exploration into how environmental and social influences contribute to the development of this capacity needs further examination.

The clinical research into the ability to understand the mental states of others includes two core concepts: (a) theory of mind, and (b) mentalization. These concepts have a few similarities, but also have conceptual differences. James Mark Baldwin was the leading contributor to the research on theory of mind, conceptualizing theory of mind through the lens of human cognition (Obiols & Berrios, 2009). Theory of mind research addresses two theories, the *theory-theory* and the *simulation theory.* Theory-theory proposes that being able to interpret the mind of another requires first being able to articulate a theory of how the mind works (Carruthers & Smith, 1996). Theory-theory has been proven through several *false-belief* tasks which are

believed to only be possible after the age of four. Simulation theory proposes that interpreting the mind of the other occurs through putting oneself in the position of another (Baron-Cohen, Tager-Flusberg & Cohen, 2000).

Fonagy developed an interest in the idea of theory of mind, applying this construct to individuals with borderline personality disorder and emphasizing the ways in which this skill is developed through the emotional quality of early attachment relationships (Jurist, 2010). He emphasized that emotions are a large component of the developing self, and are ignored in the theory of mind research (Fonagy, Gergely, Jurist, & Target, 2002). He created the term "mentalization" for this impairment, which encompasses an individual's ability to attend to and understand the mental states of the self and others, such as their needs, desires, beliefs, goals and intent (Allen & Fonagy, 2006; Fonagy et al., 2002). Mentalization has been instrumental in understanding a core impairment seen in many psychiatric disorders—the mind misinterpreting ones' experience of oneself (Bateman & Fonagy, 2010).

Fonagy and Target (2006) offered the mentalization—focused approach to understanding pathologies of self-concept. The mentalization-focused approach proposes that the capacity for mentalization develops through interactions with early attachment figures. Fonagy's initial theorizing proposed that individuals with a borderline personality disorder have impaired capacity for mentalization because of a disorganized attachment relationship between the child and their caregivers (Fonagy & Target, 2006). This attachment disorganizes the self-structure of the child, resulting in splitting[1]. Fonagy and Target (2008) corrected their initial theorizing by

[1] Splitting is a defense mechanism that results from an inability or failure to integrate the dichotomy of both positive and negatives aspects of the oneself and of others into a cohesive whole. This defense mechanism often leads to black-and-white-thinking or all-or-nothing thinking (Carser, 1979).

proposing that individuals with borderline personality disorder don't have impaired mentalization across all situations. Instead, they suggested that mentalization fails when the individual is in a situation that activates their attachment system.

More researchers have explored the role of mentalization among individuals with an autism spectrum disorder. Mayes and Cohen (1994) addressed how the neurocognitive impairments in autism—particularly those surrounding the inability to seek out as well as to respond to the presence of others—causes the infant with autism to fail to recognize and facilitate the attachment relationship with the caregiver. Per Slade (2009), the parents of individuals with autism are unable to mirror the infant's affects because the infant does not provide appropriate cues to their internal states. This leads to avoidance of caretaker interactions, and ultimately isolation.

Early theorizing regarding the cause of autism put a lot of emphasis on the role of the mother (Haltigan, Ekas, Seifer, & Messinger, 2011). Recent research that has attempted to understand the attachment security of individuals with autism have found evidence to support that the attachment relationship is not insecure (Haltigan et al., 2011; Schore, 2014; Taylor, Target, & Charman, 2008). However, some researchers have noticed that there is reduced attachment behavior among individuals with autism, possibly contributing to differences in the expression of attachment (Trevarthen & Daniel, 2005).

Object relations theory emphasizes that infants are born with the capacity for human interaction, but that the development of positive human interaction can be interrupted by parenting that is not "good enough" (Mitchell & Black, 1995). Early *object representations* ["objects" being the internalized images of caregivers and parts of the caregiver] shape how the individual later interacts with the world (St. Claire, 2004). Melanie Klein (1935) proposed two

modes of experience in which an infant develops object relations: (a) the "depressive mode," and (b) the "paranoid-schizoid mode." Thomas H. Ogden (1989) added a third mode, the "autistic-contiguous mode," which is proposed to be the most primitive of the three modes, and is also the mode in which individuals with autism are said to be stuck. In this mode, the infant and the object are one, and psychological meaning results from sensations and rhythms. Individuals that get stuck in this mode experience anxiety around a fear of disintegration of their "sensory surface." To defend against this anxiety, the individual makes attempts to maintain continuity of their sensory surface through self-soothing, rhythmic, and imitative behaviors (Ogden, 1989).

Fonagy (2008) proposed that the development of affect regulation is connected to that of mentalization. *Affect regulation* is defined as the process one engages in to modify the intensity and temporal features of emotions so that they are appropriate for the context and help to accomplish one's goals (Mazefsky & White, 2014). This occurs as the result of the caregiver's affective mirroring through facial expressions, vocal changes, and body language (Fonagy & Target, 2006). In a secure attachment relationship, the infant comes to see themselves as a "regulating agent" through observing the impact they have on their caregivers' display of emotions (Fonagy & Target, 2006). Research supported that individuals with an autism spectrum disorder have difficulties with affect regulation (Samson, Huber, & Gross, 2012). Schore (2013) proposed that brain impairments found in those with an autism spectrum disorder impact the ability to engage in right-brain-to-right-brain transactions, which are the avenue for development of affect regulation.

Overview of the Present Study

As discussed further in the literature review, various researchers have begun to explore

mentalization, affect regulation, and attachment security among individuals with an autism spectrum disorder. The current study sought to build upon this budding research by contributing salient empirical data to further understand these constructs and how they apply to individuals with autism. The current research could aid in the development of effective therapeutic interventions for individuals with an autism spectrum disorder. This study could also provide evidence to clarify the diagnostic presentation among those with autism.

This study involved the retrospective analysis of archival data from a private practice that conducted neuropsychological assessments. The study examined the assessments of 44 children and adolescents spanning the ages of five to 15 with an autism spectrum disorder. The comparison group consisted of 44 individuals matched based on gender and age. Results from measures of affect dysregulation, theory of mind (mentalization), and quality of object relations were compared to get a better understanding of whether there are differences between individuals with an autism spectrum disorder and comparison subjects in these three areas, as well as whether the impairments were significant compared to the general population.

Chapter 1: Literature Review

Autism Spectrum Disorder

Autism spectrum disorder is a neurodevelopmental disorder that involves deficits in social communication and social interaction, as well as restrictive and repetitive patterns of behaviors, activities, or interests (American Psychiatric Association, 2013). In the fourth edition of the *Diagnostic Statistical Manual (DSM-IV-TR),* autism spectrum disorders were classified into three diagnostic categories: (a) autistic disorder, (b) Asperger's disorder, and (c) pervasive developmental disorder not otherwise specified (PDD-NOS) (Young & Rodi, 2014). Until a newer version of the Diagnostic Statistical Manual was published, Asperger's disorder was diagnostically like autistic disorder, except that it did not include the impairments in language communication or delays in cognitive development. PDD-NOS was the classification that encompassed individuals that did not meet the full criterion for an autism spectrum disorder, often due to late age of onset or the presence of atypical or sub-threshold symptomatology (American Psychiatric Association, 2000).

Asperger's disorder is popularly termed *high-functioning autism* (Young & Rodi, 2014). Individuals with high-functioning autism have average to superior intellectual abilities compared to lower functioning individuals that have impaired cognitive functioning (Roux, Dion, & Barrette, 2015). Individuals with high-functioning autism are more likely to develop internalizing problems because they have a stronger cognitive capacity for monitoring their own behavior (Henderson et al., 2015). This creates heightened sensitivity, as it opens them up to more awareness of the challenges they face in interpersonal exchanges.

The fifth edition of the *Diagnostic Statistical Manual (DSM-5)* made some significant changes to the classification of autism spectrum disorders. Instead of having three separate

diagnostic categories, the diagnoses were synthesized into one single diagnosis—autism spectrum disorder—with a spectrum of functioning within the single diagnosis (American Psychiatric Association, 2013). The diagnosis includes five separate criteria. The first criterion states that an individual must have persistent deficits in: (a) social communication and interaction in different contexts, (b) social-emotional reciprocity, (c) nonverbal communicative behaviors that are used for social interaction, and (d) developing, maintaining, and understanding relationships (American Psychiatric Association, 2013).

The second criterion states that the individual must have restrictive and repetitive patterns of behavior, interests, or activities that are demonstrated by the following: (a) stereotyped or repetitive motor movements, use of objects, or speech, (b) insistence on sameness, inflexible adherence to routine, or ritualistic behavior that is nonverbal or verbal, (c) restricted or fixated interests that are abnormal in intensity, and (d) hyper or hypo-reactivity to sensory input, or unusual interest in sensory information in the environment. These two criteria should be evaluated for level of severity, with the following three options: requiring support, requiring substantial support, and requiring very substantial support (American Psychiatric Association, 2013).

The third criterion states that these symptoms must begin in the earlier stages of development (American Psychiatric Association, 2013). The fourth criterion includes that the symptoms must create significant impairment in the individual's social, occupational, or other areas of functioning. The last criterion states that the symptoms could not be better explained by an intellectual disability or global developmental delay. The DSM-5 stated that individuals who have already maintained a diagnosis in the three previous classifications of autism should now be considered as having an autism spectrum disorder. Those that do not meet the criterion for

autism spectrum disorder—but do have challenges with social communication—should be considered for a social pragmatic communication disorder (American Psychiatric Association, 2013).

Developing the Capacity for Self-Awareness

Kanner (1943) introduced the term "extreme egocentrism" to describe the deficits in self-awareness among individuals with autism. This term sparked exploration into the concept of *self* in autism, given that poor self-concept is believed to be the core deficit (Lombardo & Baron-Cohen, 2011). The self is multidimensional—an array of traits that allow individuals to have commonalities while also remaining unique. James coined the term, "looking glass self," which describes how one's perception of oneself depends on how one perceives that others see them.

The capacity for self-awareness requires the development of five skills: (a) inferencing, (b) recognition of the past, (c) awareness of the influence of one's actions, (d) retrieval of schemata, and (e) awareness of the self as its own concept with unique characteristics (Hobson et al., 2006). Hobson et al. proposed that to conceptualize the self, one must be able to conceptualize the other. This developmental process is said to occur in the early years of life, with children being able to attribute characteristics to themselves at the age of two (Lee & Hobson, 1998). Around the age of seven, typically developing children can see themselves as the authority of their self-knowledge (Mitchell & O'Keefe, 2008).

Not all children develop these skills in the same manner. Dawson and McKissick (1984) conducted a study to determine whether individuals with an autism spectrum disorder recognized their capacity for self-knowledge. It was found that individuals with autism assigned just as much self-knowledge to their peers as they did to themselves; whereas the non-clinical group assigned more self-knowledge to themselves. This implied that individuals with an autism

spectrum disorder do not see themselves as the authority of their self-knowledge (Mitchell & O'Keefe, 2008). An important clarification in interpreting this information is that children with autism do not lack an inner-self, they just experience challenges using the information from others to make sense of what they experience internally (Slade, 2009). Many theorists have explored the underlying processes involved in the challenge of developing self-concept in autism. One such theory is called *theory of mind*.

Theory of Mind in Autism Spectrum Disorder

Theory of mind has illustrated the autistic individual's inability to understand the mental states of others, including thoughts, desires, knowledge, and intentions (Lombardo & Baron-Cohen, 2011). This inability impairs an individual's ability to interpret, predict, and participate in social interactions (Baron-Cohen, 1995). The ability to take the perspective of others is an integral component of social interaction (Leibovitch, 2014). According to Dant (2015):

> There is something exclusive about one's own mind; it is one's innermost part, something intimate and private, a hidden element of one's personality, at the very core of one's being. It is the seat of feelings, ideas, thoughts, sensations, and experiences that are one's own along and on it is based our sense of self. And yet our understanding of other people as individuals, and of the collective social world around us, depends on knowing what is in their minds. (p. 45)

Theory of mind skills are needed to interpret social cues and calculate the best way to respond to a social situation. However, research shows that individuals with autism lack the ability to take the perspective of others, therefore exhibiting poor social interaction skills (Leibovitch, 2014).

Kaland, Callesen, Moller-Nielsen, Mortensen, and Smith (2008) conducted a study to

determine whether individuals with high-functioning autism had impaired theory of mind compared to control participants, using three advanced theory of mind tasks. The results found that children with high-functioning autism displayed lower performance when compared to the control group in all tests of theory of mind. This provided evidence that there is impairment in theory of mind abilities in high-functioning autism (Kaland et al., 2008).

A growing body of research has focused on the theory of mind explanation for why children with an autism spectrum disorder have deficits in social relatedness (Dant, 2015). The theory of mind conceptualization has relied heavily on the neurobiological deficits that inhibit the ability to take the perspectives of others. Kana et al. (2009) discussed the areas of the brain that are involved in the theory of mind network: Medial frontal gyrus, the anterior paracingulate, and the right temporoparietal junction. They found that in individuals with autism, there is less synchronization between these areas when attempting to understand the mental states of others (Kana et al., 2009).

Neurotypical Development of Theory of Mind

The capacity for theory of mind develops throughout the course of an individual's life. Many models are proposed in understanding how theory of mind develops (Ensink & Mayes, 2010). Spelke, Phillips, and Woodward (1995) proposed two theories: (a) the perception of movement model and (b) the social-affective experiential model. The perception of movement model suggested that infants are born with the ability to perceive intentional movement. The social-affective experiential model proposed that infants are born with the ability to differentiate humans from other objects, and that the ways in which they interact with humans is different from other objects (Spelke et al., 1995).

Skill developments during infancy contribute to the later development of theory of mind

(Ensink & Mayes, 2010). At three months, the infant develops sensitivity to gaze monitoring, and at around five months the infant develops the ability to follow the gaze of another. The infant begins to engage in vocal dialogue at six months, and at nine months the infant begins to point in intentional communication. An important developmental milestone occurs between eight and 14 months, in which the infant starts to develop an awareness of self and others (Ensink & Mayes, 2010).

The belief-desire reasoning framework proposed that at the age of four children start to use theory of mind skills to interpret the beliefs, desires, and actions of others (Fodor, 1987; Wellman, 1990). Between the ages of four and five is when children start to engage in pretend play with peers which fosters a stronger development of social roles, social rules, and the idea that others have a mind (Dunn, 1988). Dunn also explored the use of jokes in toddlerhood, which provides more opportunities for social learning and engagement in perspective taking. While theory of mind skills start developing in infancy and toddlerhood, it is not until primary school that these skills truly develop. It is around the age of six that children begin to understand the behavior and thoughts of their peers, as well as understand that they are somewhat stable over time. It is also around this time that children start to express their own thoughts (Wellman, 1990).

Unfortunately, little research has been conducted to provide evidence for the development of theory of mind past preschool. Ensink and Mayes (2010) hypothesized that this lack of research is related to difficulties in understanding theory of mind capacities in older individuals. Calero, Salles, Semelman, and Sigman (2013) conducted a study to further explore theory of mind capacity among individuals from age six to eight. They found that children in that age range are not fully proficient in theory of mind tasks, but that they perform better with age.

Therefore, it's possible that theory of mind skills continue to develop throughout childhood, and possibly even later.

Intersubjectivity

Some have challenged the theory of mind approach due to its central focus on cognitive contributions and the neurobiology behind the impairment. Dant (2015) proposed that the theory of mind approach diminishes the importance of environmental and social influences that are involved in the inability to understand the mental states of others. Dant proposed an alternative, phenomenological approach which emphasizes the importance of social engagement in developing a subjective self. He addresses the concept of *intersubjectivity*, which states that for one to have a mind, one must engage with a second mind. Engaging with another person allows for the opportunity to presume what is in the other's mind so that one can share emotions and feelings. In conceptualizing the challenges of those with autism, he proposed that the mind of individuals with autism has a different intentionality. This makes it difficult to relate and have reciprocal understanding with those who are not on the autism spectrum. Recent research has made it increasingly clear that a focus on environmental and social factors is imperative in understanding why individuals with high-functioning autism experience challenges developing a sense of self, as well as relating socially to others (Dant, 2015).

Mentalization

In 2002, Fonagy, Target, Gergely, Bateman, and Allen (Holmes, 2005) formerly introduced the term "mentalization." Research into the conceptual origins of mentalization indicates that there were earlier uses of the concept, with roots in cognitive psychology, psychoanalytic object relation's theory, French psychoanalysis, and attachment theory (Holmes 2005). Bateman and Fonagy (2004) propose the following definition for mentalization:

> The mental process by which an individual implicitly and explicitly interprets the actions of himself and others as meaningful on the basis of intentional mental states such as personal desires, needs, feelings, beliefs, and reasons. (p. 21)

Mentalization is an *interpersonal interpretive function*, which is a "cluster of mental functions for processing and interpreting new interpersonal experiences" (Fonagy, 2008, p. 6). There are three interacting nodes that contribute to interpretive functions. The node that is most central to mentalization is the *cognitive regulation node*, which includes the dorsomedial prefrontal cortex and the ventral prefrontal cortex. In addition to mentalization, this node is responsible for effortful control and mediating goal-directed behavior. Fonagy also proposed that the mirror neuron system plays an important role in mentalization (Fonagy, 2008).

The process of mentalizing is imaginative, as the individual must imagine what is in the other's mind (Fonagy, 2008). Additionally, to understand what is in the others mind one must have a "symbolic representational system for mental states" (p. 4). Mentalization also requires the capacity for attentional control, defined as "the ability to inhibit a dominant response to perform a subdominant response" (p. 23). Attentional control is developed through the attachment relationship and the process of the parent controlling the distress of the infant (Harman, Rothbart, & Posner, 1997).

Fonagy and Target (2006) offered the *mentalization-focused approach* to understanding pathologies of self-concept. The mentalization-focused approach proposed that the capacity for mentalization develops through interactions with early attachment figures. The relationship with the caregiver is crucial, as it provides the opportunity for *contingent mirroring interactions*. Through these interactions, the infant develops the understanding that their behavior affects the caregiver's behaviors and emotions. This allows the infant to realize that they are a regulating

agent. The caregiver's capacity to engage in this interaction is called *reflective functioning* (Fonagy & Target, 2006). When a caregiver has adequate reflective functioning, the child develops an understanding of mental states. Within the context of a facilitating environment, the child learns how to process the social world (Slade, 2009). Much of Fonagy's work on mentalization has centered on borderline personality disorder. However, his understanding of the role of mentalization in borderline personality disorder—and the construct of mentalization itself—has shifted (Jurist, 2018).

Fonagy and Target (2008) have identified that individuals with borderline personality disorder do not have impaired mentalization across all situations. Instead, they proposed that mentalization fails when the individual is in a situation that activates their attachment system. They proposed that when an attachment relationship intensifies, the individual is more likely to experience difficulties mentalizing. Bateman and Fonagy (2015) suggested that mentalization is "context and relationship specific, and is closely related to stress and arousal levels" (p. 794). An individual with borderline personality disorder is more likely to experience failures in mentalization in interpersonal situations, particularly in close relationships (Bateman & Fonagy, 2015). Bateman and Fonagy (2006) shifted their initial theorizing when they proposed that mentalization and attachment are related. Instead, they stated that a disorganized attachment does not necessarily lead to a complete lack of mentalization capacity.

Fonagy (2008) proposed that the child-caregiver relationship is the safest place for developing mentalization because it is free of competition. He stated that securely attached individuals are more likely to develop mentalization for many reasons. The main reason is that the securely attached infant doesn't need to activate their attachment system as frequently, providing more room for developing mentalization. Related to this, he stated that mentalization

becomes more difficult to develop in insecure attachment relationships. Fonagy proposed that for those with attachment trauma, mentalization is thwarted by "chronic activation of the attachment system" (Fonagy, 2008, p. 16), which leads to high arousal and a fear of exploring the mind of the caregiver. Attempts at exploring the mind of the other can create an "alien presence within his self-representation" (p. 34). Therefore, the infant's internalization of the caregiver becomes a core part of the self instead of an internal object. If the caregiver is unable to contain the infant's anxiety, then the infant must take in this alien object as a part of their self-representation. When the infant is in distress, they feel attacked from within. This can lead the infant to the understanding that the only path for relief is self-destruction, or to externalize these self-representations onto others through projective identification (Fonagy, 2008).

Gergely and Unoka (2008) proposed that mentalization begins developing before the age of four. Many theory of mind researchers using the false-belief task have proposed that theory of mind skills start at the age of four. Gergely and Unoka proposed that mentalization is "an innate social-cognitive evolutionary adaptation implemented by a specialized and prewired mindreading mechanism" (p. 59). They advised that there is not a causal relationship between attachment and mentalization. Instead, they suggested that disorganized attachment relationships get in the way of the ability to develop mentalization (Gergely & Unoku, 2008).

Bateman and Fonagy (2015) identified three "nonmentalizing states" that are found among individuals with borderline personality disorder and comorbid mood disorders. Those three states were termed *psychic equivalence*, *hypomentalizing*, and *hypermentalizing*. The psychic equivalence state defined the period where individuals with borderline personality disorder experience failure, rejection, shame, and abandonment when the ability to mentalize fails. In this mode, thoughts and feelings are experienced as factual. The hypomentalizing state

describes when individuals with borderline personality disorder are unable to both think and feel, resulting in poverty of thought, lack of interest, anhedonia, and withdrawal. When the depression subsides, the individual is vulnerable to the hypermentalization state, which results in rapid thoughts, over-attributing the accuracy of his or her own mental states, and believing that he or she understands the motives of others (Bateman & Fonagy, 2015).

