

NEURODIVERSITY AND THE USE OF ART TO FACILITATE COMMUNICATING
EMOTIONS; A PRELIMINARY STUDY

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ABSTRACT

This research study explored whether art can be used to facilitate communicating emotions among individuals with ASD. A total of ten participants were included in this study. Five participants were diagnosed with ASD and the remaining five did not have ASD. The method that was used to collect the data included; an art questionnaire, Galvanic Skin Response and face task, art activity, two interview sessions and a face task. The results of the study found that through the process of creating art, individuals with ASD were more likely to communicate their emotions freely. Participants with and without ASD were able to express emotions better when engaging in active participation and concrete art. Individuals with ASD that used art became more conscious of their feelings, experienced themselves in the art making process, focused on making meaning, constructed a personal sense of self and enhanced their mood as they shared their emotions.

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CHAPTER ONE: INTRODUCTION

My interest in engaging within this field of research stems from my deep passion for understanding how individuals express themselves and communicate emotions. Personally, I find it difficult to fully express myself to others without being transparent and open about the way I am feeling. As an educator, I remember one situation that I experienced within the classroom that played a significant role in pursuing research involving individuals with ASD. This motivated me to find an alternative way that could potentially facilitate this process through using art (specifically drawing). My decision to choose art in the study was the result of my experience observing a student in my class with ASD and noticing his desire to draw every time he got the chance. I was fascinated by his attention to detail when he drew and the stories he would share with me as he looked at his drawings. I noticed the student would share his thoughts with excitement when explaining the drawings and the stories they told. After researching, I noticed little research was done on how individuals with ASD communicate emotions and connect themselves with others. I also noticed the majority of research was done on the way music impacts individuals with ASD but art was not as intensely explored. This sparked my interest in exploring this phenomenon more closely.

This interdisciplinary study takes a cognitive psychology perspective and considers art and education to further investigate how individuals with ASD communicate and learn best. Not one discipline or way of thinking is dominant since three disciplines considered in the study include psychology, education and art. Understanding this field of interdisciplinary work can be summed up in Donna Haraway's article when she states, "subjectivity is multidimensional; so, therefore, is vision. The knowing self is partial in all its guises, never finished, whole, simply there and original; it is always constructed and stitched together imperfectly, and therefore able

to join with another, to see together without claiming to be another” (Haraway, 1988, p. 586). Since this thesis is situated in cognitive psychology and brings in education and art to further investigate the study, the quantitative data will be analyzed using psychological methods and the qualitative data will be evaluated using an education and art point of view. This study will seek to develop artistic strategies that enable people with ASD to freely engage within them at their own preference, therefore, empowering them to express themselves in a purposeful way.

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that is characterized by persistent deficits in social interaction, communication and an inclination to engage in repetitive patterns of behaviour (Tuchman, 2003). However, one of the most prevailing characteristics that individuals with ASD manifest is the inability to express deep emotions (Moseley et al, 2015). As a result, individuals with ASD find it difficult to connect with others and talk about their deep emotions (Moseley et al, 2015). This could potentially create barriers for individuals with ASD to create meaningful relationships as they are unable to fully express themselves without communicating their emotions to others (Moseley et al, 2015). However, recent studies have found that creating art can be used to facilitate communicating emotions among individuals with ASD. Interestingly, studies found that individuals with ASD have the same creative artistic ability as individuals without ASD which suggests that using art can be a promising alternative form of communication (Chatterjee, 2015). Furthermore, although differences in the brain exist among individuals with ASD (physiological, sensory or cognitive functioning), these differences often do not impede on an individual’s ability to produce art (Chatterjee, 2015). Therefore, the creative skills (artistic skills) remain intact for individuals with ASD (Chatterjee, 2015).

In this research paper, art is defined as making lines, shapes, texture, colour and space to organize expressions of ideas, feelings and experiences through making images (Kozbelt, A., & Seeley, W. P, 2007). Using visual arts to communicate helps individuals with ASD connect their feelings, thoughts and perceptions with their life experiences (Richardson, 2016). Through the process of creating art, individuals with ASD can relieve overwhelming emotions while making sense of the experiences they have lived (Richardson, 2016). In addition, individuals with ASD are capable of using their artistic abilities to make personally meaningful visual narratives that capture their ideas and feelings through their creative use of line, shape, and composition (Koo, 2008). Therefore, since it is evident that a relationship exists between expressing one's emotions through art, this research examined whether art could be used to facilitate communicating emotions among individuals with ASD. It is important to note that the term ASD will be used throughout this paper when referring to the participants with high functioning autism.

1.1 The Research Problem

The research problem that is involved in this study is the inability for individuals with ASD to express and communicate deep emotions with others. Although individuals with ASD internally feel particular emotions, they are unable to fully articulate or communicate these feelings with others around them. Recent studies have found that creating art can be used to facilitate communicating emotions among individuals with ASD (Richardson, 2016).

1.2 The Research Questions

Three main research questions were examined in this study:

1. Can art can be used to facilitate communicating emotions among individuals with ASD? Specifically, a critical analysis was conducted to evaluate if there was an association between art and expressing emotions among individuals with ASD.
2. Does active participation with art (physically drawing) increase or decrease the ability for individuals with ASD to express their emotions in comparison with passive participation with art (looking at art)?
3. How can art be used as an alternative form of communication to express emotions?

1.3 Purpose and Rationale

The purpose of conducting this research study was to find out whether individuals with ASD are able to use art as an alternative mechanism to communicate their emotions with others around them. Since one of the key characteristics that individuals with ASD manifest is the inability to express deep emotions, art can be used to let out the emotions someone is feeling on paper. Art that is expressed on paper can be used to motivate individuals with ASD to communicate the emotions that are represented through pictures. The goal of this research study was to give individuals with ASD the opportunity to express their emotions in a creative way. The rationale behind conducting this research study was to bring awareness about individuals with ASD and the way they express and communicate their emotions with others. Research has shown that art can be used as a coping mechanism for individuals with ASD to let out their emotions on paper (Richardson, 2016). However, the gap that this research study examined was how individuals with ASD can communicate these emotions and connect themselves with others while creating art. This research study was not only interested in how art can give individuals

with ASD a sense of relief through drawing but most importantly how they can emotionally connect with others and discuss the emotions they felt after creating art.

CHAPTER TWO: THEORETICAL FRAMEWORK

The theoretical framework that was used to analyze the research topic is through an interdisciplinary lens while drawing inspiration from various theories in psychology, art and education to fully understand the research problem.

2.1 Psychological Theories on Emotion

In psychology, emotion has been grouped and explained by various theorists as being either physiological, neurological or cognitive. The theories discussed in this paragraph will be psychological theories that try to explain how emotions develop. It is important to note that from gathering this information, it is clear that emotions are personal experiences that are complex by nature and cannot be explained by one theory alone. However, it is important to understand the formation of the term “emotion” within a psychological framework to fully grasp the different points of views needed to explain this thesis. This thesis takes a psychological point of view when examining emotions but it also incorporates diverse understandings of emotions by examining personal interpretations and artistic expressions of emotions since the framework is interdisciplinary. It is crucial to note that all of the theories discussed below are controversial by nature and not one theory can explain how emotions are made up or formed (Fellous, 2006). I am fully aware of the controversy that arises between disciplines when trying to explain an abstract concept such as emotion and I recognize the importance of having diverse understandings of this topic as no one theory can dominant another. This research study took a physiological approach when assessing individuals emotions, but since this study is interdisciplinary, it also incorporated

art and personal narratives to expand on the emotions the participants were feeling to clear any misconceptions. Therefore, although the participant's physiological response to certain emotions was measured, the integration of art and personal narratives shaped the overall results of this study.

The first theory derived to explain how emotions work was developed by psychologist William James and Carl Lange called "The James-Lange Theory of Emotions" (James, 1922). This theory suggests that people's emotions occur as a result of physiological reactions to various events (James, 1922). The theory explains that when people view external stimulus, this leads them to a physiological reaction (James, 1922). In contrast, another known theory proposed by Walter Cannon and Philip Bard called "Cannon-Bard Theory of Emotion" disagrees with the James-Lange Theory and suggests that people feel physiological reactions linked to emotions without feeling those emotions (Plutchik, 1962). The theory suggests that people feel emotions and experience physiological reactions, therefore, he suggests that the physical and psychological experience of emotions occur at the same time and one does not cause the other (Plutchik, 1962). Another theory developed by Schachter-Singer and Jerome E. Singer was called "The Schachter-Singer Theory of Emotions" which is a cognitive approach to explaining emotion and suggests that physiological arousal happens first and then people must identify the reason behind arousal in order to experience and identify it as an emotion (Dror, 2017). Lastly, Richard Lazarus came up with the "Cognitive Appraisal Theory of Emotion" which suggests that thinking happens before experiencing an emotion (Winter, 2001). He suggested that the order of events involves a stimulus then followed by thought which leads to the simultaneous experience of a physiological response and emotion (Winter, 2001). Moreover, more recent work investigating emotion discusses the "Facial Feedback Hypothesis" which explains that

suppression of facial expression of emotion decreases the intensity of emotions experienced by people (Davis, Senghas, & Ochsner, 2009).