Luyten and Fonagy (2015) identified four dimensions of mentalizing based on distinguishing features and underlying neural circuits that play a role in the development of mentalization. The first dimension involves both automatic and controlled mentalization. Automatic mentalization comprises the "unconscious, parallel, fast processing of social information that is reflexive and requires little effort, focused attention, or intention" (p. 368). Controlled mentalization comprises "conscious, verbal, and reflective processing of social information that requires the capacity to reflect consciously and deliberately on and make accurate attributions about the emotions, thoughts, and intentions of self and others." (p. 368)

The second dimension involves both internal and external mentalization (Luyten & Fonagy, 2015). Internal mentalization is defined as "understanding one's own mind and that of others through a direct focus on the mental interiors of both the self and others" (p. 368). External mentalization is defined as "understanding one's own mind and that of others based on external features (such as facial expressions, posture, and prosody)" (p. 368). The third dimension involves self-other mentalization, which involves shared networks which "underpin the capacity to mentalize about the self and others" (p. 368). The fourth dimension includes the cognitive-affective features of mentalizing which proposed that mentalization can be either controlled (cognitive) or automatic (affective). Ideas such as the belief-desire framework are encompassed in the cognitive domain, whereas mentalized affectivity and affective empathy are

encompassed in the affective domain (Luyten & Fonagy, 2015).

Fonagy's more recent research explored the role of *epistemic trust* in borderline personality disorder and other psychiatric illnesses (Fonagy, Luyten & Allison, 2015). Epistemic trust is developed from *ostensive communication*, which includes "eye contact, turn-taking contingent reactivity, and the use of a special vocal tone" (p. 583). These behaviors help the other to be experienced as a person that is separate and has agency. This experience of being paid attention to helps to create epistemic trust, which provides the opportunity for the individual to gain knowledge about the social world. The caregiver must show interest in the infant to develop epistemic trust. It is believed that epistemic trust is not developed between the caregiver and infant of someone with borderline personality disorder (Fonagy, Luyten & Allison, 2015). Fonagy and Allison (2014) also proposed that epistemic trust can be fostered in a therapeutic relationship.

Mentalization in autism spectrum disorders. Research into the role of mentalization among those with an autism spectrum disorder is expanding. Channon, Crawford, Orlowska, Parikh and Thoma (2013) explored mentalization challenges in adults with high-functioning autism spectrum disorders through comparing scores on three measures of social cognition between individuals with autism and a group of non-autistic individuals. Results found that individuals with high-functioning autism received lower scores on the social cognition measures, particularly in detecting awkward elements of a problem situation, interpreting sarcasm, and putting themselves in the shoes of the characters in the stories (Channon et al., 2013).

Mayes and Cohen (1994) drew associations between autism and some of the psychoanalytic concepts that have been addressed in Fonagy's theories. Rather than seeing the impairments in self-concept and affect regulation as the result of poor reflective functioning on

the part of the parent, Mayes and Cohen addressed how the neurocognitive impairments in autism—particularly those surrounding the inability to seek out as well as to respond to the presence of others—have caused the infant with autism to fail to recognize and facilitate the attachment relationship with the caregiver. Despite the efforts of the caregiver, the child may not develop affect regulation and mentalization. This has lead to confusion in children with autism, which has resulted in the development of strategies to reduce their anxiety (Mayes & Cohen, 1994).

According to Slade (2009), the parents of individuals with autism are unable to mirror the infant's affects because the infant does not provide appropriate cues to their internal states. The parents attempt to engage with the infant, however—due to lack of eye contact, indication of pain, fear, pleasure, and sadness, and directed communication—this engagement is not successful. In infants without autism, these parent-caretaker interactions are highly rewarding. However, for infants with autism, these interactions serve the opposite function; disorganizing and emotionally dysregulating the infant. This can lead to avoidance of caretaker interactions, and ultimately isolation. This could then contribute to a vicious cycle, in which the infant continues to isolate themselves from the opportunity to develop mentalization and affect regulation that are needed to effectively engage in social interactions (Slade, 2009).

The stages for developing mentalization. There is evidence that the development of theory of mind is static and universal (Alvis & Harris, 1991). However, Fonagy (2008) proposed that there are many environmental contributors to the development of mentalization: parental control (Vinden, 2001), parental discourse and ability to discuss emotions (Dunn, Brown, & Beardsall, 1991; Meins et al., 2002), and the parental beliefs regarding parenting (Ruffman, Perner, & Parkin, 1999). Despite this, he proposed fixation points for the development of

mentalization (Fonagy & Target, 2006). In the infant's first year of life they develop the ability to see causal relationships. The infant can see how their actions affect both the attachment figure and those in their environment. This is the period when they start to understand that others have intentions. However, this understanding is limited. Infants at this age are focused on the physical actions and constraints of the other. The infant does not fully understand the mental state of the other (Fonagy & Target, 2006).

During the second year of life, the child has a "mentalistic understanding of agency" (Fonagy & Target, 2006, p. 557). The child sees others as "intentional agents" whose actions are compelled by states of mind. This is the age in which affect regulation is most influential, and the child stops thinking egocentrically. The child is not fully able to understand mental states because they are unable to see how mental states are independent from physical reality (Fonagy & Target, 2006).

In the third and fourth years of life the child can see themselves as a representational agent—understanding that how someone appears to be feeling does not necessarily represent their true feelings (Fonagy & Target, 2006). This is the age in which the child's mood can influence their reactions. They start to understand that how someone behaves can be influenced by their thoughts, feelings, personality, or capabilities. This stage consists of the development of self-concept. At the age of four, children can pass false-belief tasks, indicating that this is when mentalization skills starts to exist (Fonagy & Target, 2006). However, as has been discussed earlier, Gergely and Unoka (2008) proposed that mentalization is developed earlier than the age of four.

The last stage takes place in the sixth year of life when the child can remember their intentional activities (Fonagy & Target, 2006). Second-order mentalization skills develop, in

which the child can understand mistaken beliefs about beliefs. The child is also able to experience mixed emotions, and understand that biases could affect how someone interprets an event (Fonagy & Target, 2006).

Mentalization-based therapy. Bateman and Fonagy (2013) created what is called *Mentalization-Based Treatment* (MBT) from the mentalization-focused approach. The aim of MBT is to "strengthen the patient's sense of self" (p. 599) through maintaining mentalization between the therapist and the patient. The approach also aims to maintain an "optimal level of arousal" (p. 598). Through this type of treatment, the therapist must: (a) maintain a stance of "not-knowing", (b) be patient in identifying differences in perspective, (c) accept that they may have a different perspective, (d) question the patient's experiences by asking for descriptions rather than explanations, (e) explain things that do not make sense to the patient, and (f) take responsibility for misunderstandings to model honesty and courage (Bateman & Fonagy, 2013).

The first task in MBT is to address affective control, given that the ability to regulate affects is necessary for the infant to develop internal representations of the therapist (Bateman & Fonagy, 2013). Without the ability to regulate affects, the patient is unlikely to remain in treatment. The specific steps in this approach are: (a) the therapist maintains empathy for the patient's present subjective state through transference validation; (b) explore, clarify, and challenge the patient through identifying the feelings that are associated with the transference and what behaviors are tied to those feelings; (c) identify affects the patient is experiencing and maintain an "affect-focus"; and (d) mentalize the relationship through accepting the role the therapist has played in the enactment, expanding understanding about the experiences the patient is having and summarizing alternative perspectives to how the patient experiences things (Bateman & Fonagy, 2013). In the literature on MBT, Fonagy has not addressed the possible

effectiveness of this approach with individuals who have an autism spectrum disorder.

Attachment Security

Bowlby (1969), a leading researcher into attachment relationships, highlighted that to understand an infant one must also understand the relationship with the caregiver because, according to Winnicott (1960) the infant does not exist outside of the relationship with their caregiver. In a secure attachment relationship, the infant must have three experiences. First, they must be able to seek proximity to the caregiver. Second, the caregiver must provide a safe-haven where the infant can be soothed. Lastly, the infant must have the opportunity to develop an *internal working mod*el, which is as an internal schema of the self with the attachment figure that the infant can use to feel safe to explore (Bowlby, 1969).

In a secure attachment relationship, the infant comes to see themselves as a *regulating agent* through observing the impact they have on their caregivers' display of emotions (Fonagy & Target, 2006). The caregiver mirrors back affects that are congruent with the infants emotional experience, allowing the infant to become regulated by the caregiver as well as discover how to do this for themselves. The caregiver contains the affective state of the infant, making intolerable feelings more tolerable, and allowing the infant to learn the skills necessary to contain their own emotions (Fonagy & Target, 2006).

According to Fonagy and Target (2006), mentalization develops through the process of *reflective functioning*. Reflective functioning is a process that occurs through the relationship between the caregiver and infant. Successful reflective functioning leads to a more secure attachment relationship. Given that individuals with autism have impairments in mentalization, one would then be curious about the attachment security of individuals with autism. However, very little research has been conducted to examine this (Haltigan et al., 2011).

The initial theorizing of the cause of autism highly emphasized the role of the parents, postulating that poor parenting either caused or exacerbated autism (Haltigan et al., 2011). Mary Ainsworth created the "Strange Situation" in the 1970s, which is a structured observation method in which the infant's response was examined while the caregiver leaves the infant alone in a room with a stranger and then re-enters the room. This method of observation provided the opportunity to explore attachment relationships in autism. It was found that a subset of individuals with autism had a secure attachment with their caregiver. This subset of individuals fit the diagnostic criterion of a higher-functioning autism spectrum disorder, and it was hypothesized that children with high-functioning autism can use their cognitive abilities to compensate for the difficulties that lower-functioning children with autism experience when in a secure attachment (Haltigan et al., 2011).

Haltigan et al. (2011) conducted a study to assess the attachment security of individuals at genetic risk for an autism spectrum disorder. Results found that they were not less likely to develop secure attachments. However, there were differences found in the sub-classifications of the attachment, which reflect the affective nature of the attachment pattern. Those differences included a reduction in the affective displays that are often expressed during caregiver-infant interactions. These differences indicate that individuals with autism may differ in the way in which they express attachment security, not necessarily in the propensity for a secure attachment (Haltigan et al., 2011).

Taylor et al. (2008) examined the attachment security among adults with an autism spectrum disorder. They examined the patterns of responses on the Adult Attachment Interview, and found that three of the 20 participants showed a secure attachment, which is consistent with the general population. However, individuals with autism showed less coherence of attachment

narrative and less reflective functioning (Taylor et al., 2008).

Schore (2014) has done extensive research on the attachment experiences of individuals with autism. Using etiological studies, Schore proposed an "interactive relational model" which postulates that both biological impairments and the infant's attachment relationship are potential causes of impaired development. In his research, Schore proposed that individuals with autism have reduced attachment behavior, making it difficult to appropriately bond with the caregiver. In the first two years of life, due to increased volume in the right basolateral amygdala, the infant experiences intense fear states which lead to withdrawal. This is observed in the infant's absent facial expressions, avoidance of eye contact, reduced mobile activity, void of vocalization, and lack of relationship with others. Schore proposed that this heightened fear results in a defensive strategy of avoiding traumatic hyperarousal through detachment (Schore, 2014).

Trevarthen and Daniel (2005) conducted a micro-analysis of home videos of parents with a child on the spectrum. The results found disorganized rhythm and synchrony between the infants and their caregivers. They proposed that the infant's difficulties with affective engagement causes the caregiver to reduce affection and engage in defensive withdrawal (Travarthen & Daniel, 2005). If there is reduced attachment behavior in infants with autism, one would wonder if the development of object relations is impacted.

Object Relations Theory

There are many different object relations theorists, all of which hold different opinions regarding the nature of the *object* (Buckley, 1986). These differences in theories make it challenging to describe one single theory of object relations. However, object relations theory can be best described by its emphasis that infants are born with the capacity for human interaction, and that the development of positive human interaction and non-traumatic

development can be imposed upon by parenting that is not "good enough" (Mitchell & Black, 1995). Object relations theory proposed that development of the psyche first occurs in the relationship with the primary caregiver (Nicholson, 1988). The psyche is made of internalized images of objects that are representations of the people—most often caregivers—that one experiences during infancy (St. Clair, 2004). However, it can also be parts of people, such as the mother's breast as well as inanimate objects, that the individual encounters in their environment. These object representations shape who we are (St. Clair, 2004). Object relations refers to "cognitive-affective symbolic constructions of our interpersonal experience that, in turn, organize and direct subsequent behavior" (Mullin, Hilsenroth, Gold, & Farber, 2017, p. 501).

Melanie Klein proposed a developmental "internal objects theory" (Klein, 1935 in Buckley, 1986). During infancy, the infant introjects that objects are either 'good' or 'bad' based on whether the mother's breast provides for them or fails them. The object becomes bad when the infant projects aggression onto the object both because it has not fulfilled its desire, but also because the infant believes the object to be dangerous; capable of destroying the infant (Klein, 1935 in Buckley, 1986). Klein's object relations theory proposed two modes of experience: the "depressive mode" and the "paranoid-schizoid mode" (Ogden, 1989). Thomas H. Ogden proposed the "autistic-contiguous mode," a third mode that extends the two positions proposed by Klein. Ogden suggests that these three modes "stand in a dialectical relationship with one another, each creating, preserving, and negating the others" (Ogden, 1989, p. 10).

The depressive mode is considered the most mature position (Ogden, 1989). It is proposed to occur somewhere between three and six months of life. In this mode, the infant achieves "symbol formation proper" (Segal, 1957 in Ogden, 1989), in which the symbol represents the symbolized. However, that which is symbolized is different from the symbol. This

is achieved because the infant develops the capacity for subjectivity, which allows the infant to see that their feelings and thoughts are their own, and therefore can be interpreted. They also develop the ability to see objects as subjects through defenses such as projective identification[2]. The infant gains an understanding that subjectivity is stable; that the other is the same over time. However, with this understanding comes sadness as the infant discovers that the past is unchangeable and may never be what they want it to be. In this mode, the infant develops empathy as they become capable of seeing objects as more than need-fulfilling. However, they also develop the capacity for guilt as they feel concern for others. Now that the infant realizes their objects are not completely in their control, they feel anxiety as they discover that their anger can push-away or hurt them. With this comes the capacity for sadness, loneliness, mourning, and the experience of missing others (Ogden, 1989).

The paranoid-schizoid mode is more primitive than the depressive position, occurring sometime between one and three months of life (Ogden, 1989). In this mode, the infant achieves "symbolic equation" (Segal, 1957 in Ogeden, 1989), in which symbol and symbolized are considered emotionally equal. This leads to an understanding that thoughts and feelings aren't personally created, but are instead facts. This creates a limited sense of self, as the self is also the object. Therefore, the individual has no subjectivity. This mode consists of the defenses of splitting, omnipotent thinking[3], and denial[4]. The main dilemma in this mode is attempting to

[2] Projective identification is a defense mechanism initially introduced by Melanie Klein in 1946 in which the individual rids "of the self of unwanted aspects of the self; the deposition of those unwanted 'parts' into another person; and finally, with the 'recovery' of a modified version of what was extruded (Ogden, 1979).
[3] Omnipotent thinking involves defensively creating an inflated self-esteem as a means of protecting against feelings of powerlessness and inferiority (Ogden, 1989).
[4] Denial is a defense mechanism where the individual refuses to accept reality as a means of avoiding painful realizations about the self (Ogden, 1989).

manage the anxiety that comes from both loving and hating the object. This is dealt with by separating the loved and hated aspect of the self from the loved and hated aspects of the object. However, when the object is disappointing in some way, it immediately goes from a good object to a bad object. Objects in this mode are perceived as objects rather than subjects. Therefore, experiences of guilt or empathy are not experienced. Objects are valued for what they can do for the infant. When objects are lost, they can be easily replaced with a new object. Object relatedness is through projective identification, in which the infant places aspects of the self into the other as a means of controlling the other from within. The infant can place ejected feeling states into the other, which is often experienced by the other as coercive (Ogden, 1989).

Thomas Ogden added the autistic-contiguous mode because he felt that the other two modes did not account for an even more primitive mode (Ogden, 1989). In this mode, sensory information is used to form pre-symbolic connections that end up constituting bounded surfaces. Psychological meaning—and experience of the self—are the result of sensations and rhythms. Most importantly, sensations felt on the skin surface while being held, nursed, spoken to, etcetera. When these sensory contacts are contiguous, it allows the infant to gain a sense of a bounded sensory surface where the infant exists. In this stage, the infant and the object are one. The anxiety experienced in this mode revolves around fear that disintegration of the sensory surface will cause the infant to leak, dissolve, disappear, or fall. To defend against this anxiety, the infant makes attempts to re-establish the continuity of the sensory surface through self-soothing activities such as hand twirling, foot tapping, etcetera. They may also engage in rhythmic activities such as jogging, rocking, head banging, and many others. Imitation is also used to hold onto the other, and can manifest in behaviors such as echolia or constant repetition of a word or phrase (Ogden, 1989).

Tustin (1980, 1984) described two types of experiences that the infant has with objects: (a) autistic shapes and (b) autistic objects. Autistic shapes are *felt* shapes "arising from the experience of soft touching of surfaces which makes a sensory impression" (Ogden, 1989, p. 129). The shape of the object is linked with the sensation that it creates for the infant. In contrast to this, autistic objects occur when an object is pressed against the infant's skin and creates a hard surface. This allows the infant to see their surface as an armor protecting them from dangerous objects (Ogden, 1989).

Object relations theories regarding autism.

Thomas Ogden. Ogden (1989) proposed that pathological autism is the result of an infant getting stuck in the autistic-contiguous mode. Rather than using the sensory information to find a way of being in the world and in relation to the other, the infant gets stuck in a "sensory-dominated way of being (or not being) that are designed to insulate a potential self (that never comes into being) from all that lies outside of his sensory-dominated world" (p. 161). This stops the infant from seeing the symbol and symbolized as separate, leading to a lack of subjectivity. Rumination, or "merycism," is a process whereby the infant brings back food that has been swallowed into the mouth before digestion. This process is an attempt by the infant to take over the feeding situation through creating a "closed auto-sensory cycle of creating his food" (p. 61) which becomes a substitute for the mother, inhibiting an avenue for object relatedness and perpetuating self-sufficiency.

Frances Tustin. Tustin (1991) described autism as an "early developmental deviation in the service of dealing with unmitigated terror" (p. 585). He believed that autism resulted from the infant becoming aware that they are separate from the mother, whom they previously felt fused with. To survive the pain of this realization, the infant attempts to avoid it through

increasing separateness; alienating and cutting themselves off from the caregiver. They then engage in "auto-sensual protective reactions" such as rocking, hand-flapping, finger-flicking, object twirling, etcetera. After extended periods of time engaging in this sensation-dominated way, the infant becomes harder and harder to reach, and subsequently gets stuck. Tustin believes that autistic individuals (a) are not object-related, (b) are a-symbolic, and (c) lack a fantasy life. He also states that they have no internal regulator.

Melanie Klein. Klein (1975) wrote a paper describing a case of someone who would now be considered on the spectrum. Klein proposed that this individual had inhibited development of object relations, and lacked the ability to symbolize. She proposed that this inhibited development was the result of anxiety coming from feeling destructive impulses toward the mother's body. The infant with autism does not have the capacity to tolerate this degree of anxiety, and therefore responds by defensively withdrawing. This subsequently causes them to lack the ability to establish relationships with others (Klein, 1975).

Margaret Mahler. Mahler (1968) described what she termed "autistic syndrome" as a defect in the ability to "utilize (to perceive) the catalyzing mothering agent for homeostasis" (p. 48). This defect leads the autistic infant unable to see their caregiver as a source of emotional orientation. Instead, infants with autism use their caregivers as extensions of either inanimate or partially animate objects, leading to further incomprehension of the other. The social difficulties seen in individuals with autism are not the cause of autism, rather, they are the result of the infant's need to defend against stimuli imposing from within as well as from outside. The autistic child withdraws and encloses themselves into a restricted environment. Mahler also proposed that self-directed aggression is the autistic individuals attempt to feel alive.

Donald Meltzer. Meltzer proposed that the autistic individual attaches all senses to the

object that is most stimulating, resulting in what he termed "mindlessness," where the infant is only able to integrate simple polarized emotions (Meltzer, Bremner, Hoxter, Weddell, & Wittenberg, 1975). The infant does not see others as capable of containing or assimilating emotional experiences. Therefore, the infant with autism does not develop an internal world, and is unable to both symbolize and engage in projective identification (Meltzer et al., 1975).

Affect Regulation: Regulation Theory

Fonagy (2008) proposed that the development of affect regulation is connected to that of mentalization. He suggested that affect regulation is developed before mentalization, and also transforms with the development of mentalization. Affect regulation is defined as one's ability to modify one's emotions to fit the context with which the emotion exists, as well as to meet one's goals (Mazefsky & White, 2014). This modification typically involves adjusting the intensity of the temporal features of the affect being expressed. Affect regulation is a necessary skill and has been found to be disrupted or maladaptive in many psychiatric disorders (Mazefsky & White, 2014).

Affect regulation is said to develop in the context of an attachment relationship where the caregiver engages in affective mirroring (Fonagy & Target, 2006). For development to be successful, the mirroring must be *congruent*, meaning that the caregiver must match the mental state of the infant. The affect must also be *marked*, meaning that the caregiver must show that the affect they are displaying is not their own, but is intended for the infant. However, two categories of problems can arise in this process. First, if the mirroring is incongruent, the infant's understanding of their internal state will not be consistent with their actual self-state. This can lead to a tendency toward narcissistic self-structure. Second, if the mirroring is un-marked, the infant may see the caregivers' emotional expressions as an externalization of the infants'

emotional experience. This can contribute to a tendency toward experiencing emotions through others, which is often seen in borderline personality disorder. The attachment security of the caregiver-infant relationship will contribute to whether an infant has both marked and congruent affective mirroring (Fonagy & Target, 2006).