2.2 Art and Expressing Emotion

In the past, it was widely assumed that the distinctive role of an artist was to express emotions through creating art (Hospers, 1955). One example is Robin George Collingwood who argues that art is the imaginative expression of emotion (Collingwood, 1938). However, this theory is controversial since critics have argued that there are several artwork and art forms that have no direct involvement with emotion (Hospers, 1955). Similarly, critics suggest that it is faulty to assume that good art needs to depend on successful communication so the recipient is affected by the same emotions as the creator (Hospers, 1955). More recent work regarding art and expressing emotion reveal that art in all its different forms remain expressions of personal vision and belief as well as ways of conveying both emotion and thought (Nadeau, 2008). The use of arts in this context is not used for therapy or treatment but as a way of expressing people's humanity which is the framework this study took to examine the research questions. This study used art to freely allow individuals with ASD find a creative voice and to use it to express themselves (Nadeau, 2008).

2.3 Constructivism and Education

The framework for this research extends the constructivism theory of learning in education (Barrett & Long, 2012). This section highlights the way constructivism is used to involve students within their own learning. Specifically, this approach was used when participants were creating their drawings in this study. Constructivism is known to be a controversial topic that involves several misconceptions that exist between different viewpoints (Barrett & Long, 2012). Constructivism is a theory of learning that allows the learner to play an

active role in making sense of the knowledge that is constructed and to connect this knowledge with what was previously understood (Barrett & Long, 2012). This way of learning places more responsibility on the student as it allows them to be actively involved in their own learning process. In this situation, the educator would focus on facilitating the learning experience which allows students to think critically about the subject matter (Barrett & Long, 2012). Within this research study, the theory of learning shaped the way participants approached and made sense of their drawings. Participants learned about their emotions through making connections about themselves on their own. When analyzing their drawings, they first discussed their own understanding that they had about their personal experiences, however, after diving in deeper and answering the interview questions they went through a self-exploration journey. My job as the researcher was simply to administer the drawing task instructions, ask questions and listen attentively which is similar to that of an educator's role taking a constructivism approach. Therefore, the constructivism theory of learning was used to incorporate the participants within their own learning to understand their experiences in a unique and empowering way.

CHAPTER THREE: LITERATURE REVIEW

This section will discuss what ASD is, the changes and challenges in diagnostic pathways, ASD in relation to race, gender and class, the impact ASD has on emotional knowledge and arts therapy, the use of art on individuals with ASD and contemporary art practice and emotions. Furthermore, after conducting extensive research on the way art can facilitate the communication of emotions among individuals with ASD, three main reoccurring themes were found. First, the majority of research found that while ASD often negatively alters an individual's physiological, sensory or cognitive functioning, these alterations often do not impede on an individual's ability to produce art (Chatterjee, 2015). Therefore, individuals with

ASD can use these artistic abilities to express themselves by communicating with others. Moreover, studies have found that using artistic techniques can enhance the ability for individuals with ASD to communicate their mood, emotions and personal narratives (Kellman, 1999). Similarly, another theme discusses that participation with art increases the expression of emotions among individuals with ASD in comparison with passive communication with art (Batson, 2010).

3.1 Autism Spectrum Disorder (ASD)

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that is characterized by persistent deficits in social interaction, communication and an inclination to engage in repetitive patterns of behaviour (Tuchman, 2003). The etiology of ASD is not fully understood but research has shown that ASD is potentially caused by neurodevelopmental and genetic components (although it was previously believed to be caused by environmental influences) (Matson & Kozlowski, 2010). The symptoms of ASD are typically present at birth and are diagnosable by 18 months of age and include several behaviorally defined conditions that are diagnosed using clinical observation (Matson & Kozlowski, 2010). The spectrum includes a range of conditions which consist of autism, Asperger Syndrome ¹and pervasive developmental disorder—not otherwise specified (PDD-NOS) (Leonard et al., 2010). Typically, people with autism spectrum disorder have more severe symptoms in comparison with individuals diagnosed with Asperger syndrome or pervasive developmental disorder —not otherwise specified (PDD-NOS) which is indicative of a mild form of ASD (these individuals usually possess fewer symptoms) (McCarthy, 2007). Some characteristics that individuals with autism spectrum

¹ The term “Asperger’s” is no longer used within the DSM-5 but has been combined into a single diagnosis under the heading “Autism Spectrum Disorder”

disorder portray include; difficulty with social interactions, repetitive behaviour, impairments in speech or communication skills, less likely to make eye contact, fixate on specific parts of objects and have a lack of interest in developing relationships (Tsai, 2014). In contrast, individuals with Asperger syndrome attempt to have interactions with others although they have difficulty understanding conventional social rules (Tsai, 2014). Having Asperger syndrome does not affect language as severely since individuals usually have a good handle on language skills (Tsai, 2014).

3.2 Challenges and Changes in Diagnostic Pathways

However, it is important to note that in the DSM-5 (The Diagnostic and Statistical Manual of Mental Disorders) the term Asperger's is no longer used since it has been combined into a single diagnosis under the heading "Autism Spectrum Disorder" (Gamlin, 2017). The DSM-5 states "Individuals with a well-established DSM-IV diagnoses of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder" (Gamlin, 2017). Although the term "Asperger's" has recently been removed and reclassified in the DSM-5, this change has brought much controversy by researchers, clinicians and families of individuals with ASD (Burns & Matson, 2017). Some argue that removing the Asperger's label, valued by patients for its distinctiveness from autism bring with it the potential to inflict iatrogenic harm as it threatens the identity of those affected (Gamlin, 2017). Similarly, researchers have found that the DSM-5 diagnostic criteria for ASD could impact which individuals receive diagnoses, therefore affecting their access to services (Gamlin, 2017). In contrast, others argue the major changes to the definition of autism are well grounded in research and the new criteria are more accurate than previous criteria (Hazen, McDougle & Volkmar, 2013). The problem arises when assessing how

many of the DSM-5 criteria individuals must meet to receive a diagnosis. Some clinicians believe the manual excludes autistic individuals with fewer or milder symptoms and it assigns autism to people who don't have it (Hazen, McDougle & Volkmar, 2013). Therefore, there appears to be multiple changes and challenges in diagnostic pathways when addressing ASD and more research is needed to fully address these issues.

3.3 ASD Race, Gender and Class

Race, gender and class are components that all play a significant role in the lives of individuals with ASD. Although research has found that individuals with ASD often find it difficult to maintain and create lasting relationships, it is interesting to examine this issue in relation to race, gender and class (Mayes & Calhoun, 2011). Understanding that other components such as race, gender and class impact the lives of individuals with ASD, it is important to view these elements in more detail. In particular, one study examined the extent to which race (African American, Latino, Asian, or White) in relation with disability status (ASD or typically developing) and grade (ranging from K-2 or 3-5) affect friendships and social networks for individuals with and without ASD (Mayes & Calhoun, 2011). The study found that children with ASD from African American or Latino descent that were in upper elementary grades had lower friendship nominations in comparison to typically developing White children in lower elementary grades (Mayes & Calhoun, 2011). The presence of ASD affected social network centrality (Mayes & Calhoun, 2011). Therefore, the study found that children with ASD experienced poorer social outcomes that worsen as they age, and that this worsening is exacerbated for racially diverse children (Mayes & Calhoun, 2011). Another study investigated trends in state-level administrative identification of ASD under the Individuals with Disabilities Education Act and found that Black and Hispanic children were significantly less likely to be

identified with ASD in comparison with the White group (Travers, Krezmien, Mulcahy & Tincani, 2014). Furthermore, current literature proposes that Black and Latino children that have ASD are less likely to receive treatment in a timely manner (Burkett et al. 2015). Researchers demonstrated that African American children are at a disadvantage in comparison to White children (Burkett et al. 2015). African American family members indicated the delay in diagnosis and treatment was due to distrust of healthcare providers, lack of information about ASD and lack of resources available to them (Yingling, Hock & Bell, 2018). Similarly, another study investigated trends in state-level administrative identification of ASD under the Individuals with Disabilities Education Act and found that Black and Hispanic children were significantly less likely to be identified with ASD in comparison with the White group (Travers, Krezmien, Mulcahy & Tincani, 2014).