Schore proposed the *regulation theory* in 1994, which is an interpersonal neurobiological theory of attachment which explores how early relational experiences both affect and alter the development of the right brain. The right brain is involved in the "innate psychobiological need for affiliation and social connection" (Schore & Schore, 2014, p. 179). This function is necessary for the development of affect regulation, which is influenced by "right-brain-to-right-brain transactions" between the attachment figure and the infant (Schore, 2013). The avenues for this communication include visual-facial, auditory-prosodic, and tactile-gestural communications. These right brain communications shape one's ability to use nonverbal communication in interpersonal relationships (Schore & Schore, 2014).

Jurist (2010) addressed the complexity in being able to define and understand affect regulation. He pointed out that we don't yet know if affect regulation is biological or developmental. He also proposed that we don't yet know if the ability to regulate affects is ever in our control; that it could possibly be an unconscious process. Additionally, he proposed that it may not be vital that one regulate their emotions. With this last statement, Jurist introduced the term "mentalized affectivity" to describe the ability to both reflect on affective states, as well as to regulate them (Fonagy et al., 2002; Jurist, 2018). This concept addressed the complexity of affect regulation, emphasizing that our present affects are influenced by our past experiences as well as our relationships with others. Mentalized affectivity helped to address the ways in which experiencing affects can help to make sense out of past experiences. Ultimately, Jurist intended

to encourage the recognition that one doesn't always know what one or the other is feeling, particularly in close relationships (Jurist, 2010). The *Mentalized Affectivity Scale* (MAS) was created to assess this construct. It measures three components that underlie mentalization: Identifying emotions, processing emotions, and expressing emotions (Greenberg, Kolasi, Hegsted, Berkowitz, & Jurist, 2017).

Affect regulation in autism spectrum disorders. Mazefsky and White (2014) proposed that affect dysregulation underlies many behavioral symptoms in autism such as tantrums, outbursts, aggression, and self-injury. These behaviors are often misdiagnosed as a comorbid behavioral disorder; however they propose that they are actually a product of absent or impaired affect regulation (Mazefsky & White, 2014). Deficits in mentalization may contribute to an inability to develop affect regulation (Samson et al., 2012). Deficits in taking the perspective of others may cause individuals with autism to misinterpret intentions, which could cause frustration and subsequently affect the ability to use affect regulation appropriately (Mazefsky & White, 2014). There are also symptoms of autism that can interfere with affect regulation, such as difficulty identifying, describing, and distinguishing emotions. Lastly, individuals with autism may experience unusual reactions to information that is sensory, causing them to have higher reactivity (Mazefsky & White, 2014).

Bachevalier and Loveland (2006) proposed that individuals with autism are not just impaired in their ability to understand the mental states of others, but they are also impaired in their ability to self-regulate, particularly with social-emotional behaviors. Bachevalier and Loveland supported this with neurobiological research that indicated that an early developmental dysfunction of the orbitofrontal-amygdala circuit can contribute to both the inability to understand the mental states of others, as well as impairments in self-regulation.

Samson et al. (2012) conducted a study that compared the performance of adults with autism against typically developing adults on three affect regulation questionnaires. Results found that individuals with autism had more negative affect, difficulty identifying and describing their emotions, and lower reappraisal use and self-efficacy compared to typically developing adults (Samson et al., 2012).

Schore (2013) proposed that neurobiological deficits contribute to the social challenges found in individuals with autism. Schore proposed that an approach to therapy that involves regulation therapy can be both effective in individuals with an attachment disorder, as well as those with autism (Schore, 2013). To my knowledge, no such study has been conducted to provide evidence for the effectiveness of an affect regulatory approach in treating autism.

Affect regulation therapy (ART). Schore and Schore (2010) proposed *Affect Regulation Therapy* (ART). This theory proposed that when affect is heightened, the internal working mode of attachment for the individual becomes reactivated in "right-lateralized implicit-procedural memory," and is then enacted with the therapist. The therapist then attunes affectively to the patient, engaging both with the verbal and the "nonverbal moment-to-moment rhythmic structure of the patient's internal states," changing their behavior to synchronize with the patient. The therapist affectively communicates with the patient as a means of sharing perspectives. The therapist connects with the unconscious of the patient so that the patient can experience the therapist "from the inside out." The patient and therapist communicate through each other's right hemispheres. Schore and Schore (2010) proposed that patients who are "right-brain challenged" often use therapy to gain left-brain solutions to their problems. Therefore, ART can increase a right-brain challenged patient's social intelligence through changing brain plasticity.

Chapter 2: Methodology

This study consisted of a retrospective analysis of archival data. The first goal of the study was to assess differences between individuals with an autism spectrum disorder and individuals without an autism spectrum disorder in the areas of theory of mind (mentalization), object relations, and affect dysregulation. The second goal of the study was to explore the relationship between these three constructs within individuals with an autism spectrum disorder.

Research Questions

1. Are there differences in scores on a measure of affect dysregulation, theory of mind, and quality of object relations between individuals diagnosed with an autism spectrum disorder and comparison subjects?
2. Do scores on a measure of theory of mind predict scores on a measure of affect dysregulation and quality of object relations?
3. What is the relationship among scores on a measure of affect dysregulation, quality of object relations, and theory of mind (mentalization) in children and adolescents with an autism spectrum disorder?
4. After discovering the within-group differences, what is the relationship between these differences in individuals with autism versus individuals without autism? What are the between-group differences (mediating effects) within the within-group effects?
5. What is the best combination of independent variables to predict the dependent variable? Was theory of mind, quality of object relations, and affect dysregulation necessary to predict group membership?

Research Hypotheses

1. Children and adolescents with an autism spectrum disorder will score higher on a

measure of affect dysregulation and lower on a measure of theory of mind compared to the comparison group (research question 1).

2. There will be no statistically significant difference between the autistic group and comparison group on a measure of the quality of object relations (research question 1).
3. Individuals with an autism spectrum disorder who have lower scores on a measure of theory of mind will have higher scores on a measure of affect dysregulation (research question 2).
4. Among the autistic group, scores on a measure of theory of mind will not predict scores on a measure of the quality of object relations (research question 2).
5. There will be a linear relationship between performance on measures of affect dysregulation and theory of mind in individuals with an autism spectrum disorder – as theory of mind decreases, affect dysregulation will increase (research question 3).
6. There will not be a linear relationship between performance on assessments of theory of mind and the quality of object relations (research question 3).
7. The correlations between scores on a measure of theory of mind and affect dysregulation will be stronger among the autistic group compared to the comparison group (research question 4).
8. The correlations between object relations quality will not be stronger for the autistic group compared to the comparison group (research question 4).
9. Theory of mind and affect dysregulation will be necessary to predict group membership, but object relations quality will not be necessary (research question 5).

Research Design

A quasi-experimental design was used with a retrospective analysis of archival data

collected during neuropsychological evaluations conducted between 2011 and 2016. The independent variables were standard score differences obtained on a measure of theory of mind, quality of object relations, and affect dysregulation. The outcome variable was the categorical outcome of an autism spectrum disorder diagnosis versus no autism spectrum disorder diagnosis.

Sampling Procedures

The data in this study was archival and was originally collected by a multi-disciplinary private practice offering integrated neuropsychological/psychological evaluations (see Appendix D for the research agreement). The practice is in a small, northeastern town. The participants completed the instruments as part of a neuropsychological evaluation.

Sample. To determine the appropriate sample size for the study, I reviewed 14 studies that were based on similar aims, subjects, and methodology. The N size for each of these studies were recorded in an Excel spreadsheet and an average was calculated. The resulting N was 60 (including both autistic and comparison groups). I aimed to have at least 30 participants in both groups, collecting more if it were possible. In the end, I collected a total of 88 profiles.

The sample for this study included an autistic and a comparison group. The autistic group consisted of the neuropsychological profiles of 44 individuals who met the DSM-5 diagnostic criteria for an autism spectrum disorder. The comparison group consisted of the neuropsychological profiles of 44 individuals matched on gender and age. The sample included children and adolescents ranging from five to 15 years of age.

In order to be included in both the autistic and the comparison group, the participants were required to have a Full Scale IQ score of 75 or higher, as determined by the Wechsler Intelligence Scale, fifth and fourth editions (WISC-IV, WISC-V), as well as the Stanford Binet Intelligence Scale, fourth edition. Determining inclusion for the autistic group included diagnosis

by the psychologist of the private practice using the DSM-5 (American Psychological Association, 2013) criterion as well as two standard instruments in the field: the Gilliam Autism Rating Scale (GARS) and the Asperger's Syndrome Diagnostic Scale (ASDS). To be included in the autistic and the comparison group, the participant needed to be administered the required instruments. To be included in the comparison group, the individual needed a primary diagnosis that is learning or neuropsychologically based.

For both the comparison and the autistic group, a history of traumatic brain injury or of any other neurological illness excluded the individual from the study. Individuals were excluded from the comparison group if the primary diagnosis was either emotional or social. However, a secondary or tertiary social or emotional diagnosis would be considered appropriate for inclusion. Participants were also excluded if they had any intellectual disability or a social pragmatic communication disorder. Also, anyone with a personality disorder or a mood disorder was excluded from the comparison group.

Informed consent. I compiled data that was de-identified and did not use patient data in any way that could have identified the patient or broken their confidentiality. The individuals themselves were not used as research subjects. The informed consent signed by the patient's parents prior to treatment indicated that their information was considered "PHI" (see Appendix B). The practice defined PHI as "information in the chart that could identify the individual." I did not have access to information that was identifying nor did the research assistants, as the data was de-identified prior to data analysis. The patients gave consent for the collection and storage of the data, as well as the collection of the data for the use of the private practice (see Appendix C).

Archival Data Analysis

Prior to the data analysis, the subjects were de-identified and assigned a number by the private practice. To ensure even further protection of the patient's information, I assigned a second number to be used only by me. The data included standard scores, percentiles, t-scores, and z-scores, and were entered into an Excel spreadsheet. Demographic information regarding age, gender, and diagnoses were also entered into the spreadsheet.

There are both advantages and disadvantages to the use of archival data. Zaitzow and Fields (1996) stated that the advantages to the use of archival data are that, (a) it prevents the data from being tainted by the researcher's influence, (b) it is readily available, thereby eliminating time constraints, and (c) it is cost-effective. One disadvantage is that it is difficult to ensure that the assessments were conducted correctly and scored accurately. However, I made the best attempt to reduce the influence of this by checking the scoring of the assessments and making corrections when needed. Another disadvantage is that I could not choose the instruments; therefore, it is possible that the instruments are not the best measure for the constructs in the study.

I reviewed the de-identified electronic reports and sorted them based on those that were most recent, working backwards, in order, to have the most recent editions of the assessment instruments. I reviewed all the available electronic reports at the private practice, and selected those that met the inclusion and exclusion criterion. I placed the subjects in the autistic and the comparison group based on whether they had a diagnosis of autism spectrum disorder, or not. I matched the autistic subjects with a comparison subject based on age and gender. I collected the physical de-identified charts for those that had been included in the study, and entered the required data into the Excel spreadsheet. The only data that was not immediately placed in the

Excel spreadsheet was the Rorschach responses, which needed to be coded, as the psychologist of the practice does not keep a scored version. Further description of this process is provided in a later section.

All subjects completed a neuropsychological battery administered by a licensed psychologist and a few pre-doctoral psychology practicum students. Testing and scoring procedures of the student trainees were directly supervised by the psychologist. Clinical diagnoses were determined by a review of reports generated from the neuropsychological evaluations. The clinical reports included a diagnostic formulation. Test results remained secured within the private practice setting.

Scoring Procedure

Mutuality of autonomy scale. The Rorschach responses of the autistic and the comparison groups were coded using the Mutuality of Autonomy Scale (Urist, 1977). To establish evidence of reliability in the scoring of the Rorschach responses, two graduate student assistants completed the coding of all responses.

I pulled the hand-written Rorschach responses for both the comparison and the autistic group from the physical charts. I then typed the responses to increase ease of scoring for the research assistants. I created a table to record the Rorschach responses, alongside a column for scoring. I provided the coders the typed and de-identified responses for both the autistic and the comparison group with no indication of which group they belonged to as a means of reducing bias by the coders.

I provided two resources that instructed the coders on how to score the Rorschach based on the Mutuality of Autonomy Scale. The responses were then coded by both graduate assistants to discover the PATH score and the total score. Following the coding of all the responses, I

averaged the two scores for each response and entered the average score into the Excel spreadsheet.

Conversions for uniformity in scores. To complete the data analysis, consistency was needed in the types of scores that were provided, therefore I converted all the scores to standard scores. Scores ranged from standard scores, percentile, z-scores, t-scores, and unstandardized scores. To make the Mutuality of Autonomy Scale standardized, I used the conventional formula, Z= Xi-M/SD, converting the scores into Z-scores, then using a conversion table to convert the Z-scores to standard scores.

Instrumentation

The following includes descriptions of the instruments that I used in this study, alongside discussion of the reliability and validity of each instrument. For a more detailed description of each measure, see Appendix A.

NEPSY-II theory of mind subtest. The Developmental Neuropsychological Assessment Battery, second edition (NEPSY-II) is a cognitive assessment that can be used for individuals aged three to 16 (Korkman, Kirk, & Kemp, 2007). The Theory of Mind subtest assesses: (a) the ability to understand mental functions, (b) the ability to understand that others have their own thoughts, ideas, and feelings, and (c) the ability to understand how emotion relates to social context (Korkman et al., 2007).

Reliability. The interrater reliability included agreement rates from 93-99% (Davis & Matthews, 2010). Test-retest stability included a study of 165 children that took the test on two separate occasions. The test-retest showed adequate stability over time. The Pearson product moment coefficients ranged from .21 to .91. Internal consistency was calculated through split-half and alpha methods. The results found adequate to high internal consistency (Davis &

Matthews, 2010).

Validity. Clinical studies were conducted with ten groups based on diagnoses, including ADHD, reading disorder, mathematics disorder, language disorder, intellectual disability, autistic disorder, Asperger's disorder, deaf and hard of hearing, emotionally disturbed, and traumatic brain injury (Brooks, Sherman, & Strauss, 2010). These groups were compared to a control group that was matched based on age, sex, race/ethnicity, and parent-education level. The Cohen's *d* effect size between autistic disorder and performance on the Theory of Mind subtest was 1.19, and the Cohen's *d* effect size between Asperger's disorder and performance on the Theory of Mind subtest was 0.19 (Brooks et al., 2010).

Achenbach child behavior checklist (CBCL). The Achenbach Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) is a symptom questionnaire that measures emotional and behavioral problems in children and adolescents from the ages of six to eighteen. There are three versions: (a) self-report, (b) parent-report, and (c) teacher-report. To maintain consistency in this study, I only used the parent-report questionnaires for each subject. It has been tested and supported based on reliability and validity by a few researchers (Berube & Achenbach, 2010). This measure was used to determine presence of affect dysregulation in the present study.

A study conducted by Pandolfi, Magyar, and Norris (2014) provided evidence for its use in identifying emotional and behavioral problems in individuals with an autism spectrum disorder using the Anxious/Depressed, Withdrawn/Depressed, Internalizing Domain, and Total Problem scales. Schroeder, Weiss, and Bebko (2011) gave 15 children and adolescents with Asperger's syndrome the CBCL and found elevated scores in the Social, Thought Problems, Attention Problems, Anxiety, and Depressive Symptoms scales compared to the normative

group. The CBCL has also been used to measure affect dysregulation using the CBCL-Dysregulated Profile (CBCL-DP), which combines the attention problems, aggressive behavior, and anxious-depressed scales of the CBCL questionnaire (Althoff, Ayer, Rettew, & Hudziak, 2010). The dysregulation profile was used for the present study.

The Rorschach mutuality of autonomy scale (MOA). The Mutuality of Autonomy Scale (MOA) was developed by Urist (1977) to assess the responses of the Rorschach to determine whether interactions between objects represented in the cards are reflective of positive and empathic connectedness, or malevolence and destruction. The scale represents the overall quality of object relations. All responses to the Rorschach stimulus cards that include a statement about a relationship between at least two object in the card are coded on a scale from 1 to 7. If the response does not include any indication of a relationship, the response receives a 0. Lower points indicate positive object relations and higher points indicate negative (or pathological) object relations (Kelly, 1996). This is then translated into a pathological score (PATH), in which all the level five, six, and seven scores are summed. A PATH score higher than two is considered worthy of poor object relations (Fowler & Erdberg, 2006). Per a meta-analysis conducted by Bombel (2005), there is excellent reliability for response level and protocol level reliability (K= .82; ICC= .90). Urist (1977) conducted a study to determine construct and predictive validity with patients on an inpatient psychiatric ward and found strong correlation between MOA scores and ratings by staff of autonomous functioning.

Gilliam autism rating scale (GARS). The Gilliam Autism Rating Scale (GARS) is a questionnaire aimed at both identifying and providing support for a diagnosis of autism in individuals aged three to 22 (Gilliam, 2006). The measure also provides the severity of the autism spectrum disorder. The 42 test items are divided into three subscales: (a) stereotyped

behaviors, (b) communication, and (c) social interaction. These three scaled-scores are then summed to produce the Autism Index score, leading to the likelihood of autism as well as an understanding of the severity of the problematic behavior (Gilliam, 2006).

Reliability. Gilliam (2006) conducted a study testing the reliability of the GARS, which included 1,092 individuals with autism between the ages of three and 22. Coefficient alpha scores for the four subscales ranged from 0.88 to 0.93. Item-total point biseral correlation coefficients for the items within the scale were above 0.34. Test-retest reliability coefficients were above 0.81 and was 0.88 for the total score. Interrater reliability was used with 57 individuals and the coefficients ranged from 0.73 to 0.82 (Gilliam, 2006).

Validity. Gilliam (2006) also tested for convergent validity by comparing the GARS with the Autism Behavior Checklist (ABC) in a group of 69 children. The correlations between the two indexes ranged from 0.37 to 0.92 and was 0.94 for the total score. To determine the measures' ability to differentiate between autistic individuals and non-autistic individuals, Gilliam compared 442 children with autism and 177 individuals with other diagnoses. Individuals with autism obtained higher scores than all the other diagnostic individuals. A discriminant analyses was conducted, and it correctly classified between 70% and 80% of cases. Construct validity is shown through the lack of correlation between age and subscale or total scores (Gilliam, 2006). The GARS is recommended by many institutions, such as the California Collaborative Work Group on Autism Spectrum Disorders, the Quality Standards Subcommittee of the American Academy of Neurology, and the Child Neurology Society (Filipek, Accardo, Baranek, Cook, & Dawson, 1999). However, it is important to note the limitation that the GARS is primarily used as a tool for screening, rather than for diagnosis. Standard practice for diagnosing Autism Spectrum Disorder involves the use of the Autism Diagnostic Observation

Schedule (ADOS), which is not used by the private practice providing the archival data for the present study (Filipek et al., 1999).

Asperger's syndrome diagnostic scale (ASDS). The Asperger's Syndrome Diagnostic Scale (ASDS) is a rating scale used to determine whether an individual has Asperger's syndrome (Myles, Jones-Bock, & Simpson, 2001). It is used with individuals aged five through 18. There are 50 items that come together to measure five areas of functioning: (a) cognitive, (b) maladaptive, (c) language, (d) social, and (e) sensorimotor. It also provides a total score, called the Asperger Syndrome Quotient (ASQ). The total score indicates the probability of a diagnosis of Asperger's syndrome.

Reliability. Little research has been conducted to support the reliability of the ASDS. Myles et al. (2001) report in the manual that there is adequate reliability. However, Goldstein (2002) conducted a review of the ASDS and reports that the evidence is lacking, and that positive and negative predictive power as well as test-retest reliability were not reported.

Validity. A study conducted by Boggs, Gross, and Gohm (2006) sought to determine the validity of the ASDS. Results supported both divergent and convergent validity. Discriminate validity was only partially supported. Of all measures of Asperger's symptomatology, the ASDS was the best discriminator between individuals with and without Asperger's. When combined with the Gilliam Autism Rating Scale and the Social Skills Rating System (SSRS), accuracy of diagnosis improved. Goldstein (2002) reports that the manual stated that there were several studies proving validity. However, they noted that the reference section was lacking in citations that had been peer-reviewed.

Chapter 4: Results

To examine the five research questions, I conducted the following analyses: (a) an independent-samples t-test, (b) a multiple regression, (c) two Pearson correlations, and (d) a hierarchical multiple regression.

Independent-Samples T-Test

I ran an independent-samples t-test to examine the first research question. First, I ruled out the six main assumptions for t-tests. There were no outliers in the data (see Figures 1-3), and there was normal distribution of scores for affect regulation (see Figure 4). Scores on tests of theory of mind and object relations for both the autistic and the comparison group were not normally distributed (see Table 1; see Figures 5-6). However, independent-samples t-tests are robust to deviations from normality, therefore, I decided to carry on with this test. There was homogeneity of variances for theory of mind (p= .594), object relations (p= .696), and affect regulation (p= .186) in both the autistic and the comparison groups (see Table 2).