In relation to gender and ASD, a recent study investigated adulthood gender identity and gender role variations in individuals with ASD and found that men with ASD reported more variant gender identity than the men in the control group (men that did not have ASD), as did women with ASD compared with the control group (women that did not have ASD) (Lai et al., 2016). However, no sex difference was found in both the control or ASD groups (Lai et al., 2016). In addition, men consistently portrayed a stronger preference towards gender-stereotyped masculine hobbies and occupations in comparison to women (Lai et al., 2016). Women with ASD indicated a stronger preference for masculine hobbies and occupations in comparison with the control group of women (Lai et al., 2016).

3.4 The Impact ASD has on Emotional Knowledge

Studies have examined emotion processing impairments in emotional expression and perception on individuals with ASD. Individuals with ASD demonstrate significantly lower adaptive functioning and emotion perception skills in comparison to typically developing people (Hudepohl, Robins, King & Henrich, 2015). Possessing emotion perception deficits is in part the reason for lower socialization abilities among individuals with ASD (Hudepohl, Robins, King & Henrich, 2015). Similarly, results have found that difficulty distinguishing emotional from neutral facial expressions is characterized by emotion perception impairments exhibited by individuals with ASD (Eack, Mazefsky & Minshew, 2015). For example, a study found that adults with ASD misinterpreted happy faces as neutral and were more likely than the control group (individuals without ASD) to attribute negative valence to non-emotional faces (Eack, Mazefsky & Minshew, 2015). The study found that the over-attribution of emotions to neutral faces was connected to communication and emotional impairments in individuals with ASD (Eack, Mazefsky & Minshew, 2015). Similarly, another study found that individuals with ASD are less aware of their own emotions as they claimed not feeling an emotion, were less likely to generate emotionally charged situations from their own experience and referred to fewer emotional perspectives when engaging in multiple emotion scenarios (Rieffe, Terwogt & Kotronopoulou, 2007). In relation to emotional expression, another study supports the finding that individuals with ASD are less adequate at recognizing basic emotions expressions, specifically fear and sadness (Tell, 2010). Individuals with ASD have difficulty in recognition of facial expression and use the mouth region more than the eye region when looking at faces (Kadak, Demir, & Doğangün, 2013).

Although these studies suggest that individuals with ASD have difficulty using emotional expression and identifying emotion, they also found that this does not indicate that they are less emotional in comparison with other individuals (Rieffe, Terwogt & Stockmann, 2000). One particular study found that although individuals with ASD showed decreased emotion recognition performance, no emotion-specific impairments were involved (Evers, Steyaert, Noens & Wagemans, 2015). Another study found that when children and adults with ASD judged photographs of themselves, the percentage of correct identification of emotions was not significantly different in comparison to the judgments from individuals without ASD (Kikuchi & Koga, 2001). Therefore, it is clear that studies on emotional expression and perception have found inconsistent results and more research is needed to fully understand the underpinnings of emotional responses among individuals with ASD (Mazefsky et al, 2013).

3.5 Arts Therapy and the Use of Arts on ASD

Art therapy has been used to relieve several behavioural, social and emotional problems that can occur within an individual (Richard, More & Joy, 2015). Specifically, it provides a direct line to the unconscious. It can assist in processing emotions and experiences nonverbally and provides a safe way to access and discuss feelings (Johnson, 2007). Art therapists use different methods to attend to each client's needs. For example, different art therapies include cognitive behavioral art therapy, solution-focused brief therapy, psychoanalytic art therapy, analytical art therapy and so forth (Hogan, 2016). The client typically chooses the type of art therapy they believe will help them and consults the art therapist to ensure a good match exists between them (Hogan, 2016). However, understanding how art therapists measure progress is highly controversial since subjectivity in therapeutic measurements is an issue that has contributed to the lack of investigation

of art therapy processes (Hogan, 2016). Individuals with ASD are usually recommended to attend art therapy classes to help them with behavioural, emotional, social and interpersonal issues related to their condition (Hogan, 2016). It is found to be an expressive means used by several professionals working with individuals with ASD (Hogan, 2016). One study found that when individuals with ASD attended art therapy sessions, it contributed to them becoming more flexible and expressive, more relaxed and better able to talk about their problems in both a therapeutic setting and in their homes (with family members) (Schweizer, Spreen & Knorth, 2017). Attributing words to difficult experiences gives individuals a sense of relief as they come to understand their problems and themselves in art therapy (Schweizer, Spreen & Knorth). The same study found that art therapy could have an effect on reducing behavioural problems among children with ASD which include social and communicative behaviour. It also facilitates sensory experiences, sharing personal events, focusing attention and talking about personal problems in art and daily life (Freed & Bursztyn, 2012).

3.6 Contemporary Art Practice and Emotions

Individuals that engage in art have reported having high emotional responses when viewing art (Van Paasschen, Bacci & Melcher, 2015). A study investigated the relationship between art expertise and emotional preferences among different artwork (Van Paasschen, Bacci & Melcher, 2015). The study suggests that art experts rated the artworks higher than novices only on aesthetic elements (ex. beauty), however, no group differences were found on affective evaluations (ex. arousal) (Van Paasschen, Bacci & Melcher, 2015). This suggests that affective components of art appreciation are not the result of expertise and more consistent across observers, however, the cognitive elements of aesthetic viewing depends on art experts (Van Paasschen, Bacci & Melcher,

2015). Therefore, individuals do not need to be art experts to develop an emotional connection with artwork. Since this study looks at art and emotion, individuals with ASD do not need to be art experts to connect on an emotional level with the artwork they create or view.

3.7 Artistic Abilities Remain Intact for Individuals with ASD

The majority of studies support the findings that individuals with autism have the same artistic (creative) abilities as individuals without autism (Chatterjee, 2015). In particular, one study investigated the artistic ability of children with autism through examining the expressive content found in their artwork (Koo, 2008). The study focused on the relationship between children's perceptual and cognitive processes during their creation of artistic work (Koo, 2008). The method the researchers used to gather information from three different children who had autism included participant observations, videotaping, photo documentations and interviews (Koo, 2008). The results of this study found that children with autism have the same artistic abilities when compared to children without autism. After critically analyzing the children's artwork, researchers concluded that children with autism used their artistic abilities (such as creative use of line, shape and composition) to narrate personal stories that they have experienced (Koo, 2008). Moreover, the study found that children's artistic abilities developed when they were exposed to interactive social environments and planned art lessons (Koo, 2008). Therefore, the study suggests that to fully understand the artistic expressions of individuals with autism, this requires knowing the child as a whole being. Overall, this study proposes that implementing well-planned art lessons in schools for autistic individuals can potentially lessen their symptoms of autism (Koo, 2008).

Similarly, another study using functional magnetic resonance imaging (fMRI) found that both the right and left hemispheres of the brain are engaged when art is being performed (Cutting, 2014). Interestingly, another study found that while damage to the brain often negatively alters an individual's physiological, sensory or cognitive functioning, these alterations often do not impede on an individual's ability to produce art (Chatterjee, 2015). The production of art is very complex with different components mediated by various parts of the brain (Chatterjee, 2015). The final artistic output comes from the coordination of different components (Chatterjee, 2015). About 10 percent of children with autism develop savant-like abilities and a sub-set of these children produce visual images (Chatterjee, 2015). A detailed description of this case was a study done on a participant with autism named Nadia (Chatterjee, 2015). As a young infant, Nadia did not respond to her mother (experienced a delay in language acquisition) and was obsessed with the presence of other children without forming substantial bonds with them (Chatterjee, 2015). Although she experienced these developmental differences, Nadia was very skilled at drawing (Chatterjee, 2015). She was able to create life-like horses at the age of three years old (Chatterjee, 2015). Overall, since artistic skills stay intact, individuals with autism are able to use art to express themselves and communicate with others instead of relying on other methods.

3.8 Artistic Techniques Can Communicate Mood, Emotions and Personal Narratives

Furthermore, studies have found that artistic techniques used by individuals with ASD can communicate their mood, emotions and personal narratives they have experienced. Since visual arts can communicate in ways words cannot, individuals with ASD can use art to connect their thoughts, feelings and perceptions, help them understand who they are and help them relieve overwhelming emotions (Richardson, 2016). Specifically, a longitudinal study examined

a three year old boy diagnosed with high functioning autism (Kellman, 1999). From a young age, his mother encouraged him to express his ideas and opinions through drawing. He used different artistic techniques to express himself through the use of intense lines, shapes, etc (the style he selected was correlated with the emotions he felt at the time) (Kellman, 1999). Moreover, the form and style the child decided to use provided the interpreter a systemic understanding about the way that child felt (content and style are both important when analyzing the artworks of an individual with autism) (Kellman, 1999). The study found that the underlying point was not how individuals with and without autism use different artistic styles but how the use of art was a means to fulfill their particular purpose which relates to their life situation (Kellman, 1999). The method used to collect the data was participant observation. This method was selected since using direct questions could be irritating to individuals with autism (Kellman, 1999). The study found that the child's drawings focused on making meaning and constructing a personal sense of self (Kellman, 1999). Likewise, a study used different types of artistic methods to examine whether art could improve the overall general well-being of individuals with ASD (Thoemke, 2012). The study found that using art was able to assist individuals with autism to develop abstract thinking skills, improve social skills, decrease problem behaviours, improve their confidence, decrease internalizing behaviours, hyperactivity and problem behaviour and share more appropriately (Thoemke, 2012). Overall, the study found that art-based interventions can enhance an individual's mood and emotions (Thoemke, 2012).

3.9 Participation with Art Increases the Expression of Emotions

Specifically, one study examined whether art can be used as an alternative form of communication for individuals with ASD within the classroom (arts integration curriculum) (Batson, 2010). The purpose of the study was to understand the effects of an arts integrated

curriculum in comparison with a traditional non-arts integrated curriculum (Batson, 2010). A treatment and control group were both analyzed to discover if art enhances individuals with ASD's social skills, communication skills, and classroom behaviours (Batson, 2010). The study was a qualitative research project that had a sample size of (n=18) and the participants eligible to participate in the study were identified with ASD and received school services through an IEP (Batson, 2010). The participants recruited were between the ages of five to fourteen years old (kindergarten to grade eight). The findings indicate that differences between the social and communicative skills of students in the treatment and control group exist (Batson, 2010). For example, individuals in the treatment group (arts integration curriculum) showed a desire for friends, demonstrated improved social interactions, were social and communicated more often with others while being friendly (Batson, 2010). In comparison with the control group, no improvements in specific social skills were found, however, these students tended to stay secluded (Batson, 2010). Overall, individuals with ASD who were given the arts integration curriculum increased their expression of communication, social skills and emotions (being friendly).

CHAPTER FOUR: METHODOLOGY

The methodology used to conduct this study involved both quantitative and qualitative measures. Quantitative data was obtained from the Galvanic Skin Response (GSR) device which measures the electrical resistance of the skin to detect the most sensitive markers for emotional arousal. The purpose of obtaining this information was to determine whether the GSR matched the participant's emotional arousal when performing artwork. The participants were required to complete the GSR task twice, once to capture the baseline and the second time to measure the participants emotional arousal after the art intervention was administered. Furthermore,

qualitative data was obtained through conducting two short interview sessions which required participants to answer questions that were specifically about the drawings they created. The purpose of the interview was to discover whether what the participants drew connected with their emotions.

4.1 Participants

The participants that were recruited for this study included York University students that were diagnosed with ASD and who were 18 years or older. The study was conducted on a total of ten participants. Five participants were clinically diagnosed with ASD and the remaining five participants were not diagnosed. The participants that had ASD initially did not create art drawings but afterwards were given the art task. Similarly, the participants that did not have ASD initially did not create art drawings and afterwards were given the art task to complete (therefore, this was done to ensure the data revealed if art increased the participant's ability to talk about their emotions). Moreover, the purpose of conducting the study on individuals with and without ASD was to compare both groups and analyze if any changes existed (see Figure 1 below). This study used a small number of participants since it is a pilot study. Group one included five individuals who were clinically diagnosed with ASD and group two consisted of five individuals who were not diagnosed with ASD. Participants in group one (including individuals clinically diagnosed with ASD) were recruited from the Assistive Technology Lab located at York University. In addition, advertisements were posted around York University in the Behavioural Science Building (BSB), Victor Philip Dahdaleh Building, Counselling and Disability Services and the Asperger Mentorship Program (ASD). Participant's confirmed they had ASD before participating in the study (the organization that they were recruited from also confirmed they are diagnosed with ASD). Participants with ASD who participated in the study

were compensated with five dollars for their time. Similarly, participants in group two (including individuals without ASD) were all recruited through using York University's Undergraduate Research Participant Pool (URPP) database. The majority of the students found on URPP were first year students who were enrolled in Psychology. Participants that were recruited from the URPP database were granted 1.5 credits for participating in the study. The age group of the participants ranged from 18 to 30 years since students under the age of 18 years were not included in the study. In relation to gender, six participants were males and four were females. Participants that were recruited did not have professional experience working with art. This was done to eliminate factors that would impact the overall drawing experience of participants. In other words, the goal of this study was to evaluate whether individuals who don't have prior experience (training) in drawing are capable of using art to communicate their emotions with others.

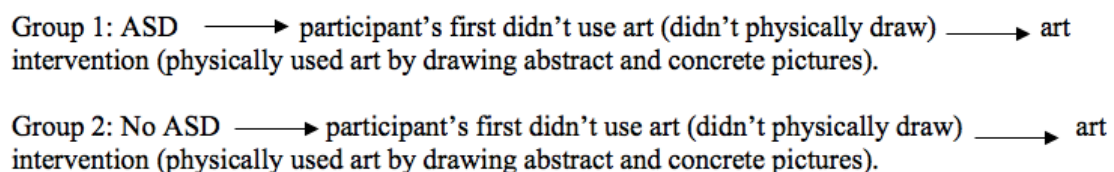


Figure 1: Methodology Diagram

4.2 Materials and Apparatus

Various materials were used to conduct the overall research study which included the following; art questionnaire, Galvanic Skin Response (GSR) device, variety of art supplies and interview question templates for the participants to follow along. All of the materials were provided for the participants during the session.

4.2.1. Art Questionnaire

The purpose in asking participants to complete the art questionnaire was to assess their level of artistic abilities. Since this study restricted individuals who were professional at doing art from participating, the questionnaire ensured that all participants were novices. The questionnaire was a Likert scale of measurement and included four distinct statements about ability, familiarity, enjoyment and past experiences drawing. From a scale of one to ten (one being the lowest and ten being the highest) participants were required to rate themselves on how well they could do the following; how well they could draw, how familiar they were with drawing, how much they enjoy it and if they liked drawing as a child.

4.2.2. Galvanic Skin Response

The Galvanic Skin Response (GSR) is a device that measures the electrical resistance of the skin to detect the most sensitive markers for emotional arousal. The purpose of the GSR is to allow researchers to tap into the unconscious behaviour that is not under cognitive control (AD Instruments, 2008). The GSR originates from the autonomic activation of sweat glands in the skin. The sweating on the hands is triggered by emotional stimulation which occurs whenever an individual is emotionally aroused. The GSR data shows different patterns that can be statistically quantified (AD Instruments, 2008). Skin conductivity is modulated by the autonomic sympathetic system that drives bodily processes which include both emotional and cognitive states (AD Instruments, 2008). Whenever sweat glands are triggered and become active, they secrete moisture through the pores and onto the skins surface. By changing the balance of positive and negative ions in the secreted fluid, electrical current flows more readily, resulting in measurable changes in skin conductance (increased skin conductance will result in decreased

skin resistance). Therefore, the GSR is able to detect emotional arousal and has been interpreted to be a sensitive method for collecting physiological and psychological data on stimulus-related arousal. The GSR activity is measured using micro-Siemens (uS) and unit of conversion is done once the GSR Amp is zeroed (AD Instruments, 2008). The skin conductivity is recorded non-invasively using two electrodes that are placed on the skin (one electrode is placed on the surface of the index finger and the second electrode is placed on the surface of the middle finger) (AD Instruments, 2008). GSR sensors have a 1 cm² measurement site made of Ag/AgCl (silver/silverchloride) which are placed on reusable snap-on Velcro straps (AD Instruments, 2008). The GSR was connected to a device called PowerLab which is an integrated system of hardware and software designed to record, display and analyze experimental data (AD Instruments, 2008). The hardware includes the PowerLab recording unit and different ancillary devices (frontends, pods, etc). The software consists of the LabChart and supplementary modules and extensions, which run on the computer to which the PowerLab is connected (AD Instruments, 2008). Once the PowerLab transfers data to the computer, it is available for display, manipulation, printing, storage and retrieval. In this study, data was recorded using the PowerLab and the LabChart Reader hardware (AD Instruments, 2004). The programs were used on a Dell (Windows) desktop computer placed on a trolley cart (the GSR was placed at the bottom of the cart) (AD Instruments, 2008). The PowerLab hardware was set to 1kHz and channel one was used to capture the data. The input amplifier was replaced by the GSR Amp once it was properly connected to the channel (AD Instruments, 2008). Before measurements could be made with the GSR Amp, it was zeroed (to start each participant an “open circuit” was done first and then a “subject zero” proceeded). The subject zero gives an absolute measure of the skin conductivity of the subject, the baseline conductivity from which relative changes are

measured (measure from zero (baseline) to the first change) (AD Instruments, 2008). Normal baseline conductivity values range from 10 to 50 μS . The results were captured through LabChart Reader and were transferred into charts (AD Instruments, 2008).