Mean comparison group theory of mind score (98.75 +/- 15.369) was higher than mean autistic group theory of mind score (88.64 +/- 13.655; see Table 3). Mean comparison group object relations score (100.50 +/- 14.758) was slightly higher than mean autistic group object relations score (100.14 +/- 13.844). Mean autistic group affect dysregulation standard score (124.45 +/- 12.007) and t-score (66.41 +/- 8.231) was higher than mean comparison group affect dysregulation standard score (121.66 +/- 11.179) and t-score (64.43 +/- 7.551). It should be noted that while the standard scores and t-scores for affect dysregulation may seem high in both groups, a t-score of 50 is the lowest score one can obtain on this measure. Any score under a t-score of 70 is considered “normal.” The mean t-score for both groups was within the normal range. There was a statistically significant difference in mean theory of mind scores between the

comparison and the autistic groups, with the comparison group scoring higher than the autistic group, 10.113 +/- 3.099 [mean +/- standard error] $t(86) = -3.263$, $p = .002$, d=.695 (see Table 4). The other differences were not statistically significant.

Absolute mean theory of mind score compared to the general population among individuals with autism was in the low-average range (standard score, 88.64); object relations was in the average (standard score, 100.14); affect dysregulation was in the borderline clinically significant range (t-score, 66.41).

The first research question—*are there differences in scores on a measure of affect dysregulation, theory of mind (mentalization), and quality of object relations between individuals diagnosed with an autism spectrum disorder and comparison subjects*—was partially supported by the results. The autistic group evidenced lower levels of theory of mind than the comparison group. There were no significant differences between groups in degree of affect dysregulation and quality of object relations.

Multiple Regression Analysis

I conducted a multiple regression analysis to examine the second research question. First, I ruled out the eight main assumptions for multiple regressions. There was independence of residuals (see Table 5); linearity (see Figures 7-9); homoscedasticity (see Figure 7); multicollinearity (see Table 6-7); no outliers; and relatively normal distribution of residuals (see Figures 10-11).

R^2 for the overall model was 7.2% with an adjusted R^2 of 2.7%, a small size effect per Cohen (1988). Scores on a measure of theory of mind did not predict scores on a measure object relations quality or affect dysregulation among the autistic group, $F(2, 41) = 1.598$, $p= 0.215$ (>.05) (see Table 8). The second research question—*do scores on a measure of theory of mind*

(mentalization) predict scores on a measure of affect dysregulation and quality of object relations—was not supported by the results.

Pearson Correlation Analysis

I conducted a Pearson partial correlation to examine the third research question. First, I ruled out the five main assumptions for a Pearson correlation. There was a relatively linear relationship between theory of mind and object relations (see Figure 13). However, there was not a linear relationship between theory of mind and affect regulation (see Figure 14). Therefore, the assumption of linearity was violated, making a Pearson partial correlation an invalid analysis. However, because there was linearity between theory of mind and object relations, I conducted a Pearson correlation analysis to assess for possible correlation between these two variables.

I started by ruling out the five assumptions for a Pearson correlation. As was previously analyzed, there was a linear relationship between theory of mind and object relations (see Figure 15). There are no outliers in this data set. Both variables are not normally distributed (see Table 9), however, because Pearson's correlations are somewhat robust to deviations from normality, I continued with this analysis.

There was a small negative correlation between theory of mind and object relations scores, r = -0.261 (see Table 10). A correlation of 0.26 and above is considered statistically significant (.05) among a study with an N of 44. The third research question—*what is the relationship among scores on a measure of affect dysregulation, quality of object relations, and theory of mind (mentalization) in children and adolescents with an autism spectrum disorder*—was partially supported by the research, as it was determined that there is a small negative correlation between theory of mind and object relations scores.

To analyze the fourth research question, I repeated the same analysis for the third

research question but with the comparison group. I tested the five main assumptions for a Pearson Correlation. There was linearity between theory of mind and object relations (see Figure 15); no outliers (see Figure 16). Both variables are not normally distributed (see Table 11), however, because Pearson's correlations are somewhat robust to deviations from normality, I continued with this analysis.

There was not a statistically significant correlation between scores on theory of mind and scores on object relations among the comparison group, r = -0.041 (see Table 12). There was a slightly stronger correlation between scores on a measure of theory of mind and scores on a measure of object relations quality among the autistic group compared to the comparison subjects. The fourth research question—*after discovering the within-group differences, what is the relationship between these differences in individuals with autism versus individuals without autism*—was not supported by the results.

Hierarchical Multiple Regression Analysis

I conducted a hierarchical multiple regression to evaluate the fifth research question. The addition of affect dysregulation to the prediction of group membership did not lead to a statistically significant increase in R^2 of 0.006, F (1, 85) = 0.585, p>.005 (see Table 13). The addition of object relations to the prediction of group membership did not lead to a statistically significant increase in R^2 of .003, F (1, 84) = .323, p>.005. The full model of theory of mind, affect regulation, and object relations to predict group membership was not statistically significant, R^2 = 0.120, F (3, 84) = 3.805, p>.0005, adjusted R^2 = 0.088 (see Table 14). The fifth research question—*what is the best combination of independent variables to predict the dependent variable*—was not supported by the results.

Chapter 5: Discussion and Conclusions

Summary of the Study

My first goal for this study was to provide evidence that individuals with an autism spectrum disorder have less developmental ability for theory of mind (mentalization) and affect regulation compared to individuals without autism. Secondly, I aimed to discover whether the reduced capacity for theory of mind among individuals with autism would also be related to higher scores in a measure of affect dysregulation. This assumption is based on Fonagy's research that presents the development of affect regulation as secondary to the development of mentalization (Fonagy, 2008). Thirdly, I aimed to provide evidence that the quality of object relations among individuals with autism are not "pathological." Despite the evidence that the development of theory of mind and affect regulation are the outcomes of a secure attachment relationship, individuals with autism spectrum disorder may not have insecure attachment relationships.

I must emphasize that the comparison group in this study was a clinical group, not a control group. The comparison group was made up of individuals that were seeking neuropsychological assessment for a variety of clinical issues. When discussing the results, I discussed both the contrast between the autistic and comparison group as well as how the two groups compared to the general population—measured by standardized scores.

Discussion of the Findings

Mentalization (theory of mind). As hypothesized, and supported in previous studies (Dant, 2015; Kana et al., 2009; Kaland et al., 2008; Leibovitch, 2014), the results of this study found that individuals with an autism spectrum disorder had impaired development of theory of mind both compared to the general population as well as compared to the comparison subjects.

Individuals with autism struggled to understand the mental states, thoughts, desires, knowledge, and intentions of others (Lombardo & Baron-Cohen, 2011). As I presented in the literature review, theory of mind is required to develop self-awareness (Hobson et al., 2006). One of the core deficits in autism is poor self-awareness and self-concept (Lombardo & Baron-Cohen). Ogden (1989) proposed that infants that get stuck in the autistic-contiguous mode never see the symbol and symbolized as separate—that process occurs through the paranoid-schizoid and depressive modes. This ultimately results in a lack of subjectivity, or self-awareness. The depressive mode is when the infant starts to see that the object has its own subjectivity, which allows for the consideration of the other and their perspective (i.e. mentalization; Ogden, 1989). Therefore, the results are consistent with Ogden's theorizing regarding the autistic-contiguous mode of object relations.

Affect regulation. The results of this study did not support the hypothesis that individuals with autism have more impaired development of affect regulation compared to the comparison subjects. When compared to the general population, scores on a measure of affect dysregulation varied, with a mean in the average range. This contradicts several studies and theories that have proposed that individuals with autism have difficulty regulating affects (Bachevalier & Loveland, 2006; Mazefsky & White, 2014; Samson et al., 2012; Schore, 2013; Slade, 2009). Considering that the comparison group in this study is a clinical group, I expected that there would be some inherent difficulties with affect dysregulation among some of the comparison subjects. This may explain why there were not significant differences between both groups. However, even when compared to the general population, those with autism did not show high levels of affect dysregulation. I would have expected there to be more consistently high levels of affect dysregulation among those with autism, that is if it were truly a part of the

diagnostic presentation. Following, are other possible explanations for this finding.

Slade (2009) proposed that an infant with autism does not provide the appropriate cues needed for the caregiver to mirror affective states, which impacts the development of affect regulation. However, this theory doesn't account for the ways in which the caregiver may make alternative attempts to connect with the infant. Maybe when the caregivers attempt at engagement is not received, the caregiver instead ends up engaging in more attentive attunement to draw the infant in. It's possible that this subsequently leads to affect regulation. Fonagy, Luyten, and Stathearn (2011) proposed that difficulties with affect regulation between the caregiver and infant puts a strain on the attachment relationship, therefore, the parent ends up losing motivation to continue attempts at trying to engage with the infant. However, maybe this theory does not give enough credit to the caregiver who may continue attempts at engaging with the infant despite the difficulties they experience.

Fonagy and Target (2006), alongside other attachment-based theorists, proposed that affect regulation is developed through contingent mirroring interactions with the caregiver. This indicated that the caregiver is essential to the development of affect regulation. However, another explanation for the lack of affect dysregulation among the group with autism is that maybe the caregiver is not essential to the development of affect regulation. Hartmann (1939) defined what he calls the "average expectable environment," in which the infant fits themselves into the environment which becomes responsive to their needs. This theory proposed that the environment has an impact on the infant, but does not completely shape the infant. Therefore, it is possible that affect regulation is built in, but that it's the environment that impacts whether this is developed. Given that the infant with autism is more internally driven, due to their tendency to withdraw, maybe they aren't using the environment in the same way that others would.

As was discussed in the literature review, Ogden (1989) proposed the autistic-contiguous mode. This is the most primitive mode of object relations in which sensory information is used to form pre-symbolic connections, and the experience of the self is the result of sensations and rhythms. Infants in this mode experience anxiety surrounding a fear of disintegration of their sensory surface. To protect themselves from this anxiety the infant engages in self-soothing activities such as hand twirling and foot-tapping, as well as rhythmic activities such as jogging, rocking and head-banging (Ogden, 1989). Tustin (1991) described this activity as "auto-sensual protective reactions." According to this theory, infants with autism are stuck in this mode. This may explain the finding that individuals with autism did not have high levels of affect dysregulation, as these protective reactions are their way of self-regulating. Their way of regulating may be more internal and bodily-based versus relational and interpersonal.

It's possible, however, that this means of regulating is not sufficient or does not sustain itself throughout life. The sample in this study may have consisted of a large proportion of individuals who could successfully maintain this auto-sensual mode of regulating. However, there may be a point at which individuals find these means of regulating less efficient, leading to more affect dysregulation when these strategies become unsuccessful. This may be more of the case for an individual with autism that is not allowed, or provided, the opportunity to engage in strategies that help them regulate. For example, an adolescent with autism may be more likely to encounter ridicule from peers or others in their environment, which may leave the individual making attempts to avoid engaging in these behaviors. Future research could control for this by assessing a larger sample of adolescents and young adults with autism spectrum disorders, versus children.

It may also be possible that the dysregulation observed among those with autism is the

result of an interaction that occurs with their environment in which others respond to their modes of regulation in a way that subsequently creates dysregulation. Fonagy and Target (2008) proposed that affect dysregulation among those with borderline personality disorder is contextual. This may also be the case for individuals with autism. The measure of affect dysregulation in this study was completed by the parents of the subject. Future research could include observations made in various contexts and then look for possible variability.

As discussed further in the limitations section, there were some methodological limitations to this study that could have contributed to the lack of affect dysregulation among those with autism. Therefore, it is possible that the finding that individuals with autism do not have more affect dysregulation when compared to the comparison group and the general population may not be accurate. Given the large amount of research that evidences affect dysregulation among those with autism, this should be seriously considered when interpreting the results of this study.

Quality of object relations. Another main finding of the present study was that the quality of object relations among individuals with an autism spectrum disorder were no more pathological than the comparison group, and was average in comparison to the general population. This result is inconsistent with what is experienced by individuals with borderline personality disorder. Fonagy and Target (2006) proposed that individuals with a borderline personality disorder have disorganized attachment relationships which lead to difficulties regulating affects as well as difficulties maintaining mentalization. Fonagy (2008) also proposed that individuals with borderline personality disorder are deprived of the opportunities to develop mentalization for many reasons, one of which being that they defensively avoid considering the mind of the other due to disruptive experiences with their caregivers. Individuals with

disorganized attachment relationships are more likely to have high "pathological" scores on the Rorschach Mutuality of Autonomy Scale. This was not seen among the subjects with autism in this study.

According to some object relations theories, individuals with autism are stuck in the autistic-contiguous position. The infant and the object are one (Winnicott, 1960), and the infant defends against anxiety regarding disappearing by re-establishing the continuity of their sensory surface through self-soothing activities. Infants stuck in this stage withdraw from the caretaker, which is different than those stuck in the paranoid-schizoid mode who engage in defensive splitting. Therefore, the Rorschach responses would not be "pathological" for those with autism, as they haven't reached that level of object relatedness. Upon inspection of the Rorschach responses among individuals with autism, I noticed that the responses lacked an indication of relationships. The responses tended to involve one item, and when there was more than one object little to no description was made to indicate the relationship between the two objects. I also noticed that humans were often not involved in the responses. This is consistent with what Ogden (1989) proposed regarding the experience of individuals who develop autism, as the infant's object relations are more sensory-dominated versus interpersonally-dominated.

These results are consistent with the literature regarding attachment security of individuals with autism. Taylor et al. (2008) found that individuals with autism were no less attached than those without autism, but that there were some difficulties in the coherence of their attachment narrative and less reflective functioning in their relationship with the caregiver. Haltigan et al. (2011) also found that individuals with autism were not less likely to develop secure attachments, but that they showed a reduction in affective displays expressed in caregiver-infant interactions. The results of this study show that individuals with autism don't

have pathological object relations compared to both the comparison group and the general population, which is often found among individuals with insecure attachments. Therefore, it appears likely that individuals with autism are not more likely than individuals without autism to have insecure attachments. However, the attachment between a caregiver and an individual with autism does appear to be expressed differently.

Relationship between mentalization and quality of object relations. There was a slight, but statistically significant, negative correlation between scores on a measure of theory of mind and a measure of object relations quality among the autistic group. This means that when object relations quality was more "pathological" among those with autism, scores on a measure of theory of mind decreased. This result points to a connection between the quality of object relations and the development of theory of mind, or mentalization. As was discussed earlier, Fonagy (2008) proposed that disrupted attachment relationships—particularly in association with attachment trauma—affects the ability to maintain consistent mentalization skills. The results of this study provide evidence that, among those with autism, the more pathological the object relations the less likely the individual is to develop mentalization. However, this result should be interpreted cautiously, as the correlation was small. Additionally, because there were few cases in which object relations was pathological within the autistic group, there is less variability because there is a restricted range.

Relationship between mentalization and affect dysregulation. As was expected, given that individuals with autism did not have high levels of affect dysregulation both compared to the comparison group and the general population, scores on a measure of theory of mind did not predict higher affect dysregulation among individuals with an autism spectrum disorder. Samson et al. (2012) as well as Mazefsky and White (2014) proposed that difficulties with mentalization

could lead to an inability to develop affect regulation. They stated that taking the perspective of others could cause individuals with autism to misinterpret the intentions of others, leading to frustration, disconnection, and the inability to engage with the caregiver in a way where they would be able to develop affect regulation. They also stated that there are symptoms that are inherent in autism that could interfere with affect regulation, such as difficulty identifying, describing, and distinguishing emotions (Mazefsky & White, 2014). However, as was discussed before, it's possible that while these difficulties may get in the way of the infant with autism developing affect regulation through their caregiver, they may have their own inherent way of developing affect regulation despite difficulties with mentalization. Or, as was also stated, it's possible that the finding that individuals with autism don't have clinically significant affect dysregulation is the result of some methodological limitations, which would also impact the comparison between scores on theory of mind and affect dysregulation.

Limitations and Future Research

The current findings offer important stepping-stones for future research. However, there are some limitations that must be considered. As was discussed earlier, the comparison subjects were chosen from a clinical population; individuals seeking neuropsychological evaluation. Due to this, it's possible that the subjects weren't the best representation of what would be considered "neurotypical." This could have led to more affect dysregulation and pathological object relations amongst the comparison group, making it difficult to see affect dysregulation among the autistic group. Future research could replicate the study using a true control group, administering the measures to both individuals with and without autism.

Another limitation that could have impacted the results is that the three constructs being measured in this study—quality of object relations, mentalization, and affect regulation—are

said to be developmental. To collect enough participants for this study, I had to have a wide range in regards to age. Therefore, it's possible that the younger participants hadn't fully developed these skills, and that this would be the case for both the comparison and the autistic group; skewing the data. Future research could have a smaller range in age, stick with an older sample, or control for this statistically.

The present study involved the use of archival data, therefore, I did not have control over what measures were administered. This may have contributed to some limitations, as it is possible that there were other measures that would have better measured the constructs. Some measures were more limiting than others. It is possible that the measure that was used for affect dysregulation may not have captured the nuances of the construct, picking up more emotional concerns as the instrument is not traditionally used to measure affect dysregulation.

It also appears that there were some limitations in the use of the Mutuality of Autonomy Scale to measure object relations quality. The Mutuality of Autonomy scale Rorschach responses are rated from 1 to 7 based on if the response indicates pathological object relations (scores closer to 7) or positive/adaptive object relations (scores closer to 1). Items that do not include a relationship are not given a score. Therefore, someone with a lower score would be considered to have intact object relations, when it is possible that the responses did not include any indication of a relationship. The study may have benefited from a different measure of object relations, possibly the Object Relations Scale: Global Rating Method (SCORS-G; Hilsenroth, Stein, & Pinsker-Aspen, 2007). Future research could benefit from a more accurate measure of this construct. An additional limitation of this measure is that it requires strong expressive language. Comorbid expressive language disorders were found among many of the subjects with an autism spectrum disorder, which may have caused them to provide more basic or brief responses rather

than ones that could have included more negative (or positive) object relations. The study could also be replicated through using Conklin, Malone, and Fowler's (2012) method for assessing mentalization. This method involves examining Rorschach responses that include human movement relationships (M+/M-/GHR/PHR) and the use of texture (T). The texture is used to assess the ability to form attachments. The human movement responses are used to assess empathy, social understanding, and boundary formation (Conklin et al., 2012).

Lastly, there may be some limitations to the use of the Gilliam Autism Rating Scale and the Asperger's Syndrome Diagnostic Scale to evidence the diagnosis of autism. There is research supporting that more extensive testing, such as the Autism Diagnostic Observation Schedule (ADOS), is needed (Filipek et al., 1999). Future research could include a more thorough evaluation of whether the autistic participants met the diagnostic criterion for an autism spectrum disorder.

An interesting future study that could provide more clarity into the relationship between affect regulation and object relations would be to take half of the sample from both the autistic and the comparison groups in this study that had high affect dysregulation, and compare the quality of object relations between both groups. I would hypothesize that object relations may become more pathological in the comparison subjects with high affect dysregulation, but object relations quality would not become more pathological in the individuals with autism that have more affect dysregulation. Another future study could measure theory of mind, affect dysregulation, and object relations pre- and post psychodynamic psychotherapy to determine if it has an impact on the development of these constructs. Overall, given the limitations of the present study, these findings should be regarded as very preliminary, encouraging further research in this direction.

Implications and Conclusions

Much debate has occurred regarding the etiology of theory of mind or mentalization impairments in autism. Regardless of the etiology, these results shed light on the difficulty individuals on the autism spectrum experience understanding the mental state of others—their thoughts, desires, beliefs, and intentions. As I have presented throughout this study, difficulties in theory of mind can contribute to difficulties interpreting social cues, making it difficult to relate socially with peers. Therefore, the results help to clarify some of the processes behind the difficulties individuals with an autism spectrum disorder have relating and engaging socially. The study also supports that individuals with autism may have challenges with self-awareness and development of subjectivity. This highlights the importance of psychotherapeutic interventions that aid in the development of mentalization, given that mentalization capacity is essential for the development of self-awareness (Hobson et al., 2006).

While there is no evidence from this study that individuals with autism have difficulties with affect dysregulation, both compared to the comparison subjects and the general population, it does not rule out the potential benefits of using a mentalization-focused approach to therapy with individuals on the spectrum. Mentalization-based therapy aims to "strengthen the patient's sense of self" (Bateman & Fonagy, 2013, p. 599) through maintaining mentalization through the interactions between patient and therapist, while also aiming to maintain a good level of arousal (Bateman & Fonagy, 2013). Fonagy and Allison (2014) also proposed that while mentalization-based therapy can be helpful for addressing mentalization, it can be just as helpful to have a "mentalizing therapist" (p. 372). Directive psychotherapies that teach theory of mind skills may be effective, but it does not eliminate the potential benefit of a less-directive, relationally-focused approach to gaining mentalization capacity.

If infants with autism are stuck in an early stage of the development of object relations, it would be logical to engage in a treatment that involves interpersonal engagement. Additionally, the development of mentalization requires another person. While interpersonal engagement is inherently challenging for someone with autism, it may not mean that it is impossible. In fact, numerous psychodynamic therapists have written about their successful experiences treating individuals on the spectrum (see Duckham & Yann, 2016; Hoffman & Rice, 2012).

The results help to clarify the role of the caregiver in the development of affect regulation, providing evidence for the possibility that affect regulation may be something that the infant can develop without contingent mirroring interactions with the caregiver. It's possible that without the ability to relate interpersonally, an infant can fall upon some inherent abilities to regulate emotions—through bodily-based rhythmic experiences such as rocking, tapping, counting, etc. This may help to understand the ways that we—therapists, mental health workers, but also parents—can support individuals with autism to make sure that they can maintain affect regulation. Whether that means providing sensory-related experiences that are soothing for them, or helping them to develop alternative ways of regulating affects.