4.2.3. Art Task Instructions

The art task was specifically developed to allow participants to artistically express themselves in the most unrestricted way possible. The purpose of this task was to give participants the freedom to convey any emotions, feeling or perceptions they had. Participants were provided with instructions to guide them when completing the task. In this study, art was defined as organized expressions of ideas, feelings and experiences through creating images (Kozbelt, A., & Seeley, W. P, 2007). Specifically, participants were required to draw. The definition of “drawing” was provided to participants. Drawing was defined as making lines, shapes, texture, colour and space to organize expressions of ideas, feelings and experiences (Kozbelt, A., & Seeley, W. P, 2007). Various art supplies were provided for participants to use such as; paper (small, medium and large), watercolour paper, sketch paper, canvases (small, medium and large), acrylic paint, watercolour paint, paintbrushes (various lengths, sizes and textures), foam brushes, paint palettes, oil pastels, crayons, pencil crayons, pencils, markers (different sizes) and charcoal (different sizes). Before participants started the art task, they were divided into two groups. Both groups completed an art task but they were assigned to either use art actively or passively. Active participation with art involved asking participants to physically create drawings using different art tools and discuss the drawings they created with the researcher. In contrast, passive participation with art required participants to simply look at art pieces and discuss them with the researcher. The purpose of having some participants complete active and passive art was to examine whether active versus passive participation with art

increased or decreased their ability to express and communicate their emotions. Both art tasks consisted of two parts, part “A” and part “B.” Part “A” asked participants to focus on abstract art which is defined as using colour, shape, line, form, pattern and texture to create a visual representation (Gridley, 2013). In contrast, part “B” consisted of focusing on concrete art which is based on geometric imagery and patterns to create a visual representation (Gridley, 2013). Individuals who actively used art, were asked to physically draw two pictures (one abstract picture and one concrete picture). These participants completed the active art task which was called the “blind drawing task.” The “blind drawing task” required participants to close their eyes and move their writing tools (they could choose to draw with anything from the art supplies provided) freely to create lines, shapes, patterns and doodles. Before completing this task, participants were asked to think of a situation that made them feel a particular emotion and to draw based on that situation and how they felt (the focus was on the particular emotions they experienced). For example, a situation could be failing a class which resulted in feeling sad and angry. In comparison, some participants were asked to use art passively. Those individuals completed “The Shape Task.” This task required participants to use any materials they wanted to create a concrete drawing (picture of a scene) which included objects, shapes and a visual image that has meaning behind it (both geometric and organic shapes could be used). Participants could open their eyes during this task and they did not have a time limit but were asked to let the researcher know when they completed the task. Some participants were asked to passively use art. Participants were asked to view a total of fourteen different drawings that were completed by various professional artists. The drawings were presented to participants in two separate piles. The first pile consisted of seven abstract drawings and the second pile included seven concrete drawings. Participants were instructed to select two drawings, one from the abstract pile and the

other from the concrete pile. Participants were told to pick drawings they felt most connected with emotionally. This task took approximately two to five minutes to complete. Once the participants completed the entire art task they were directed to complete the final task (the second interview session).

4.2.4 The Experiencing Scale

The experiencing scale was used in this research project to measure the level of emotional connection participants had with themselves after drawing. The purpose of using this scale was to reveal whether participants were able to become closely connected with their emotions and ultimately communicate this with others (Ikemi, 2005). The experiencing scale was developed by Gendlin, Rogers and others who wanted to test assumptions made about client-centered therapy against long-term outcome measures on a population of patients at a hospital (Ikemi, 2005). The findings were staggering as they found that success was not in what the therapist was doing but had to do with what the client was doing (Ikemi, 2005). They found that clients involved in therapy were able to speak about bodily-felt experiences which often resulted in focusing on the felt experiences of emotions (Ikemi, 2005). Although an individual might feel something, they might not be aware of what they are feeling and experiencing. The purpose of focusing is to allow the individual to become aware of their own bodily “felt senses” as they learn to direct their attention towards inner experiences that are difficult to communicate and describe in a concrete manner (Ikemi, 2005). Therefore, the purpose of the experiencing scale is to measure an individual’s immediate sensed but implicit experiences. The scale ranges from level one which is considered very low until seven which is very high (Ikemi, 2005). In high experiencing, the individual attends directly to this implicit sense and allows verbal expression. However, in a lower level of experiencing, an individual may fail to discriminate an initially

vague sense and get stuck in an intellectual or repetitively emotive process. The experiencing scale includes categories that are assessed and scored which include grammatical, expressive, paralinguistic and content. A participant that is at level one under the grammatical category would not use first person pronouns, past or present tense. In relation with the expressive category, a level one would act very despondent and impersonal but would be fluent under the paralinguistic category. In terms of content, a level one individual would be impersonal and speak about external events and refuse to participate. An individual under a level two would use personal pronouns; past and present when speaking and would show signs of being interested and intellectual under the expressive category. Moreover, a level two individual describes someone who is usually fluent and discusses external events; behavioural or intellectual self-description. Someone who is under a level three would use personal pronouns and speak in the past and present, show limited reactions of expressions, show some affect indicators (ex. laughs or sighs) and express personal reactions to external events while including limited self-descriptions and behavioural descriptions of feelings. At a level four an individual uses the present or past tense, is immediate and expressive, focuses on voice and expressions of affect and would speak about personal reactions to external events; limited self-descriptions and behavioural descriptions of feelings. A level five includes using present and subjunctive tense, expresses in an immediate way, is dysfluent² and discusses problems or propositions about feelings and personal experiences. A level six includes using present tense of vivid representations of the past, expressing in a declarative and real way, includes exclamation and alterations of dysfluency³ and discusses felt senses of an inner referent. Lastly, a level seven

² Dysfluent is the impairment in the ability to produce smooth and fluent speech

³ Dysfluency: proceeding with difficulty; usually used within speech disorders such as stuttering

includes primarily speaking in the present tense, expressing in an affirmative way, speaking with more fluency than dysfluency and the content includes a series of felt senses that is connected with the content. The figure below (figure 2) is the experiencing scale summarized in one chart.

EXPERIENCING SCALE

(Klein, Mathieu, Gendlin & Kiesler, 1969)

Scale Stage	Grammatical	Expressive	Paralinguistic	Content
1	No first-person pronouns; past or present tense	Remote, impersonal	Fluent	Impersonal, others' activities or events
2	Personal pronouns; past or present tense	Interested, intellectual	Usually fluent	Ideas, events, actions
3	Personal pronouns; past or present tense	Limited reactions	Some affect indicators, e.g., laughs, sighs	Parenthetical or limited references to feelings
4	Present or past tense	Immediate, expressive	Focused voice, expressions of affect	Subjective experiences and associations
5	Present tense, but past can be included; Subjunctive, tense questions	Immediate, groping, tentative	Dysfluency	Questions about uncertainty in own awareness
6	Present tense or vivid representation of past	Declarative, fresh, real	Exclamation, alternations of dysfluency and fluency, pauses	Directly sensed and emergent feeling
7	Present tense primarily	Affirmative	More fluency than dysfluency	What one "knows" for oneself

Figure 2: Experiencing Scale

4.2.5 Interview Sessions

Interview sessions were conducted in this study to fully understand the participants perspective on the drawings and the way they connect with their emotions. Since the art task was subjective, it was crucial to ask open ended questions that would allow participants to express

how the pictures they drew connected with certain emotions they felt when dealing with a situation (the situation could be based on past or present life events). The interview questions were developed in consultation with a professor of art who came up with critical questions to unpack the artwork of the participants. This study included two interview sessions that took place at different points during the study (appendix B). The purpose of conducting two interviews was to compare the amount of communication that participants expressed before and after being exposed to art (pre and post drawing). Both interview sessions asked the same questions (two minor differences included the grammar that was used to articulate the questions and incorporating three additional question in the post drawing interview session) (appendix B). The first interview session was conducted following the GSR and faces task which was used to capture the participants baseline. The purpose of including the first interview session during this time was to measure the amount of communication expressed before participants were exposed to art. The interview consisted of six questions that took approximately half an hour to fully complete (appendix B). During the first interview session, participants were asked to think of a time when they drew a specific drawing (definition: making lines, shapes, texture, colour and space to organize expressions of ideas, feeling and experiences) and afterwards answered specific questions based on the specific drawing they recalled (appendix B). The questions focused on the participants emotions and were directed to help individuals express themselves in an open and honest way. The first question asked the participants to tell the researcher how their drawing looked like. This question was asked for participants to discuss anything that comes to mind when recalling their drawing (appendix B). This was an open-ended question that did not restrict participants from leading the conversation. Based on the participants response, follow up questions were asked to ensure participants were focusing on their emotions. The first follow up

question asked participants if they could remember what emotion(s) they felt while recalling the picture (“Can you remember what emotion(s) you felt while recalling your picture?”) (appendix B). The second follow up question asked if they experienced any new emotions while explaining the drawings to the researcher (“Did you experience any new emotions while explaining your drawing to me?”) (appendix B). Both of the follow up questions allowed participants to distinguish between the emotions they are feeling in the present moment and the emotions they felt while explaining the drawing. This question was helpful since participants were able to reflect on experiencing themselves in the art making process (in the present moment while recalling art) which afterwards helped them communicate and share more appropriately (they were able to focus). The question asked participant what they used to create their picture, specifically, what drawing tools and materials they used (appendix B). The purpose of this question was to direct the participants attention to the style they chose to draw their picture. This question was important to address since the style that participants chose revealed information about their emotions. Artistic strategies used within the drawings shape an individual’s emotions and allows them to construct personal narratives. The third question asked participants what tools they used that helped them express their emotions the most (appendix B). Following the third question, participants were asked if someone was to look at their drawing for the first time what is one thing that they would want this person to know (appendix B). This question measures the degree to which the participant is willing to communicate their emotions and ideas with others aside from the researcher. Participants were then asked to recall a specific part of their drawing that they felt most connected with themselves (this could be an object, colour, specific texture, etc) and were asked to explain why they were most connected to that area (appendix B). The purpose of this question was to reveal what participants valued the most in their drawing. The

answer to this question revealed underlying emotions that participants might have wanted to overlook and not communicate. The last question asked participants how they felt sharing their emotions with the researcher (appendix B). The purpose of this question was to detect their comfort level and how much this influenced the emotions and details they were sharing. In relation with the interview session conducted after participants completed the art task, three additional questions were asked. Participants were asked to discuss a part of the drawing that reminded them of a particular experience (appendix B). This question focused on the situation that made them feel a certain emotion while connecting it to their artwork. Afterwards, participants were asked what they learned about themselves after completing the study and whether or not they enjoyed the overall task (appendix B). The answers to this question provided insight into whether using art helped them communicate emotions. Lastly, they were asked whether they enjoyed participating in this task.

Furthermore, it is important to note the role of the researcher during the interview sessions since it impacted the overall behaviour of participants. During the interview sessions, the researcher was non-judgemental, attentive, conscious of the participant's feelings, maintained eye contact, reworded phrases the participants mentioned, mirrored non-verbal behaviour participants showed, and showed signs of sympathy using non-verbal cues. These elements encouraged participants to open up and express their emotions as they were provided with a safe and comfortable environment. The researcher abstained from interrupting participants to add on her own thoughts and opinions but instead gave participants full control over what they wanted to express. Therefore, the researcher was non-intrusive and objectively listened to the participants as they expressed their emotions.

4.3 Procedure and Research Design

The research design consisted of different tasks that participants were asked to complete. The first group of participants that completed the tasks included individuals that were not diagnosed with ASD. These individuals were first asked to fill in the art questionnaire (appendix B) which consisted of four different questions regarding their artistic abilities. Following the art questionnaire, participants were required to complete the GSR (Galvanic Skin Response) and the face task. To complete this task, participants were first introduced to the GSR device. Then participants attached the GSR onto their index and middle fingers and were asked to look at a PowerPoint slide (on a MacBook Air computer screen) that presented seven universal faces⁴ which depicted various emotions accompanied with matching sounds. The seven universal emotions included angry, fear, surprise, happy, sad, disgust and contempt. For example, the first face that participants saw was an angry face accompanied with a sound of someone expressing anger (appendix B). The purpose of including matching sounds accompanied with the faces was to elicit a physiological response from participants when viewing the faces. This was required for the GSR to capture a response from the individual. In other words, as the universal faces appeared, the GSR captured the individual's electrical markers that revealed when the participants felt emotionally aroused. The results were portrayed on a device called the PowerLab which is an integrated system of hardware and software designed to record, display and analyze experimental data (ADInstruments, 2008). The results were portrayed in the form of graphs which were then analyzed. The purpose of doing this task in the beginning of the study was to achieve a baseline and measure the variable of interest prior to exposing participants to

⁴ Note: the responses of the participants might be different if the faces were more ethnically diverse and if the participants themselves were more diverse

art. The baseline was later used to compare other measurements and to evaluate the effectiveness of the overall study. Following the GSR and the face task questionnaire, participants were asked to participate in the first interview session. This session was called “recalling a drawing” interview that consisted of six questions regarding a specific drawing participants drew in the past and were asked to recall it (appendix B). The purpose of the interview session was to measure the level of communication participants were willing to share about their emotions prior to using art. The results of the “recalling a drawing” interview session were compared with the second interview session conducted later on in the study to evaluate whether the level of communicating emotions increased after drawing. Afterwards, participants were asked to complete the art task which consisted of both “the blind drawing task” and “the shape task” (appendix B). At this point in the study, the same participants who did not have ASD were asked to perform similar tasks. Some of the participants were required to actively (physically) create two drawings (one concrete and one abstract). These individuals completed art in an active manner. On the other hand, some participants were asked to complete passive art which included selecting two drawings (one concrete and one abstract) to discuss during the interview session. The purpose of including both active and passive art tasks was to analyze the difference between active and passive learning. After participants finished that task, they were directed to complete the GSR and the face task questionnaire again which was done to capture the GSR levels post-drawing (appendix B). The results of the GSR in both pre-drawing and post-drawing tasks were monitored to find out if participants got emotionally aroused when looking at a particular face (on the computer screen) and whether that particular face matched the emotion they previously drew (or selected from the set of drawings provided). Lastly, participants were asked to complete the final interview session of the study which asked them specific questions regarding the

drawings they created or selected (appendix B). In comparison, the second group which included individuals clinically diagnosed with ASD completed the same tasks as individuals who were not diagnosed with ASD, however, they were asked to additionally complete the “face task” questionnaire (appendix B). “The face task” questionnaire was a multiple-choice question sheet that included pictures of seven universal emotions (anger, happy, surprised, fear, sad, disgusted and contempt) and required individuals with ASD to circle the option that matched the picture (the different emotions were presented in a multiple-choice style questionnaire) (appendix B). The purpose of having individuals with ASD complete an additional task was to evaluate whether they were able to recognize the emotion each face was expressing. This was done to ensure participants were able to recognize each emotion before completing the art task and to eliminate confusion.

4.4 Data Collection Techniques

Different methods were used to collect the data needed to answer the proposed research questions which included observations, experiments and interviews. All three data collection techniques were used at different intervals to collect the data needed from each task performed by the participants. A variety of different data collection techniques were chosen since the tasks that were completed by the participants required multiple of skills that were measured in specific ways.

4.4.1 Interviews

Another method that was used to collect data were the interview sessions conducted at two different points during the study. The interviews involved asking participants specific questions about the drawings to elicit an emotional response. The first interview session was called “recalling a drawing” which asked participants to recall a specific drawing they drew in

the past and answer specific questions based on that particular drawing. The interview session was evaluated using the experiencing scale which measured the participants inner emotional connection with themselves. The second interview session asked participants questions regarding the drawings they created or selected in the second half of the study. The responses of participants were transcribed on a MacBook Air laptop as well as their non-verbal behaviours. The experiencing scale was used afterwards to assess and place participants on different levels. The interviews provided narratives about the feelings, emotions and reactions the participants went through while creating their drawings or selecting various artworks. Moreover, using interviews as a method of collecting data ensured that participants had the chance to explain their thought process from their perspective while performing the required tasks. This ensured the researcher did not make misinterpretations about the drawings but received an accurate explanation from the participants themselves. Overall, the two interview sessions provided focused, clear and open-ended questions that participants were able to freely respond to.