The results of this study can be useful for early intervention with parents who have children on the spectrum. As was discussed earlier, parents often experience a lot of anxiety and frustration regarding these failed experiences to connect and regulate their infants. As Slade (2009) stated, the infant is often confronted with parental affects that are hard to tolerate, as they are full of "unmodulated parental anxiety and anger" (p. 12). It's difficult to parent a child that is unable to connect interpersonally, and the disappointment of these failed interactions can lead to depression and exhaustion on the part of the parent (Slade, 2009). Psychoeducation regarding this process could be validating and supportive. Additionally, it's possible that the therapist

working with parents of children on the spectrum could help the parents to adjust the way in which they engage with their infant so that they are more likely to gain affect regulation skills through their caregiver.

John Elder Robison (2016) has written four books about his experiences as an individual diagnosed with an autism spectrum disorder. He speaks about some of the values of detachment, and states that;

> All I knew was that I was a good guy in a crisis because my logical mind took charge. Today I know that it's because I'm autistic, and autism has given me a mixture of disabilities and gifts. Being blind to the emotional cues of other people can be crippling, but my sense of logic and order has also been a great benefit. (p. 19)

His difficulties with mentalizing allowed him to put his emotions aside during a moment that could cause others a lot of dysregulation. This skill also appeared to have protected him from the psychological consequences of growing up in a household where his father was physically abusive and his mother was suffering from a mental illness. His lack of interpersonal connection during childhood was a protective mechanism against later traumatic responses. He also describes the ways in which his difficulties picking up on the cues of others protected him from the bullying he experienced due to his diagnosis;

> My childhood was mostly lonely, but maybe that was just as well. Looking back, I think my oblivious nature protected me. Other kids called me names and insulted me, but most of it rolled right off. I heard their words clearly but the true meaning escaped me. Today, when I recall some of the bad things people said, I realize (with the benefit of adult hindsight) that there must have been a million other almost-as-bad things that didn't penetrate my awareness. (p. 19)

He identified the ways in which is obliviousness were protective against experiencing the social disconnection and criticism from his peers. Ogden (1989) spoke about autistic withdrawal as a defense mechanism against intense anxiety that the infant experiences during infancy. This defense mechanism appears to continue into childhood, adolescence, and even adulthood. This points to the importance of early intervention so that the child can come up with ways of managing this anxiety without defensively withdrawing. For John Elder Robison, it worked well as a means of protecting against his chaotic upbringing, but there are many individuals with autism withdrawing from parents that are supportive and available.

Psychodynamic psychotherapy could also be beneficial in facilitating the development of object relations among those with autism. The results supported that individuals with autism don't have pathological object representations. Per Sanders, Hilsenroth, and Fowler (2014), attachment style and object relations are predictors for the ability to establish a therapeutic alliance with the therapist. The term *therapeutic alliance* is a way of describing the working relationship between the patient and the therapist. Having a strong therapeutic alliance tends to lead to more success in therapy, and is often seen as the major avenue for change in psychodynamic psychotherapy. To develop a therapeutic alliance, the patient must be able to have mutuality in relationships, and have trust for the therapist (Sanders et al., 2014). This may be difficult to establish with someone with autism. However, should it be established, it could be a beneficial avenue for development of good object representations and the further ability to consider the mind of the other.

John Elder Robison (2007) also speaks about how he has always wanted interpersonal connection—that the assumption that individuals with autism "prefer to be alone" is inaccurate;

As a functional Aspergian adult, one thing troubles me deeply about those kids who end

> up behind the second door. Many descriptions of autism and Asperger's describe people like me as "not wanting contact with others" or "preferring to play alone." I can't speak for other kids, but I'd like to be very clear about my own feelings: I did not ever want to be alone. And all those child psychologists who said "John prefers to play by himself" were dead wrong. I played by myself because I was a failure at playing with others. I was alone as a result of my own limitations, and being alone was one of the bitterest disappointments of my young life. (p. 211)

Just because individuals with autism struggle to connect with others does not mean that they don't want to have relationships with others. As John Elder Robison describes, it can be a source of great disappointment to go through life unable to connect and not understand why. This is precisely why it is important that individuals with autism get psychotherapy—particularly a therapy that focuses on relationship—so that they can gain mentalization skills in the context of an attachment relationship where they feel safe.

One of the primary goals of this research was to gain more diagnostic clarity into the difficulties that individuals on the spectrum experience. This goal was accomplished, particularly in clarifying the role that affect regulation plays in the diagnosis – that it's possible that individuals with autism find an alternative mechanism for regulating their affects that does not require being able to engage interpersonally with their caregiver. The study also helped to understand that despite difficulties with mentalization, individuals with autism don't necessarily develop pathological object representations, which is seen among those with attachment trauma. While the study did provide some clarity into the experiences of individuals on the spectrum, there is room for more exploration and future research.

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Appendix A: Description of Measures

NEPSY-II theory of mind subtest. The NEPSY-II is a cognitive assessment that can be used for individuals aged three to sixteen (Korkman, Kirk, & Kemp, 2007). The Theory of Mind subtest assesses the ability to understand mental functions; the ability to understand that others have their own thoughts, ideas, and feelings; and the ability to understand how emotion relates to social context (Korkman, Kirk, & Kemp, 2007). The theory of mind subtest has a verbal task and a contextual task. In the verbal task the individual completes fifteen items that assess belief, intention, deception, emotion, imagination/pretending, and imitation. It also assesses the individual's understanding of another's thoughts, ideas, and feelings. Lastly, it looks at how the individual comprehends abstract meanings in figurative language. The contextual task assesses the ability to relate emotion to social context. The child is shown a picture that depicts a child in different social contexts, and is then asked to select one of four photos that depict appropriate affect for the target child in the picture.

> Verbal Task Item Example: The participant is shown a box that has pictures of red blocks on the outside and is asked "what do you think is in the box?" The individual typically responds by saying "blocks." The examiner opens the box and shows them that they are correct, there are red blocks in the box. The examiner then points to an identical box and asks "what do you think is in this box?" The participant typically says "blocks." The examiner opens the box and says "actually, there are pencils in this box." Then the examiner says "If someone were to walk into the room right now and I asked them what they thought was in this box, what do you think they would say?" If the participant his adequate theory of mind capacity they will respond with "blocks" gaining them a score of "1", however, if the individual has inadequate theory of mind capacity, they will respond with "pencils."
>
> Contextual Task Item Example: The examiner says, "The following Items are about Julia. I will show you a picture of something that has happened to Julia. Next to the picture you will see four photos of Julia's face. I would like you to choose which picture shows the best how Julia is feeling in the picture." One example represents Julia having just thrown a baseball into one of the windows of the house. The participant must choose the appropriate face that represents how she would feel.

Achenbach child behavior checklist (CBCL). The CBCL (Achenbach & Rescorla, 2001) is a questionnaire that measures emotional and behavioral problems in children and adolescents from the ages of 6-18. There are three versions; self-report, parent-report, and teacher report. It has been tested and supported based on both reliability and validity by a number of researchers (Berube & Achenbach, 2010). This measure will be used both to determine affect regulation difficulties as well as symptoms of ADHD. The instructions for the questionnaire are as follows; "Below is a list of items that describe pupils. For each item that describes the pupil ***now or within the past 2 months,*** please circle the ***2*** if the item is ***very true or often true*** of the pupil. Circle the ***1*** if the item is ***somewhat or sometimes true*** of the pupil. If the item is ***not true*** of the pupil, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to the pupil." The responses are then inputted into a computer program that provides a DSM-5-Oriented Scale and a Syndrome Scale. Within the DSM-5 oriented scale the following areas are assessed; Depressive, Anxiety, Somatic, ADHD, Oppositional Defiant, and Conduct problems.

Within the Syndrome Scale the following areas are assessed; Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior. The researcher will be using the CBCL-Dysregulated Profile (CBCL-DP) to measure affect regulation (Althoff, Ayer, Retlew, & Hudjeak, 2010).

> Affect regulation Item Examples (teacher form): "Cries a lot." "Apathetic or unmotivated." "Explosive and unpredictable behavior."
> Affect regulation Item Examples (parent form): "there is very little he/she enjoys." "feels worthless or inferior." "Too fearful or anxious."
> ADHD Item Examples (teacher form): "Can't sit still, restless, or hyperactive." "Daydreams or gets lost in his/her thoughts." "Disrupts class discipline."
> ADHD Item Examples (parent form): "Can't concentrate, can't pay attention for long." "impulsive or acts without thinking." "inattentive or easily distracted."

The Rorschach mutuality of autonomy scale (MOA). The MOA was developed by Urist and colleagues (Urist, 1977) to assess the responses of the Rorschach to determine whether transactions between objects represented in the cards are reflective of positive and empathic connectedness, or malevolence and destruction. The scale consists of seven points; the lower points indicating positive object relations and the latter points indicating negative object relations (Kelly, 1996). Each response is given a score from 1 to 7 (Fowler & Erdberg, 2005). This is then translated into a pathological score (PATH), in which all the level 5, 6, and 7 scores are summed. A PATH score higher than two is considered worthy of poor object relations (Fowler & Erdberg, 2005).

Gilliam autism rating scale (GARS). The GARS is a questionnaire aimed at both identifying and diagnosing autism in individuals aged three to twenty-two (Gilliam, 2006). The measure also indicates severity of autism. The 42 test items are divided into three subscales; stereotyped behaviors, communication, and social interaction. These three subscale scaled-scores are then summed to produce the Autism Index score, leading to the likelihood of autism as well as an understanding of the severity of the problematic behavior (Gilliam, 2006). The directions for the questionnaire are as follows; "Rate the following items according to the frequency of occurrence. Use the following guidelines for your ratings: 0 Never observed – you have never seen the individual behave in this manner. 1 Seldom observed – individual behaves in this manner 1-2 times per 6-hour period. 2 Sometimes observed – individual behaves in this manner 3-4 times per 6-hour period. 3 Frequently observed – individual behaves in this manner at least 5-6 per 6-hour period." Circle the number that best describes your observations of the individual's typical behavior under ordinary circumstances (i.e., in most places, with familiar people, and in usual daily activities). Remember to rate every item. If you are uncertain about how to rate an item, delay the rating and observe the individual for a 6-hour period to determine your rating. REMEMBER, EVERY ITEM SHOULD RECEIVE A SCORE."

> Stereotyped Behaviors Subscale Item Examples: "Avoids establishing eye contact; looks away when eye contact is made." "Whirls, turns in circles." "Slaps, hits, or bites self or attempts to injure self in other ways."
> Communication Subscale Item Examples: "Repeats (echoes) words verbally or with

signs." "Does not ask for things he or she wants." "Repeats unintelligible sounds (babbles) over and over."
Social Interaction Subscale Item Examples: "Stares or looks unhappy or unexcited when praised, humored, or entertained." "Shows no recognition that a person is present (i.e., looks through people." "Becomes upset when routines are changed."

Asperger's Syndrome Diagnostic Scale (ASDS). The ASDS is a questionnaire aimed at examining specific behaviors to help assess the likelihood of Asperger Syndrome, document behavioral progress, target goals for change and intervention, and measure Asperger Syndrome for research purposes (Myles, Jones-Bock, and Simpson). The scale can be completed in 15 minutes by anyone who knows the individual well. There are five areas measured through the questionnaire; cognitive, maladaptive, social, and sensorimotor. Scores all these five area are summed to produce a total score.

Appendix B: Disclosure Form

CONSENT TO USE AND DISCLOSE YOUR HEALTH INFORMATION

SIGNATURE PAGE

This form is an agreement between you _____ and (name of practice). When we use the word "you" below it will mean your child, relative, or other person if you have written his name here.

When we examine, diagnose, treat, or refer you we will be collecting what the law calls Protected Health Information (PHI) about you. We need to use this information here to decided on what treatment is best for you and to provide treatment to you. We may also share this information with others who provide treatment to you or need it to arrange payment for your treatment or for other business or government functions.

By signing this form you are agreeing that you have read and understand our Notice of Privacy Policies and you are agreeing to let us use your information here and send it to others in accordance with our written policies. Please make sure you have read and understand our Privacy Policies above before signing this consent form.

If you do not sign this consent form agreeing to what is in our Notice of Privacy Policies, we cannot treat you.

In the future we may change how we use and share your information and so may change our Notice of Privacy Policies. IF we do change it, you can get a copy from our website or by calling us at (practice phone number).

If you are concerned about some of your information, you have the right to ask us not to use or share some of your information for treatment, payment or administrative purposes. You will have to tell us what you want in writing. Although we will try to respect your wishes, we are not required to agree to these limitations. However, if we do agree, we promise to comply with your wish.

After you have signed this consent, you have the right to revoke it (by writing a letter telling us you no longer consent) and we will comply with your wishes about using or sharing your information from that time on but we may already have used or shared some of your information and cannot change that.

I authorize.. (name of clinicians in practice)… to release/obtain information to/from (name, telephone number and address of person to whom the information is to be released/obtained).

_____

_____

_____

_____

_____
Signature of client or personal representative

_____
Printed name of client or personal representative

_____
Date of Signature

_____
Date received

Appendix C: Informed Consent

NOTICE OF PRIVACY POLICIES TO PROTECT THE PRIVACY OF YOUR HEALTH INFORMATION

This notice describes how psychological and medical information about you may be used and disclosed and how you can get access to this information.

Please read it carefully!

I. Uses and Disclosures for Treatment, Payment and Health Care Operations

We may use or disclose your protected health information (PHI), for treatment, payment, and health care operations purposes with your consent. To help clarify these terms, here are some definitions:

- "PHI" refers to information in your chart that could identify you.
- "Treatment, Payment and Health Care Operations"

Treatment is when we provide, coordinate or manage your health care and other services related to your health care. An example of treatment would be when we consult with another health care provider, such as your PCP or another therapist.

Payment is when we obtain reimbursement for your healthcare. Examples of payment are when we disclose your PHI to your health insurer to obtain reimbursement for your health care or to determine eligibility or coverage.

Health Care Operations are activities that relate to the performance and operation of my practice. Examples of health care operations are quality assessment and improvement activities, business-related matters, such as audits and administrative services, and case management and case coordination.

Use applies to activities within my practice, such as sharing, employing, applying, utilizing, examining, and analyzing information that identifies you.

Disclosure applies to activities outside of my practice, such as releasing, transferring, or providing access to information about you to other parties.

II. Uses and Disclosures Requiring Authorization

We may use or disclose PHI for purposes outside of treatment, payment and health care operations when your appropriate authorization is obtained. An *"authorization"* is written permission above and beyond the general consent that permits only specific disclosures. In those instances when we asked for information for purposes outside of treatment, payment and health care operations, we will obtain an authorization form you before releasing this information. We will also need to obtain an authorization before

releasing your psychotherapy notes. *"Psychotherapy notes"* are notes we have made about our conversation during a private, group, joint, or family counseling session, which we have kept separate from the rest of your chart. These notes are given a greater degree of protection than PHI. It is (name of practice) policy not to keep separate psychotherapy notes. All documentation we keep is a part of your clinical chart.

We will also obtain an authorization from you before using or disclosing PHI in a way that has not been described in this notice.

We will not use your PHI for marketing or sales purposes under any conditions.

III. Uses and Disclosures with Neither Consent nor Authorization

We may use or disclose PHI without your consent or authorization in the following circumstances:

- **Child Abuse:** If we, in our professional capacity, have reasonable cause to believe that a minor child is suffering physical or emotional injury resulting form abuse inflicted upon him or her which causes harm or substantial risk or harm to the child's health or welfare (including sexual abuse), or from neglect, including malnutrition, we must immediately report such a condition to the (local department for children and families).
- **Adult and Domestic Abuse:** If we have reasonable cause to believe that an elderly person (age 60 or older) is suffering or has died as a result of abuse, we must immediately make a report to the (local department for children and families).
- **Health Oversight:** The Board of Registration that applies to our particular license to practice has the power, when necessary, to subpoena relevant records should we be the focus of an inquiry.
- **Judicial or Administrative Proceedings:** If you are involved in a court proceeding and a request is made for information about your diagnosis and treatment and the records thereof, such information is privileged under state law and we will not release information without written authorization form you or your legally-appointed representative, or a court order. The privilege does not apply when you are being evaluated for a third part or where the court evaluation is court ordered. You will be informed in this case.
- **Serious Threat to Health or Safety:** If you communicate to us an explicit threat to kill or inflict serious bodily injury upon an identified person and you have the apparent intent and ability to carry out the threat, we must take reasonable precautions. Reasonable precautions may include warning the potential victim, notifying law enforcement, or arranging for your hospitalization. We must also do so if we know you to have a history of physical violence and we believe there is a clear and present danger that you will attempt to kill or inflict bodily injury upon an identified person. Furthermore, if you present a clear and present danger to yourself and refuse to accept further appropriate treatment and we have a reasonable basis to believe that you can be committed to a hospital, we must seek said commitment and may contact members of your family or other individuals if it would assist in

protecting you.

- **Workers Compensation:** If you file a worker's compensation claim, your records relevant to that claim will not be confidential to entities such as your employer, the insurer and the Division of Worker's Compensation.

  When the use and disclosure without your consent or authorization is allowed under sections of Section 164.512 of the Privacy Rule and the state's confidentiality law, this includes certain narrowly defined disclosures to law enforcement agencies, to a health oversight agency (such as HHS or a state department of health), to a coroner or medical examiner, for public health purposes relating to disease or FDA-regulated products, or for specialized government function such as fitness for military duties, eligibility for VA benefits, and national security and intelligence.

IV. Patient's Rights and Mental Health Clinician's Duties

Patient's Rights:

- **Right to Request Restrictions:** You have the right to request restrictions on certain uses and disclosures of protected health information about you. However, we are not required to agree to a restriction you request.
- **Right to Receive Confidential Communications by Alternative Means and Alternative Locations:** You have the right to request and receive confidential communications of PHI by alternative means and at alternative locations. (For example, you may not want a family member to know that you are seeing me. Upon your request, we will send your bills to another address).
- **Right to Inspect and Copy:** You have the right to inspect or obtain a copy (or both) of PHI in our mental health and billing records used to make decisions about you for as long as the PHI is maintained in the record. We may deny your access to PHI under certain circumstances, but in some cases, you may have the decision reviewed. On your request, we will discuss with you the details of the amendment process.
- **Right to Amend:** You have the right to request an amendment of PHI for as long as the PHI is maintained in the record. We may deny your request. On your request, we will discuss with you the details of the amendment process.
- **Right to an Accounting:** You generally have the right to receive an accounting of disclosures of PHI for which you have neither provided consent nor authorization (as described in Section III of this notice). On your request, we will discuss with you the details of the accounting process.
- **Right to Paper Copy:** You have the right to obtain a paper copy of the notice from us upon request, even if you have agreed to receive the notice electronically.
- **Right to Restrict Disclosures When You Have Paid for Your Care Out-of-Pocket:** You have the right to restrict the certain disclosures of PHI to a health plan when you pay out-of-pocket or in full for your services.
- **Right to Be Notified if There is a Breach of Your Unsecured PHI:** You have a right to be noticed if: (a) there is a breach (a use of disclosure of your PHI in violation of the HIPAA Privacy Rule) involving your PHI; (b) that PHI has not been encrypted to government standards; and (c) my risk assessment fails to determined that there is a low probability that your PHI has been compromised.

Mental Health Clinician's Duties:

- We are required by law to maintain the privacy of PHI and to provide you with a notice of our legal duties and privacy practices with respect to PHI.
- We reserve the right to change the privacy policies and practices described in the notice. Unless we notify you of such changes, however, we are required to abide by the terms currently in effect. If we revise our polices and procedures, we will notify current clients and post the new policies in the waiting area.

V. Complaints

If you are concerned that we have violated your privacy rights, or you disagree with a decision we made about access to your records, you may contact our Privacy Officer (name of clinician). If you are a client of (name of clinician) you may contact (second clinician). You may also send a written complaint to the Secretary of the U.S Department of Health and Human Services. The person listed above can provide you with the appropriate address upon request.

Effective Date and Changes to Privacy Policy

This notice will go into effect September 24, 2013. We reserve the right to change the terms of this notice and to make the new notice provisions effective for all PHI that we maintain. We will notify current clients of changes in person or by mail and closed client cases can, if interested, call and ask if our policies have changed and obtain a copy by mail or view one in our waiting area.

I understand and acknowledge the HIPAA regulations for (name of practice)

Signature Date

Appendix D: Research Agreement

RESEARCH AGREEMENT

This research agreement is entered into as of 06/30/2016 by and between Rosalyn DeVincentis, an Antioch University New England clinical psychology doctoral student fulfilling requirements for a doctoral dissertation, and (*name of clinician*) the director of training at (*name of practice*).

(*Name of clinician*) agrees to allow Rosalyn DeVincentis to use archival data for the purposes of completing a research study to fulfill the completion of her dissertation as well as publication of the research.

Intellectual and Industrial Property Rights:
Rosalyn DeVincentis has the right to be recognized as the holder of any intellectual and/or industrial property rights; to be identified as the sole author of her dissertation, and publications. Rosalyn DeVincentis will maintain sole responsibility for both the methodology of the research and the chosen analysis of the data.

Confidentiality
Rosalyn DeVincentis undertakes to keep private any confidential data or information that may be provided or disclosed to her orally, in writing, in graphic form, or by any other means by (*name of practice*); not to disclose, communicate, transfer or divulge such data or information to any third party; and to use any information obtained for the purpose of completing her doctoral thesis and for publication of such research.

Rosalyn DeVincentis undertakes not to disclose any information concerning the research project in which she is participating that is identified as confidential without first obtaining the express written authorization of (*name of practice*). Rosalyn DeVincentis agrees to sign any non-disclosure agreements as required by (*name or practice*).

Undertakings regarding confidentiality and privacy shall continue in force and remain binding even after administrative relationship between the doctoral student and (*name of* practice) has ended.

Signatures:

(*Name of Practice)*	**Antioch University New England**
By: _____	By: _____
Print Name: _____	Print Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

Table 1

Shapiro-Wilk Test to Assess if the Scores are Normally Distributed for the Independent Samples T-Test Analysis.

		Shapiro-Wilk		
Variable	***Group***	***Statistic***	***df***	***Sig.***
Theory of Mind	Autistic	.939	44	.021
	Comparison	.867	44	.000
Object Relations	Autistic	.817	44	.000
	Comparison	.797	44	.000
Affect Dysregulation	Autistic	.968	44	.254
	Comparison	.972	44	.363

Table 2

Levene's Test to Assess Homogeneity of Variances for the Independent Samples T-Test Analysis.

		Levene's Test for Equality of Variances	
		F	***Sig.***
Variable			
Theory of Mind	Equal variances assumed	.594	.443
Object Relations	Equal variances assumed	.696	.407
Affect Dysregulation	Equal variances assumed	.186	.668

Table 3

Group Statistics to Compare Means for the Independent Samples T-Test Analysis.

	Group	N	Mean	Std. Deviation
Theory of Mind	Autistic	44	88.64	13.655
	Comparison	44	98.75	15.369
Object Relations	Autistic	44	100.14	13.844
	Comparison	44	100.50	14.758
Affect Dysregulation	Autistic	44	66.41	8.231
	Comparison	44	64.43	7.551

Table 4

Independent Samples T-Test Assessing Equality of Means.

	T-Test for Equality of Means						
						95% Confidence Interval of the Difference	
	t	***df***	***Sig (2-tailed)***	***Mean Difference***	***Std. Error Difference***	***Lower***	***Upper***
Theory of Mind	-3.26	86	.002	-10.114	3.099	-16.275	-3.952
Object Relations	-.119	86	.905	-.364	3.051	-6.428	5.701
Affect Dysregulation	1.13	86	.261	2.795	2.473	-2.121	7.712

Table 5

Durbin-Watson Test to Assess Independence of Residuals for the Multiple Regression Analysis.

Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.269	.072	.027	13.469	2.029

Table 6

Correlations to Assess Multicollinearity for the Multiple Regression Analysis.

	Variable	Theory of Mind	Object Relations	Affect Dysregulation
Pearson	Theory of mind	1.000	-.261	.046
	Object Relations	-.261	1.000	.072
	Affect Dysregulation	.046	.072	1.000
Sig. (1 tailed)	Theory of mind	.	.044	.384
	Object Relations	.044	.	.320
	Affect Dysregulation	.384	.320	.

Table 7

Coefficients to Assess Multicollinearity for the Multiple Regression Analysis.

	Collinearity Statistics	
Variable	Tolerance	VIF
Object Relations	.995	1.005
Affect Dysregulation	.995	1.005

Table 8

Analysis of Variance (ANOVA) to Assess Prediction of Scores for the Theory of Mind Variable for the Multiple Regression Analysis.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	579.934	2	289.967	1.598	.215
Residual	7438.248	41	181.421		
Total	8018.182	43			

Table 9

Shapiro-Wilk Test to Assess Normality for the Pearson Correlation Analysis.

	Shapiro-Wilk		
Variable	***Statistic***	***df***	***Sig.***
Theory of Mind	.939	44	.021
Object Relations	.817	44	.000

Table 10

Pearson Correlations.

	Theory of Mind	Object Relations
Theory of Mind		
Pearson Correlation	1	-.261
Sig. (2-tailed)		.087
N	44	44
Object Relations		
Pearson Correlation	-.261	1
Sig. (2-tailed)	.087	
N	44	44

Table 11

Shapiro-Wilk Test to Assess Normality for the Second Pearson Correlation Analysis.

Variable	Shapiro-Wilk		
	Statistic	***df***	***Sig.***
Theory of Mind	.867	44	.000
Object Relations	.797	44	.000

Table 12

Second Pearson Correlation.

	Theory of Mind	Object Relations
Theory of Mind		
Pearson Correlation	1	-.041
Sig. (2-tailed)		.793
N	44	44
Object Relations		
Pearson Correlation	-.041	1
Sig. (2-tailed)	.793	
N	44	44

Table 13

Hierarchical Multiple Regression to Assess Differences Between the Models.

					Collinearity Statistics				
Model	**R**	**R square**	**Adjusted R Square**	**Std. error of the Estimate**	***R square change***	***F change***	***df1***	***df2***	***Sig. F Change***
1	.332	.110	.100	.477	.110	10.648	1	86	.002
2	.341	.116	.095	.478	.006	.585	1	85	.447
3	.346	.120	.088	.480	.003	.323	1	84	.571

Table 14

Hierarchical Multiple Regression to Assess Significance of the Models.

	Model	Sum or Squares	df	Mean square	F	Sig
1	Regression	2.424	1	2.424	10.648	.002
	Residual	19.576	86	.228		
	Total	22.000	97			
2	Regression	2.558	2	1.279	5.591	.005
	Residual	19.442	85	.229		
	Total	22.000	87			
3	Regression	2.632	3	.877	3.805	.013
	Residual	19.368	84	.231		
	Total	22.000	87			

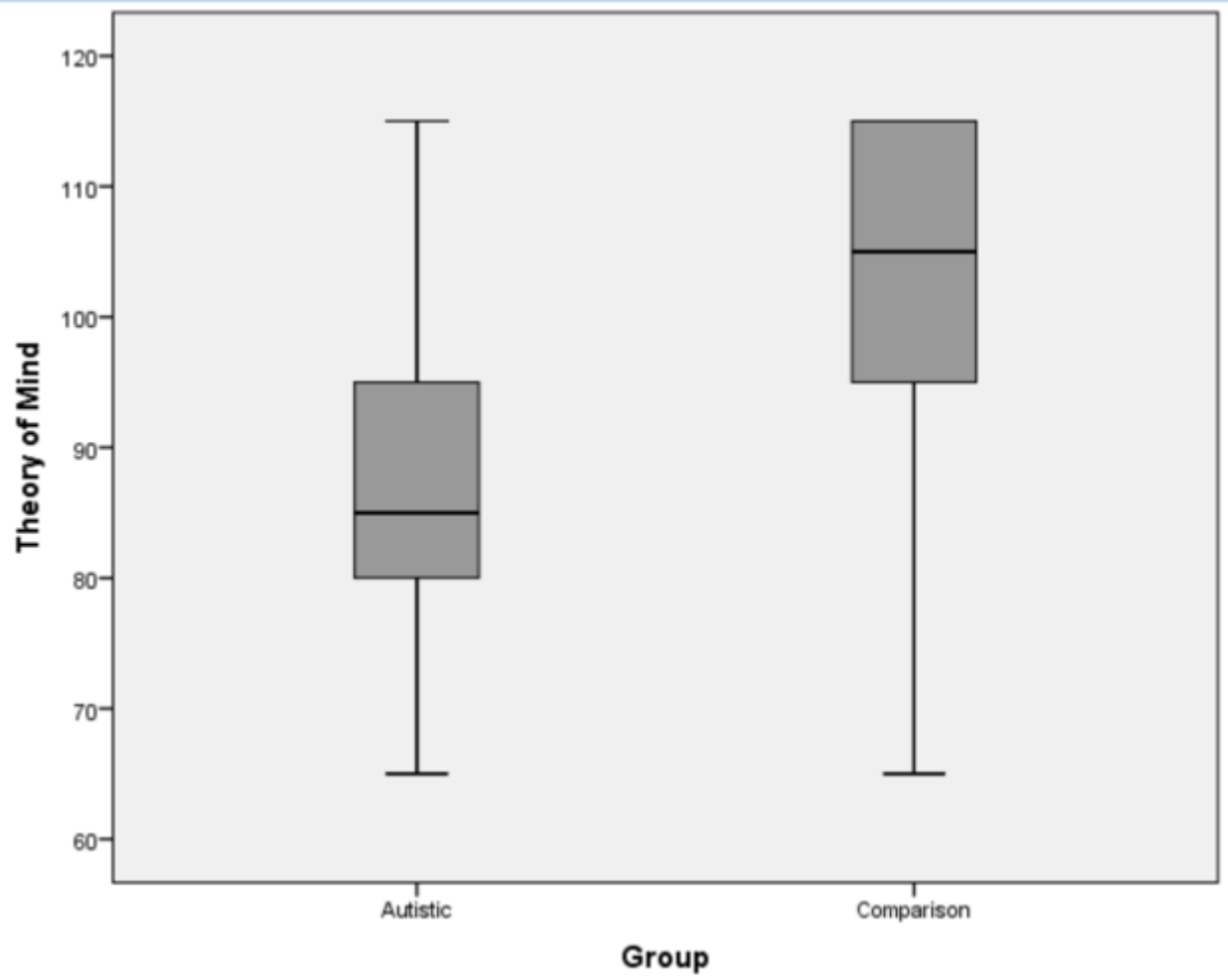

Figure 1. Boxplot to assess for outliers for the independent samples t-test analysis, theory of mind variable.

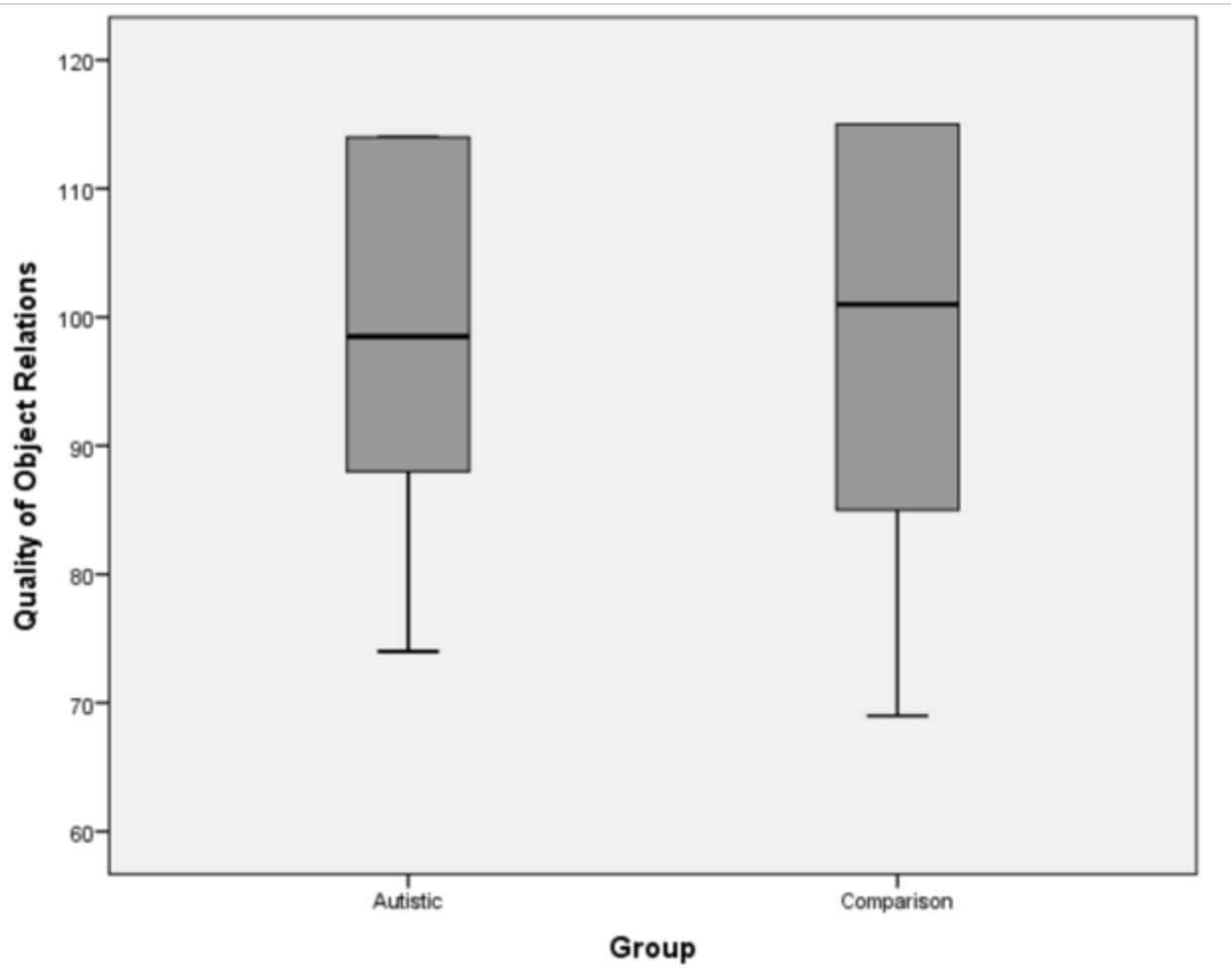

Figure 2. Boxplot to assess for outliers for the independent samples t-test analysis, object relations variable.

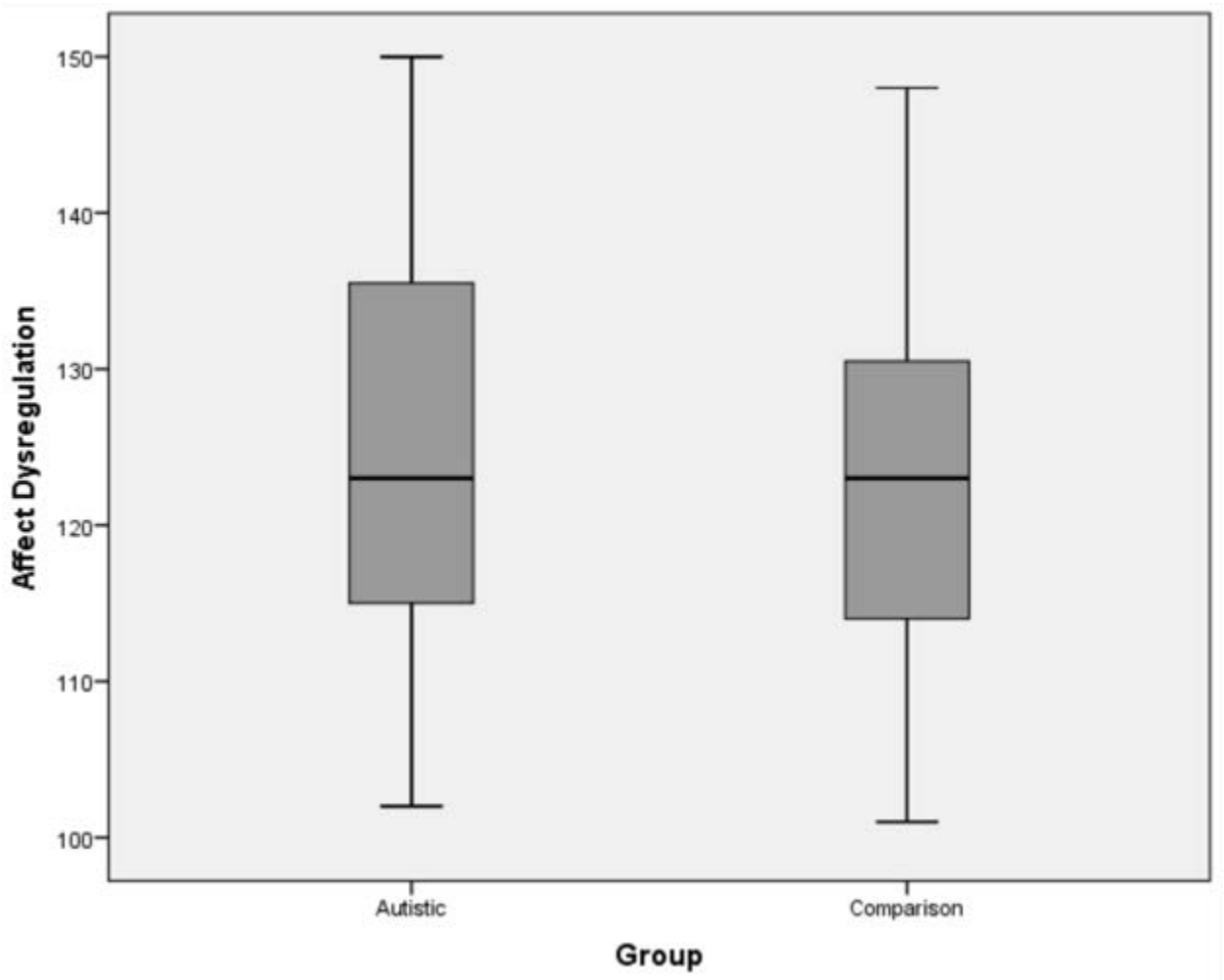

Figure 3. Boxplot to assess for outliers for the independent samples t-test analysis, affect dysregulation variable.

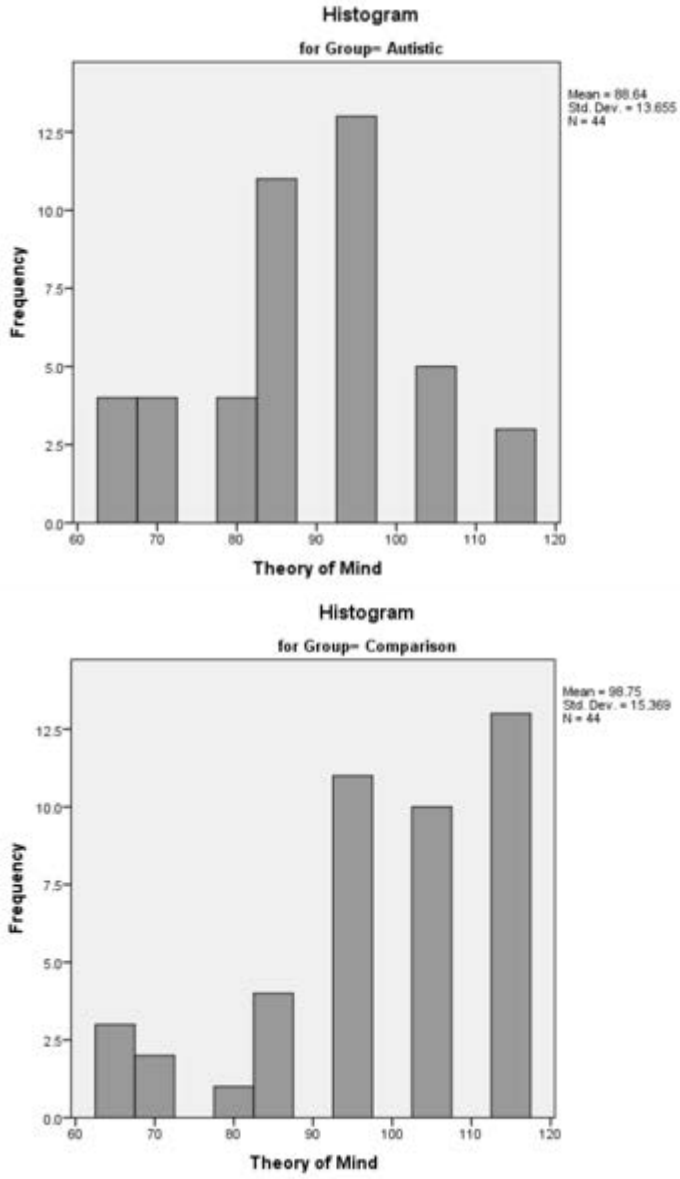

Figure 4. Histogram to assess whether scores are normally distributed for the independent samples t-test analysis, theory of mind variable.

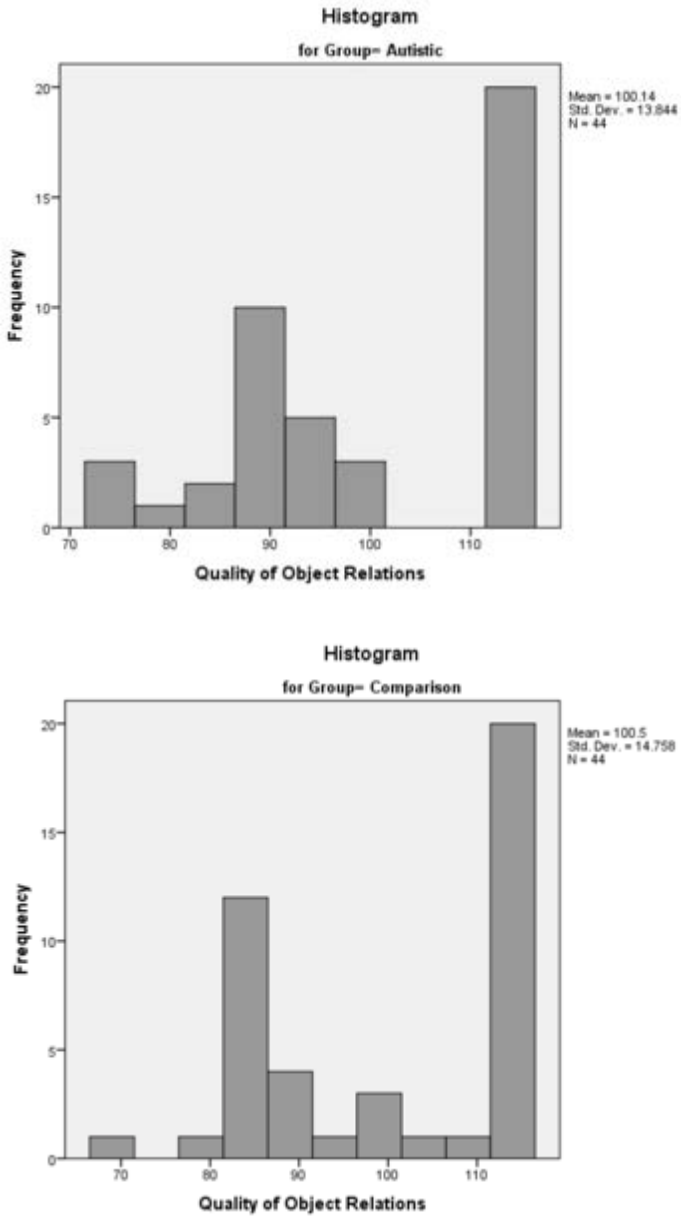

Figure 5. Histogram to assess whether scores are normally distributed for the independent samples t-test analysis, object relations variable.