4.4.2 Questionnaires and Scales

The last data collection technique that was used in this study was the integration of questionnaires and scales. Participants were required to complete the art questionnaire which was a Likert scale that measured their artistic abilities (this was a subjective questionnaire that participants judged for themselves based on their perspective regarding own artistic abilities). Similarly, the experiencing scale was used to measure the emotional connection the participants had with themselves prior and after drawing.

CHAPTER FIVE: RESULTS

5.1 Data Analysis and Interpretation

After gathering the required data through using observations, experiments, interviews, scales and questionnaires; the data was analyzed and interpreted using quantitative and qualitative research methods. The quantitative measures in this study included both the GSR results and the experiencing scale while the qualitative data included drawings and interview sessions. This study included a total of ten participants, five that were clinically diagnosed with ASD (group one) and the remaining five that were not diagnosed with ASD (group two). The data in this section includes case studies of the ten participants that participated in the study. The data was analyzed in the following order: the art questionnaire, GSR data, art drawings, interview sessions and the face task questionnaire. The purpose of analyzing the data in this order was to ensure that the results were obtained in a chronological manner and to eliminate any confusion. The figure below (figure five) summarizes the GSR levels for all ten participants. The participants were labeled from A to J to ensure anonymous responses.

Figure 5: Summary of the GSR Levels for All Ten Participants

PARTICIPANT A			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Selection Task (Mean)</u>	<u>Analysis</u>
Anger	3.8123	3.4265	No significant effect
Happy	3.5768	4.2893	Minor significant effect
Surprise	3.6221	5.1544	Minor significant effect
Fear	3.614	5.3282	Minor significant effect
Sad	3.6743	5.9053	Significant effect
Disgust	3.6372	6.556	Significant effect
Contempt	3.7233	6.8566	Significant effect
PARTICIPANT B			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Selection Task (Mean)</u>	<u>Analysis</u>
Anger	1.4432	1.1437	No significant effect
Happy	1.7855	1.0706	No significant effect
Surprise	2.1513	0.9304	No significant effect
Fear	-0.1027	0.6928	Significant effect
Sad	-0.0333	0.322	Significant effect
Disgust	1.343	0.2155	No significant effect
Contempt	2.0519	1.1435	No significant effect

PARTICIPANT C			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	0.5611 μ S	0.4415 μ S	No significant effect
Happy	0.6064 μ S	0.5071 μ S	No significant effect
Surprise	0.5668 μ S	0.4198 μ S	No significant effect
Fear	0.5049 μ S	0.534 μ S	Significant effect
Sad	0.4673 μ S	0.8398 μ S	Significant effect
Disgust	0.5242 μ S	0.3392 μ S	No significant effect
Contempt	0.4949 μ S	0.314 μ S	No significant effect
PARTICIPANT D			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	1.8434 μ S	0.8654 μ S	No significant effect
Happy	3.0865 μ S	2.3658 μ S	No significant effect
Surprise	2.4767 μ S	3.6939 μ S	Significant effect
Fear	2.0664 μ S	3.6267 μ S	Significant effect
Sad	1.6398 μ S	3.5391 μ S	Minor significant effect
Disgust	1.355 μ S	3.4004 μ S	Minor significant effect
Contempt	1.2546 μ S	3.2872 μ S	Minor significant effect
PARTICIPANT E			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	2.2891 μ S	3.2763 μ S	Significant effect
Happy	2.8844 μ S	3.5488 μ S	Significant effect
Surprise	3.9025 μ S	3.7288 μ S	No significant effect
Fear	4.3661 μ S	3.4657 μ S	No significant effect
Sad	4.9419 μ S	3.6592 μ S	No significant effect
Disgust	2.7599 μ S	3.2024 μ S	Minor significant effect
Contempt	2.3275 μ S	2.8989 μ S	Minor significant effect
PARTICIPANT F			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	1.9972 μ S	2.5733 μ S	Minor significant effect
Happy	2.7351 μ S	2.6533 μ S	No significant effect
Surprise	3.166 μ S	2.982 μ S	No significant effect
Fear	2.9302 μ S	3.2724 μ S	Minor significant effect
Sad	3.1595 μ S	3.8072 μ S	Minor significant effect
Disgust	3.1573 μ S	4.4981 μ S	Significant effect
Contempt	3.3377 μ S	4.4216 μ S	Significant effect
PARTICIPANT G			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	5.3743 μ S	2.3094 μ S	No significant effect
Happy	1.1262 μ S	4.0649 μ S	Significant effect
Surprise	2.7692 μ S	0.9514 μ S	No significant effect
Fear	1.8801 μ S	0.7647 μ S	No significant effect
Sad	0.6204 μ S	0.865 μ S	Significant effect
Disgust	1.3004 μ S	0.8762 μ S	No significant effect
Contempt	4.2632 μ S	1.9373 μ S	No significant effect
PARTICIPANT H			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>

Anger	0.0094 μS	1.5743 μS	Minor significant effect
Happy	0.0681 μS	1.6556 μS	Significant effect
Surprise	0.0396 μS	1.6492 μS	Minor significant effect
Fear	0.0399 μS	1.6223 μS	Minor significant effect
Sad	0.0388 μS	1.6643 μS	Significant effect
Disgust	0.1023 μS	1.6531 μS	Minor significant effect
Contempt	0.1017 μS	1.6519 μS	Minor significant effect
PARTICIPANT I			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	4.1504 μS	4.205 μS	Significant effect
Happy	4.7686 μS	4.2466 μS	No significant effect
Surprise	4.2405 μS	3.9087 μS	No significant effect
Fear	3.4792 μS	4.3078 μS	Significant effect
Sad	4.3426 μS	2.8989 μS	No significant effect
Disgust	3.7248 μS	2.2527 μS	No significant effect
Contempt	4.0837 μS	1.7049 μS	No significant effect
PARTICIPANT J			
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	6.8389 μS	0.7756 μS	No significant effect
Happy	6.5635 μS	0.8229 μS	No significant effect
Surprise	6.0375 μS	0.8515 μS	No significant effect
Fear	5.5745 μS	0.814 μS	No significant effect
Sad	5.2648 μS	0.7315 μS	No significant effect
Disgust	4.6614 μS	0.727 μS	No significant effect
Contempt	4.4549 μS	0.73 μS	No significant effect

Figure 5

5.2 Participants Not Clinically Diagnosed with ASD Data

A total of five participants who were not clinically diagnosed with ASD were included in this study. The participants were labelled using letters from A to E to identify their data. In this group, three of the participants were female and two were male.

5.2.3 Participant A

The first participant that took part in the study was called “Participant A.” Participant A was a male York University student who did not have ASD and was included in the passive art group (the participant was asked to select two images from fourteen different pieces). The first

piece of data analyzed was the art questionnaire. Participant A ranked himself as not being good or bad at drawing but perceived himself as having a strong interest in engaging in art since his answers on the art questionnaire (the art questionnaire was a Likert scale from 1 being the lowest to ten being the highest) fell on the level five when rating how well he could draw but when asked about how much he enjoyed art his answers were all above a level five (appendix B). The GSR results were measured next to capture the participant's electrical markers and reveal when he felt emotionally aroused. The GSR charts indicated a significant effect when participant A viewed contempt, disgust and sad faces (all three of these faces were from the seven universal faces). In other words, participant A was emotionally aroused when viewing contempt, disgust and sad in comparison with his baseline results. On the other hand, participant A showed no significant effect when he viewed an angry face. The chart below compares both the GSR baseline and post-selection task levels that were analyzed using the GSR LabChart Reader. For the purpose of this study, the GSR levels that showed a minor effect were not taken into account.

Comparison Between Baseline and Post Selection Task- Participant A

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Selection Task (Mean)</u>	<u>Analysis</u>
Anger	3.8123	3.4265	No significant effect
Happy	3.5768	4.2893	Minor significant effect
Surprise	3.6221	5.1544	Minor significant effect
Fear	3.614	5.3282	Minor significant effect
Sad	3.6743	5.9053	Significant effect
Disgust	3.6372	6.556	Significant effect

Contempt	3.7233	6.8566	Significant effect
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Table 1

The table 1 above indicates the baseline level of “anger” for participant A was 3.8123 which is lower than the selection task results which indicate 3.4265 ($3.8123 < 3.4265$). Participant A’s baseline levels were lower in comparison with his post selection task levels which indicates no significant effect. In contrast, participant A scored 3.7233 on the baseline task and 6.8566 on the post selection task which indicates a significant effect since he scored higher on the post selection task in comparison with his baseline results ($3.7233 < 6.8566$). When participant A viewed the “disgust” face, he scored a baseline of a 3.6372 and a post selection score of a 6.556, a significant effect was found since the post selection task results were higher than his baseline results ($3.6372 < 6.556$). Lastly, when participant A viewed a “sad” face his baseline was a 3.6743 and post selection task was a 5.9053. A significant effect was found since he scored higher on the post selection task in comparison with the baseline levels when viewing the “sad” face. In relation with the selection task, participant A was asked to think of two different situations that made him feel two different emotions and select two images that represented those two different emotions (participant A selected one abstract and one concrete picture). The abstract picture that participant A selected was “image 4” and the concrete was “image 6” (appendix B). The image 1.1 below is a visual of the abstract picture (image 4) participant A selected.