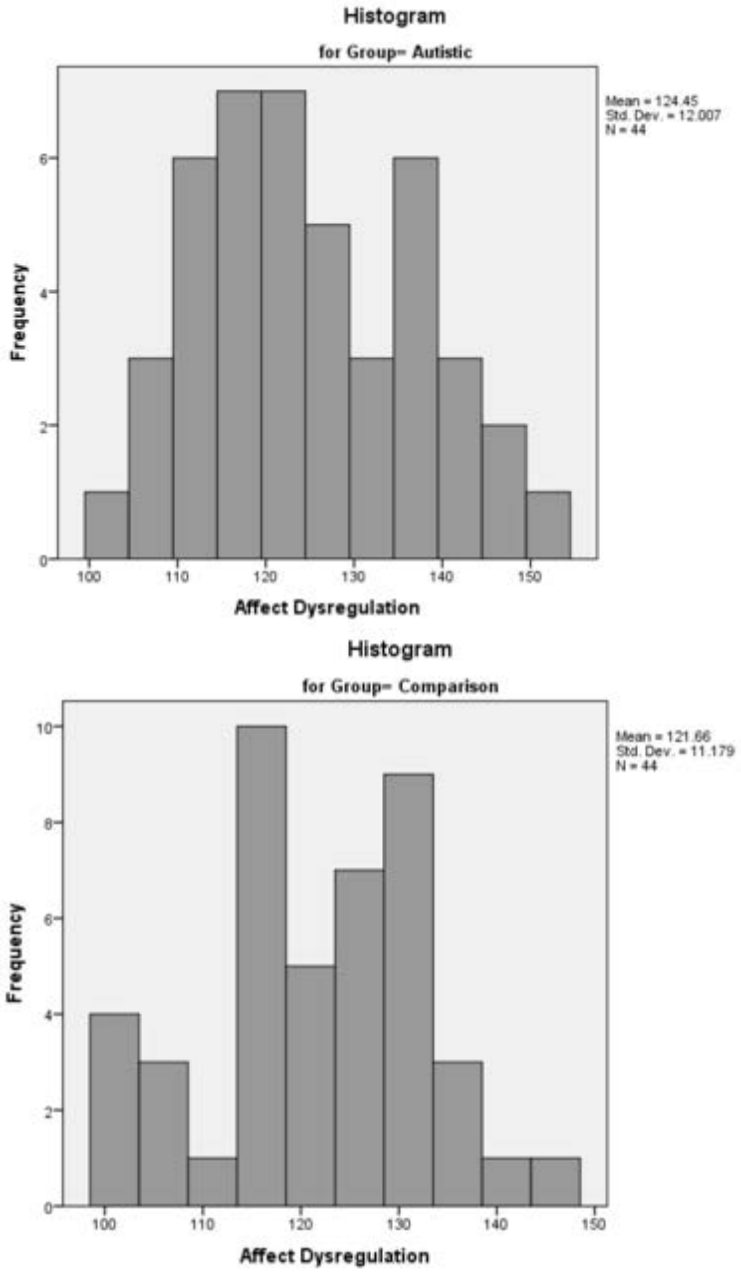

Figure 6. Histogram to assess whether scores are normally distributed for the independent samples t-test analysis, affect dysregulation variable.

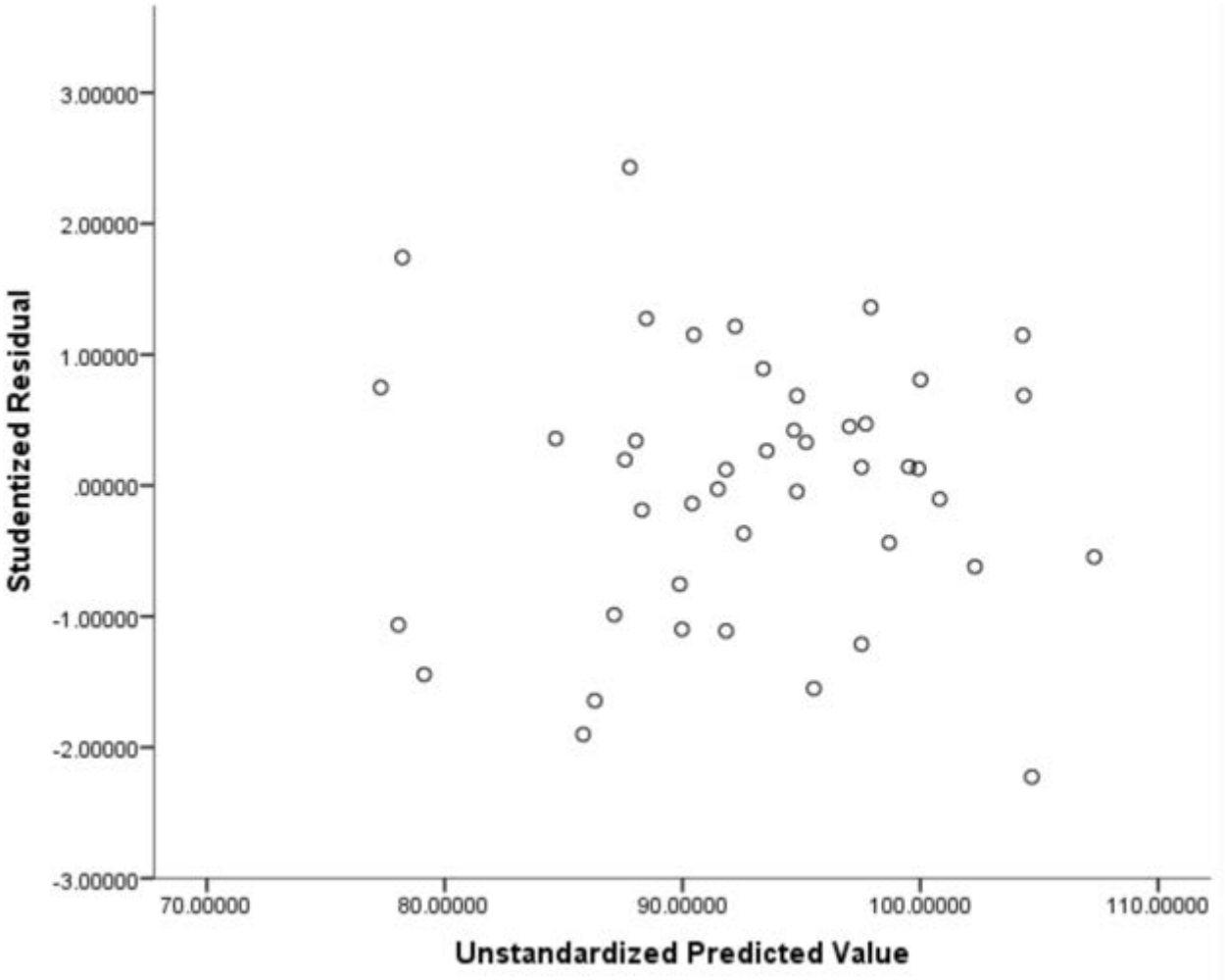

Figure 7. Multiple regression scatterplot to assess linearity.

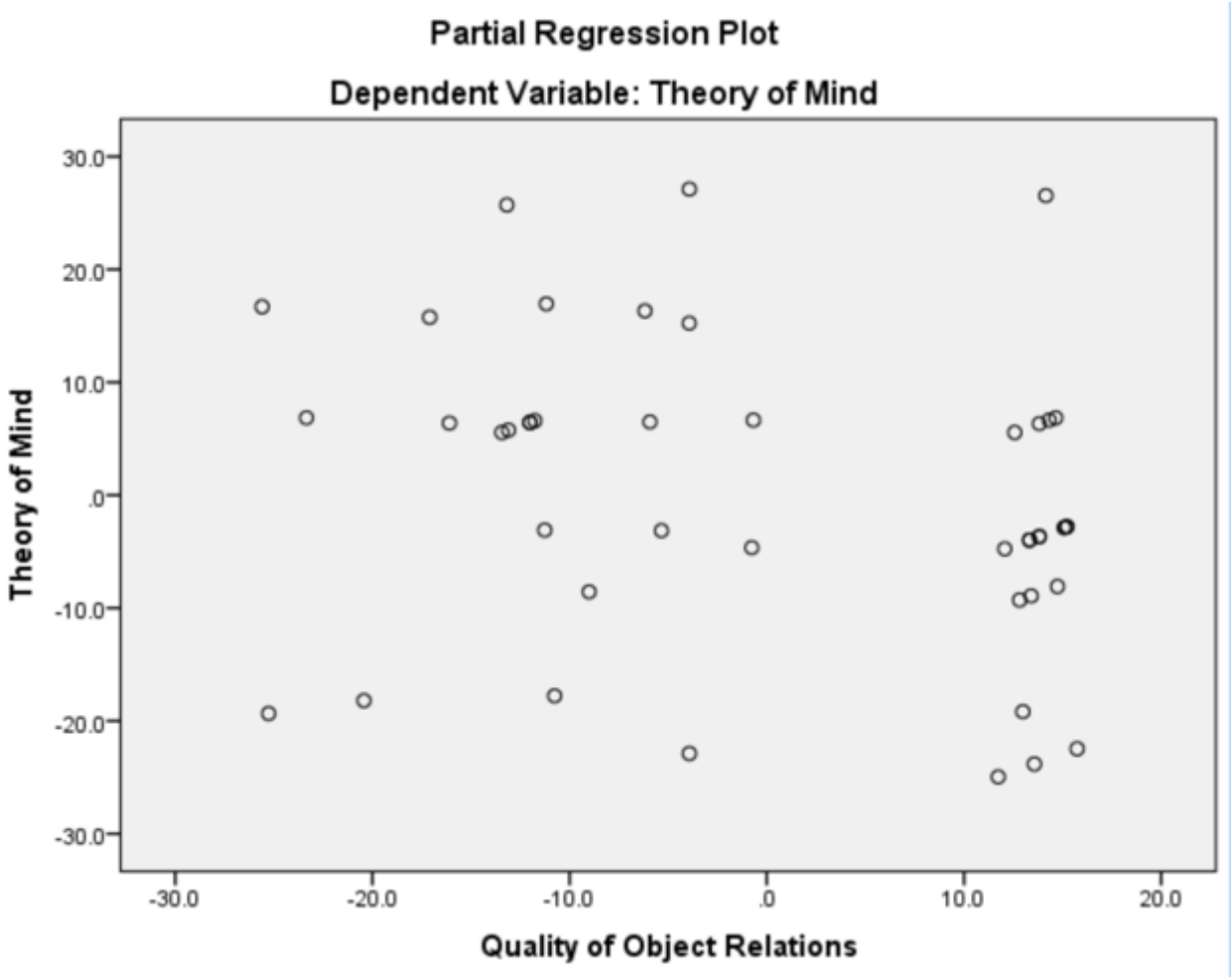

Figure 8. Partial regression plot to assess linearity for the multiple regression analysis, object relations variable.

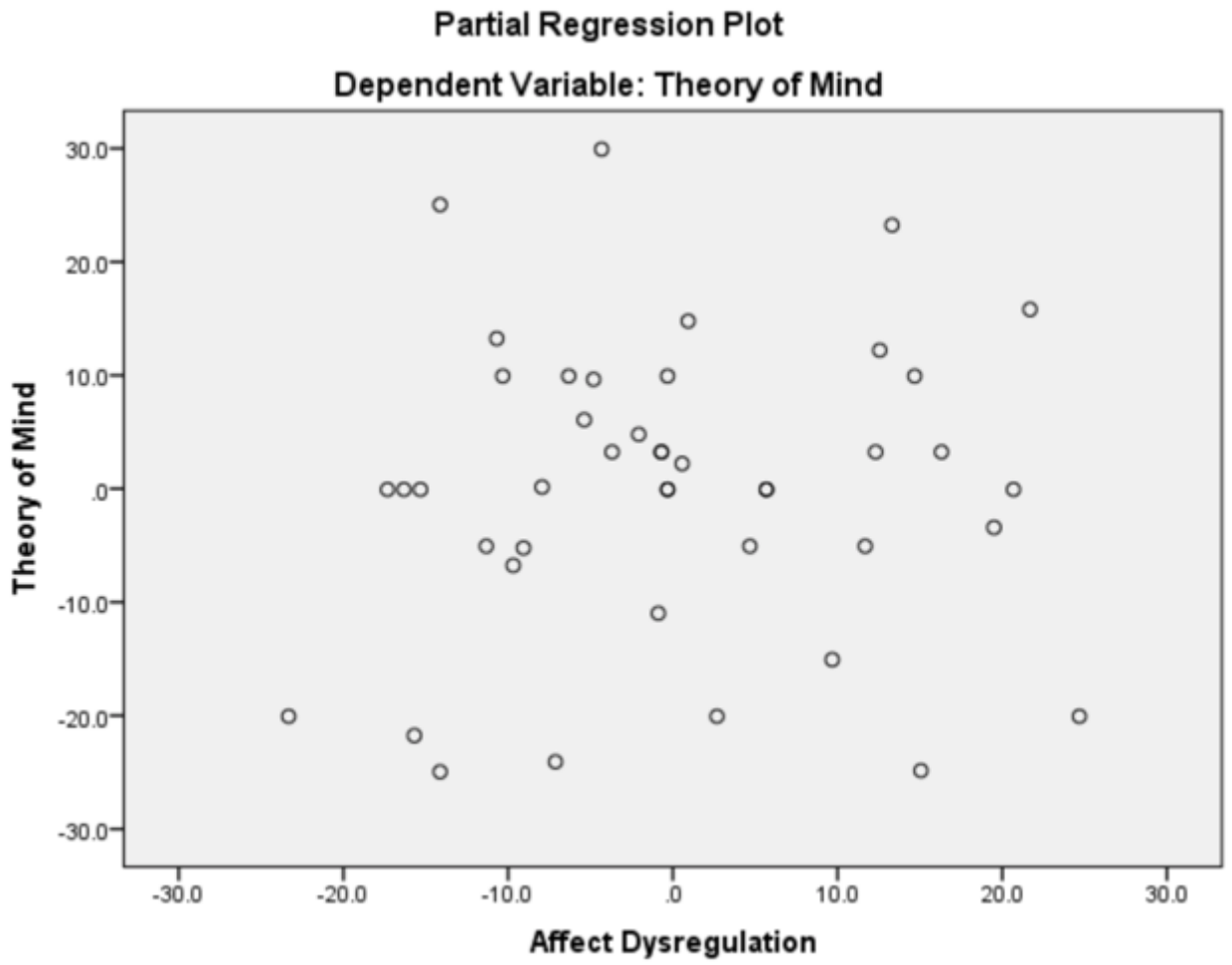

Figure 9. Partial regression plot to assess linearity for the multiple regression analysis, affect dysregulation variable.

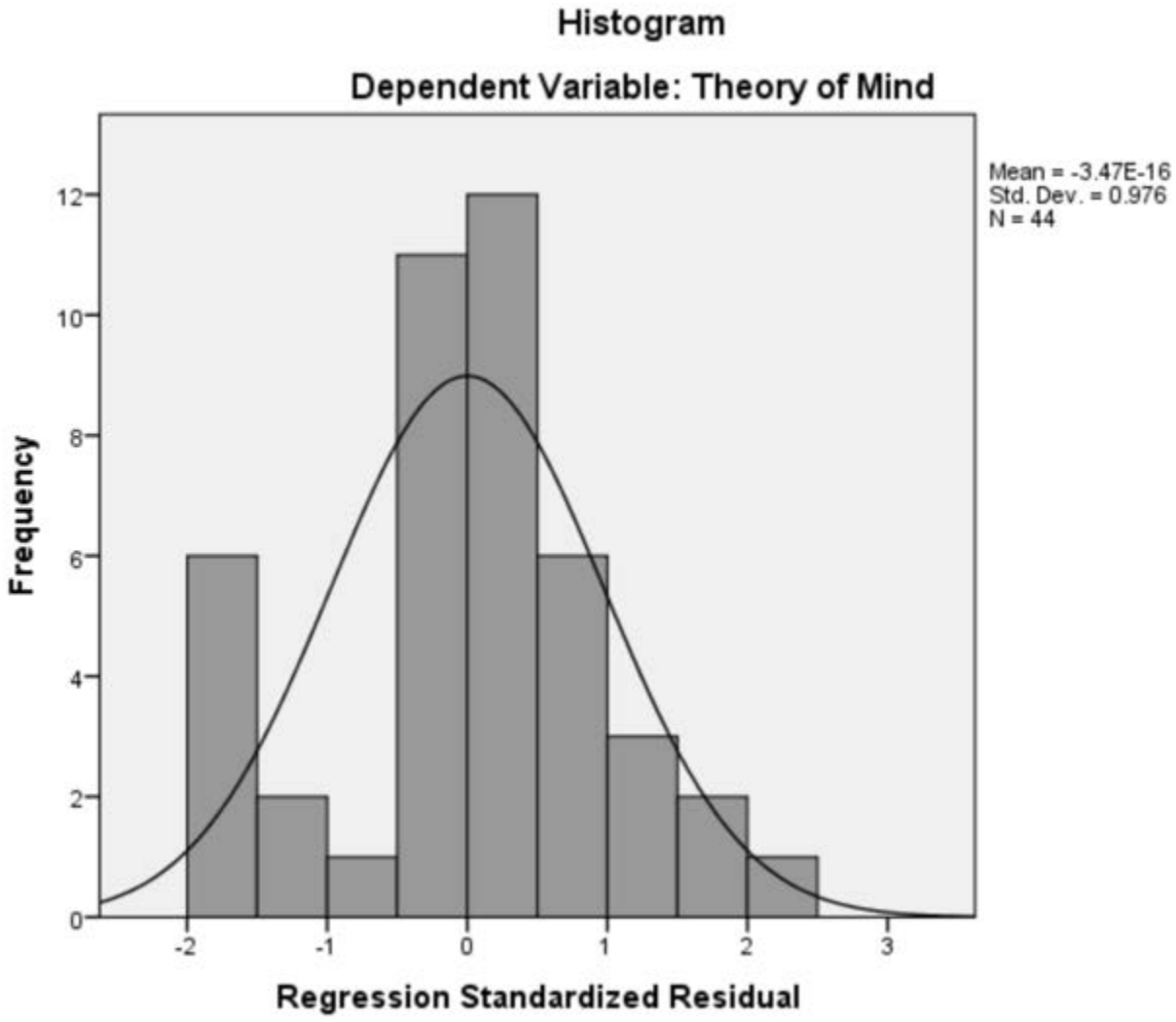

Figure 10. Histogram to assess whether residuals are normally distributed for the multiple regression analysis, theory of mind variable.

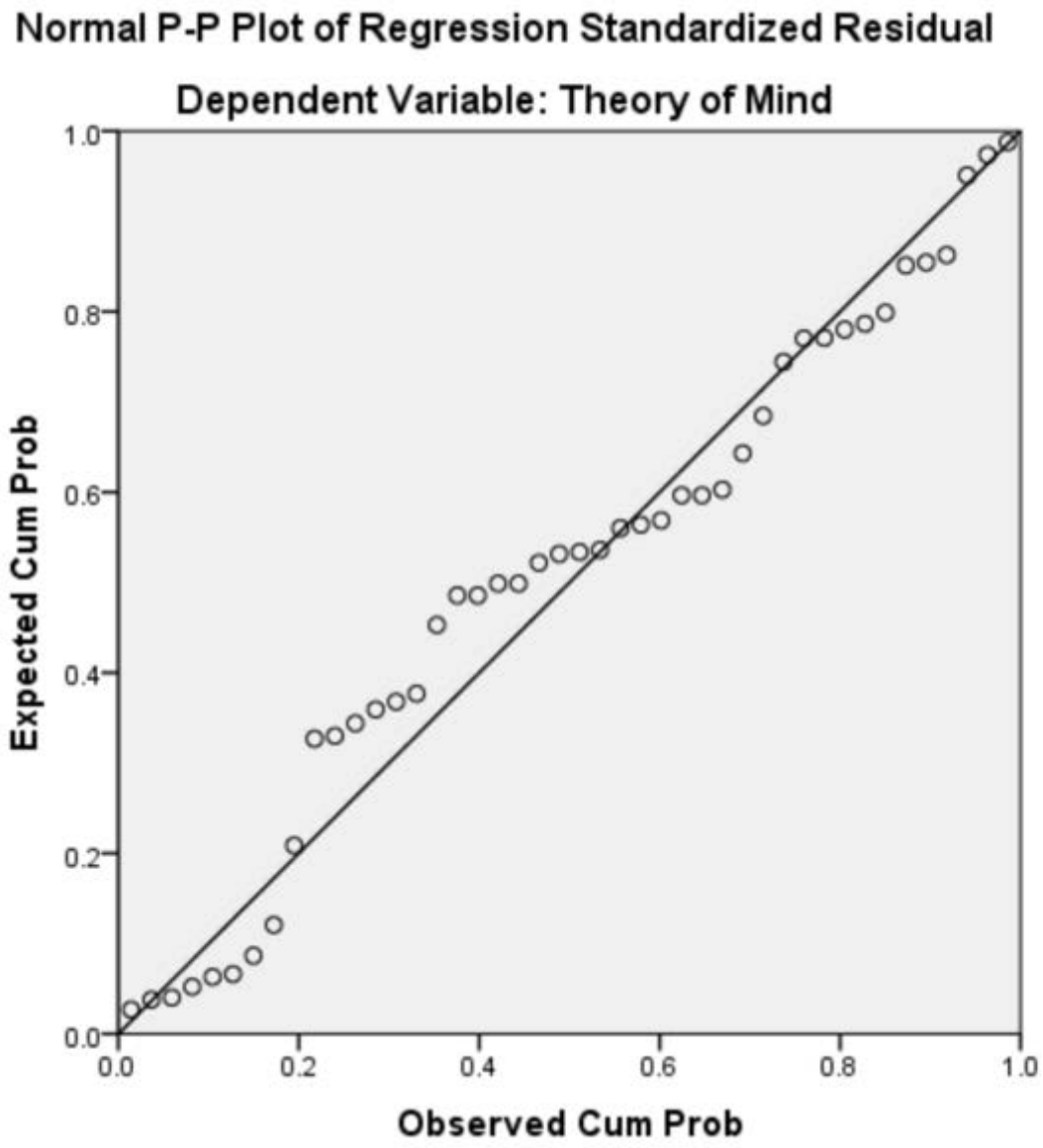

Figure 11. Normal p-plot to assess if the residuals are normally distributed for the multiple regression analysis, theory of mind variable.

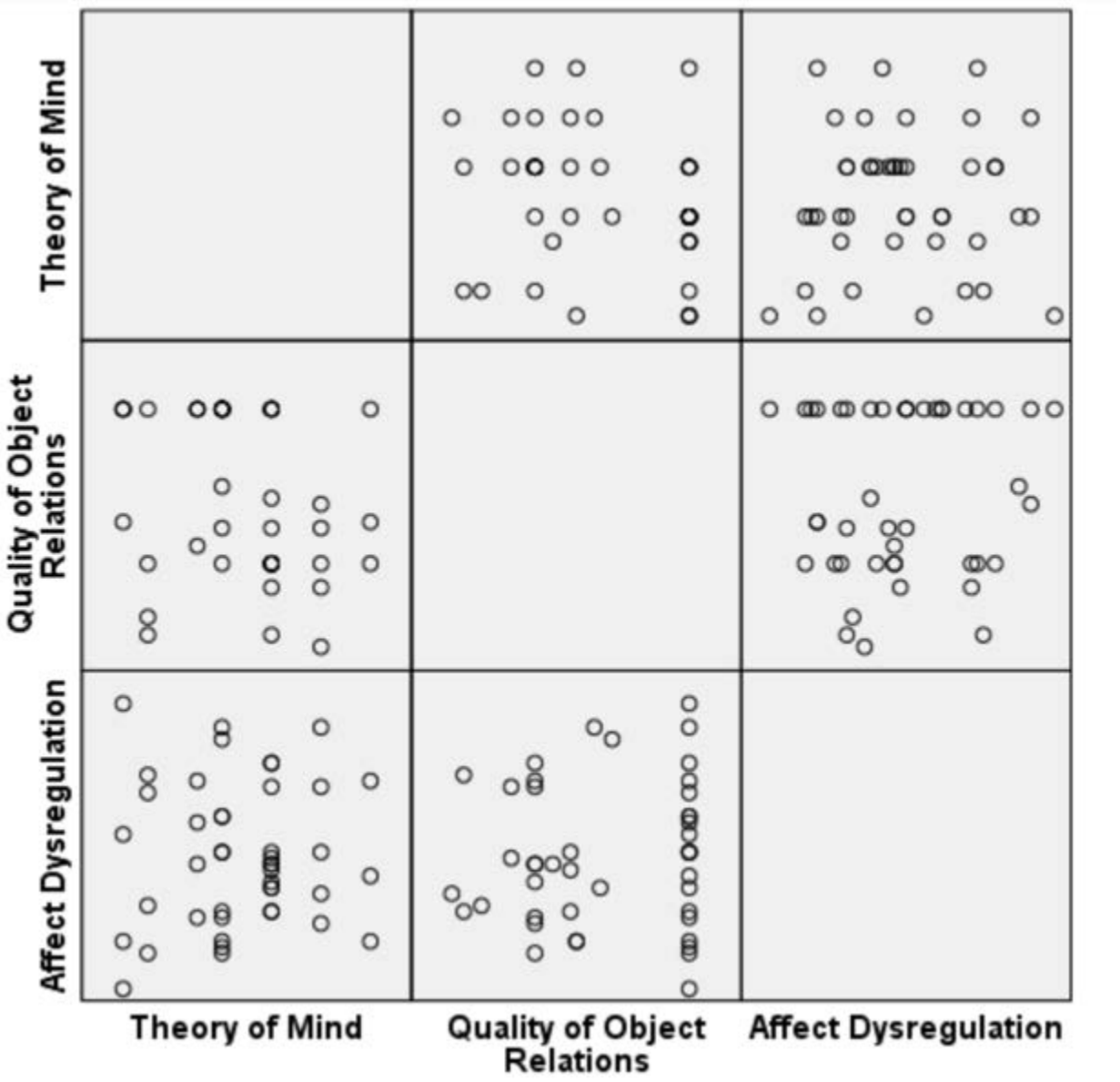

Figure 12. Scatterplots to assess linearity for the Pearson partial correlation analysis.

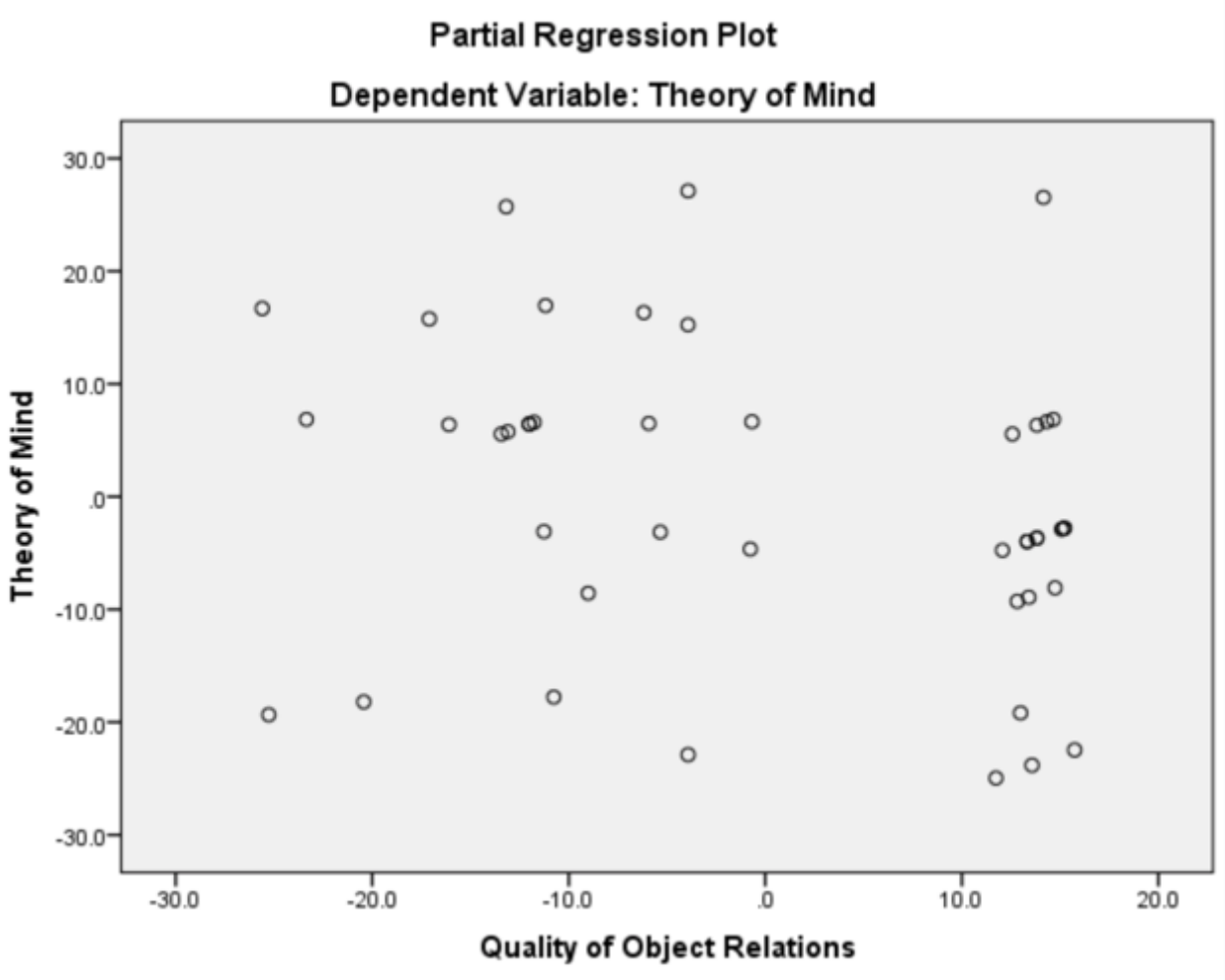

Figure 13. Partial regression plot to assess linearity between the theory of mind and object relations variables in the clinical group for the Pearson partial correlation analysis.

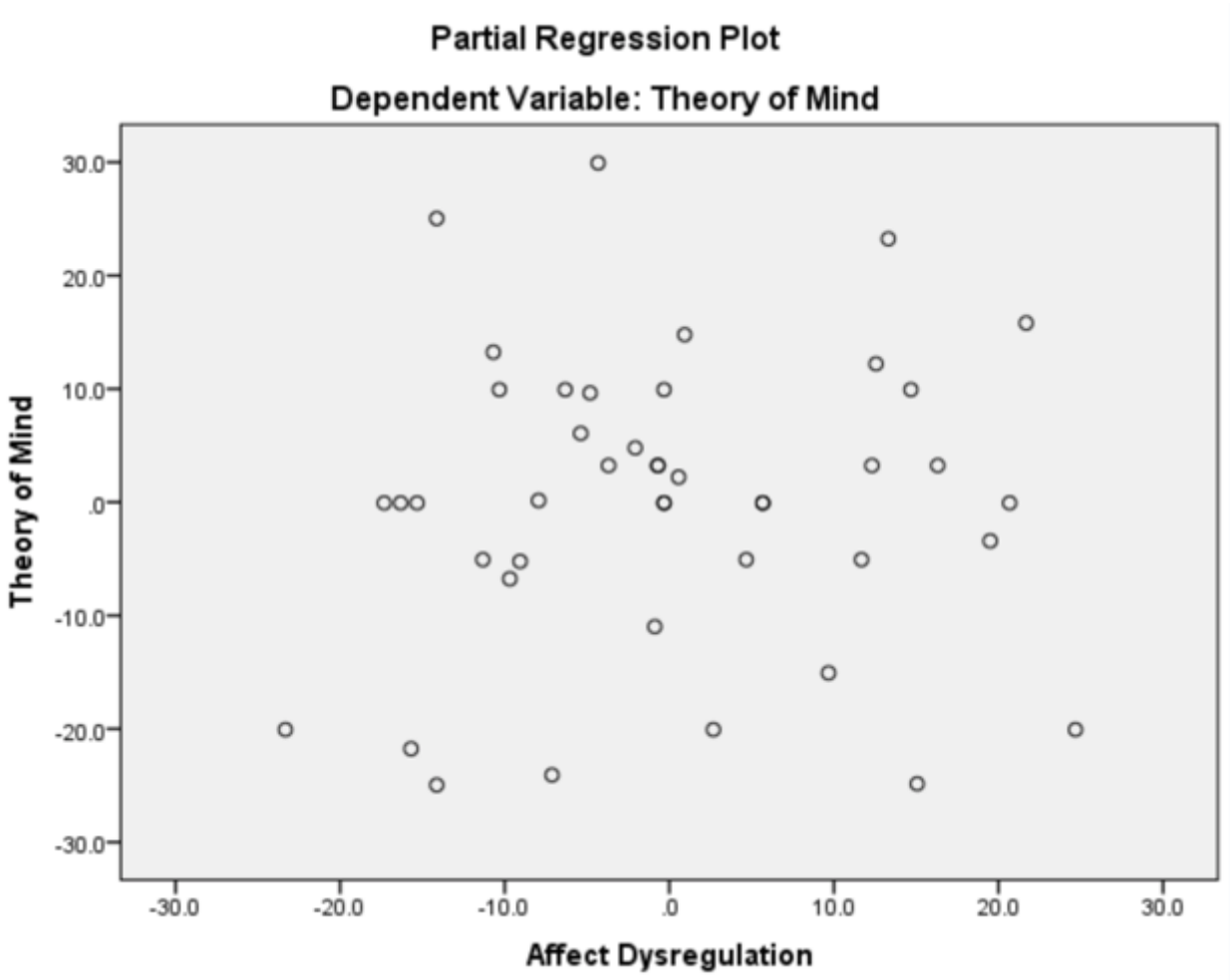

Figure 14. Partial regression plot to assess linearity between the theory of mind and affect dysregulation variables in the clinical group for the Pearson partial correlation analysis.

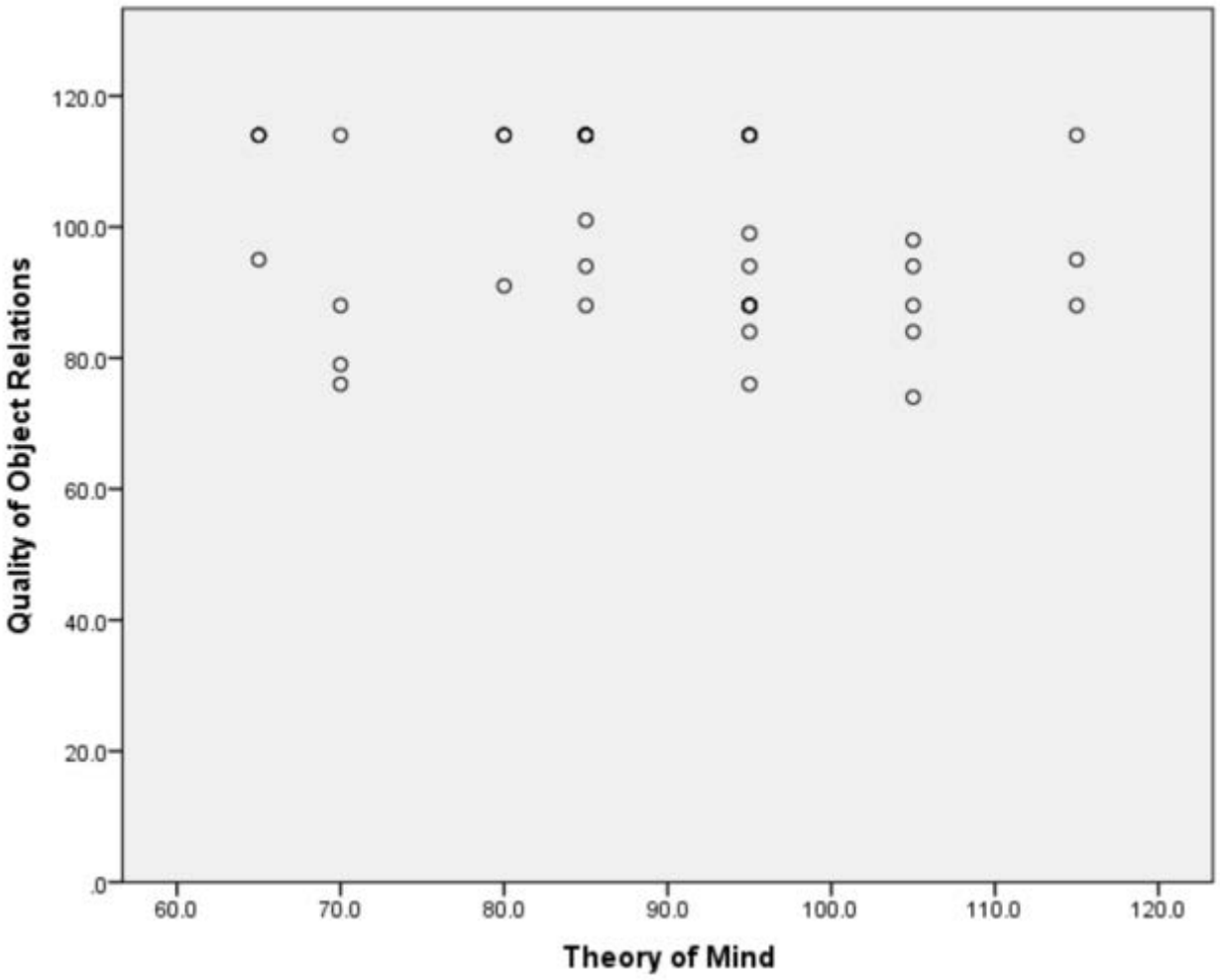

Figure 15. Partial regression plot to assess linearity between the theory of mind and object relations variables in the clinical group for the Pearson correlation analysis.

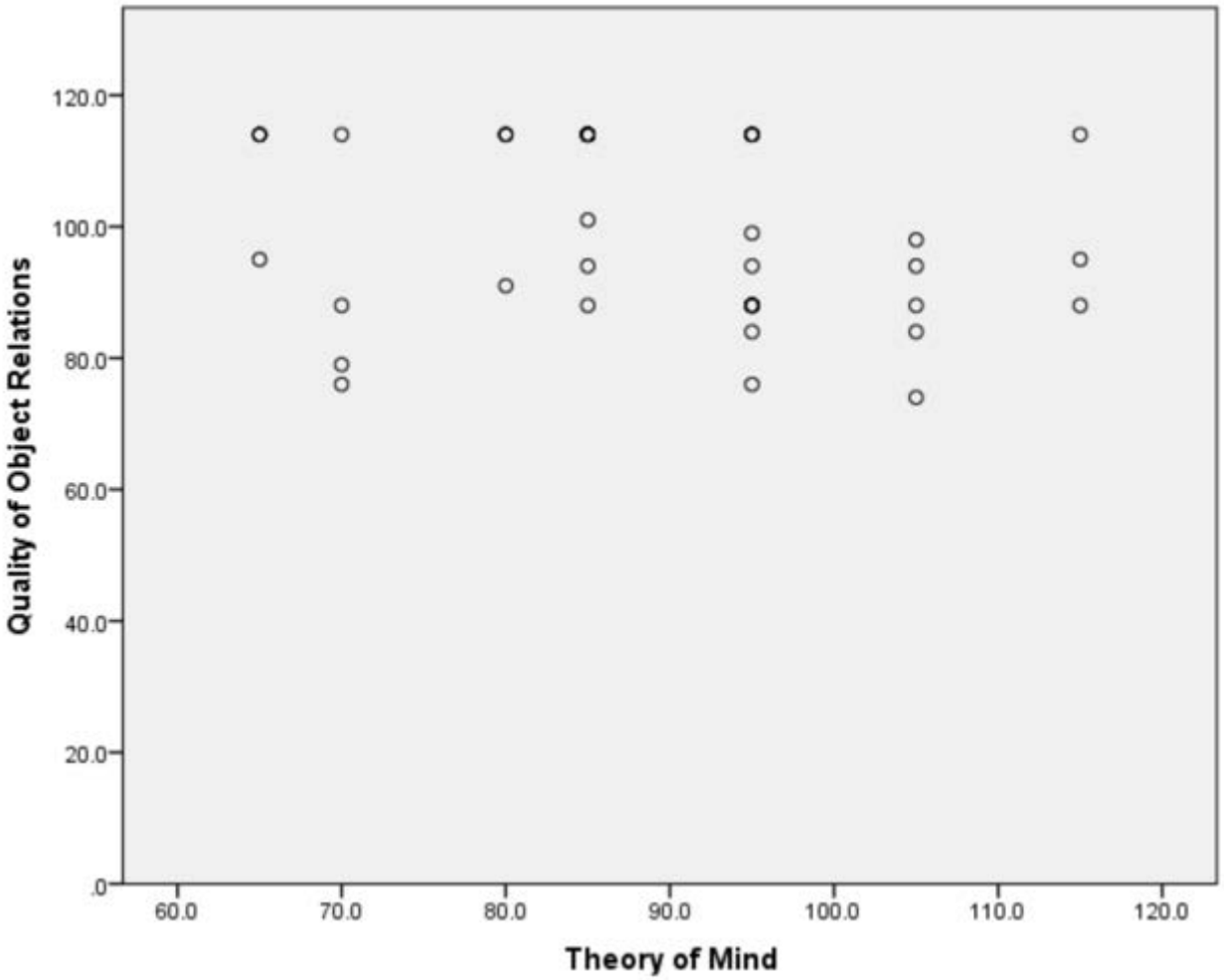

Figure 16. Partial regression plot to assess linearity between the theory of mind and object relations variables in the clinical group for the second Pearson correlation analysis.