Image 1.1

In order to establish whether participant A connected his emotions with the images he selected, the second interview session was used to understand how the art pieces made him feel. The interview session that needed to be analyzed to evaluate this was the second interview session where participant A disclosed how the art pieces made him feel. This interview session was conducted after he selected the art pieces and completed the GSR and face task again. Participant A discussed feeling depressed when looking at the abstract image (image 4). Participant A stated “When I first looked at it I felt a depressing feeling, it reminded me of mental deterioration or something falling apart.” The emotions he felt looking at the drawing included lost, sad, hopeless and confused which were all negative feelings. When participant A was asked to discuss what particular experience the drawing reminded him of he stated “I feel like when you’re feeling lost and helpless and that feeling of bottling up your emotions in a way, and just letting yourself be drowned with all the emotions instead of talking to someone about it. A lot of people don’t know how to deal with emotions and it kind of made me remember a time in my life when I felt

helpless and hopeless.” Participant A clearly indicated feelings of sadness in both of his responses when looking at the abstract image. Similarly, when participant A was asked what is one thing he would like people to know about the drawing, he responded by stating “I would tell them to look at the center, how it’s being attacked by the white. I would tell people to appreciate it. The center looks like it’s being squished.” The participant expressed feelings of contempt when responding to this question since he focused on wanting others to appreciate the drawing and on the way the center (black) is being taken advantage of by the white (“being squished”). Participant A was asked to discuss the second picture that he chose which was a concrete image (image 6) (appendix B). The image 1.2 below is a visual of the concrete picture (image 6) participant A selected.



Image 1.2

Participant A discussed feeling sad, contempt and disgust when referring to the picture he selected above. When asked what specific feelings participant A felt when looking at the picture, he responded by stating “I feel a bit left out like not casted away but put to the side, it’s like

someone is telling me we don't need you right now....it's like feeling forgot about or thrown away and not needed." Participant A continued to explain these feelings when asked to speak about a part of the drawing that reminded him of a particular situation, he responded "I feel like I am left out, when my friends go out they don't invite me. It's not pushing you away but having a lack of friendship, it's a feeling of being pushed away. I feel alone." Participant A thought the building represented his close friends making plans without including him as he is watching from the outside. Both the concrete and abstract pictures represent participant A's emotions which include sadness, contempt and disgust. Therefore, the interview session confirmed the GSR results which suggest that participant A connected his emotions with the pictures associated with physiological arousal. Furthermore, in order to measure the level of communication participant A demonstrated, both interview sessions (one and two) were assessed. When assessing the "recalling a drawing" interview session (first interview session), participant A did not express specific feelings when referring back to his drawing. Instead, participant A focused on the environmental context rather than on the way the drawing made him feel. When asked whether he could remember the emotions he felt when drawing the picture, the participant focused on describing the situation. Participant A stated "We did it in groups. We had tables and we did it next to each other. It was kind of like a therapy session. It was good." When the participant was asked how he felt discussing this picture he said "it was fun." Moreover, when participant A was asked if he experienced any new emotions while explaining the drawing, he stated feeling "nostalgic." Similarly, when the participant was asked what was one thing that he wanted people to know when looking at his drawing (the drawing he drew in the past) he responded by wanting people to know the hard work he put into creating the drawing and thinks people should appreciate it. The level of communication during the "recalling a drawing" interview session was

lower in comparison with the second interview session (the interview session that was completed after the selection task). The participant was more willing to discuss his emotions and the reason for feeling a certain way after viewing pieces of artwork in the second interview session.

Participant A discussed the way he felt with others in his life and gave more personal responses when discussing the artwork as opposed to the “recalling a drawing” interview session. In order to measure the level of emotional connection participant A exhibited, the experiencing scale (Klein, Mathieu, Gendlin & Kiesler, 1969) was used to assess this element. During the first interview session, participant A was at a stage two on the experiencing scale. A level two is when the association between the speaker and the content is explicit. The speaker is the central character in the narrative or his interests are clear. However, the speaker’s involvement does not go beyond the specific situation or content (Klein, Mathieu, Gendlin & Kiesler, 1969). All comments, associations, reactions and remarks serve to get the story or ideas across but do not refer to or define the speaker’s feelings (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant A demonstrated the majority of the elements in stage two on the experiencing scale during the first interview session. The content that participant A discussed included information about his specific situation without referring a lot to his emotional state. When asked to discuss how the drawing looked, participant A referred to his elementary school experience (grade four) and the way his religion classmates thought about him rather than the drawing he drew during that time. He briefly mentioned having to take pictures and replicate them which was the drawing he decided to discuss when answering the question. Participant A discussed his artistic abilities and how others influenced him when stating “before this class I thought I was good at drawing but when I drew it I lost the artistic side of me. I think it was because I was influenced a lot and eventually stopped as I got older. I feel people were not telling me I was good enough or

discouraging me.” Participant A discussed how he felt about his classmates judging his artwork instead of focusing on how the drawing made him feel. Another example that confirms participant A is at a level two on the experiencing scale is when he was asked to recall a specific part of his drawing that he felt most connected with himself, participant A responded by discussing the inspiration behind his drawing instead of focusing on how he felt emotionally connected with a particular object within his drawing. Participant A stated “it was for a book I was reading. It had two parts and I decided to draw both. When I was at that age I was obsessed with drawing and I just drew the character in the book because I thought it looked cool. The purpose was for the book report.” Therefore, participant A focused on explaining the context instead of the way the drawing made him feel. This showed that he was not in touch with his emotions during the first interview session. However, participant A scored higher on the experiencing scale when completing the post-selection task interview session. Participant A scored a level four on the experiencing scale. In this stage the content should be a clear presentation of the speaker’s feelings, giving his personal, internal perspective or feelings about himself (Klein, Mathieu, Gendlin & Kiesler, 1969). Feelings or the experience of events, rather than the events themselves, are the subject of the discourse (Klein, Mathieu, Gendlin & Kiesler, 1969). By attending to and presenting this experiencing, the speaker communicates what it’s like to be him (Klein, Mathieu, Gendlin & Kiesler, 1969). These interior views are presented, listed, or described, but are not interrelated or used as the basis for systematic self-examination or formulation (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant A spoke about his feelings during the second interview session from his own personal perspective when he commented on feeling like his friends don’t want to be around him and feeling left out and alone as a result. In a similar way, participant A didn’t include contextual information unless it was necessary to

understand the narrative he was discussing. In particular, participant A was quick to share how the abstract artwork (image 4) made him feel as he mentioned feeling “depressed” and a sense of “mental deterioration.” However, participant A failed to examine the reason behind feeling these emotions as he was unable to elaborate on them. Therefore, participant A was given a higher rating during the second interview session since he exhibited personal details about how he was feeling emotionally.

5.2.4 Participant B

The second participant was a York University male student that did not have ASD and was part of the passive art group (the participant was asked to select two pieces of artwork from fourteen different pieces). This participant was called “Participant B.” Participant B’s art questionnaire revealed that he strongly believes he is good at art and highly enjoys drawing since his ratings all fell on a level ten (the art questionnaire was a Likert scale from one being the lowest to ten being the highest) (appendix B). His GSR results indicated a significant effect when viewing both “fearful” and “sad” faces in comparison with his baseline results which were lower.

Comparison Between Baseline and Post Selection Task- Participant B

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Selection Task (Mean)</u>	<u>Analysis</u>
Anger	1.4432	1.1437	No significant effect
Happy	1.7855	1.0706	No significant effect
Surprise	2.1513	0.9304	No significant effect
Fear	-0.1027	0.6928	Significant effect
Sad	-0.0333	0.322	Significant effect

Disgust	1.343	0.2155	No significant effect
Contempt	2.0519	1.1435	No significant effect

Table 2

The table 2 above shows participant B scored 0.6928 during the post selection task when viewing the “fearful” face which was higher in comparison with his baseline score which was a -0.1027 ($0.6928 > -0.1027$). Similarly, when participant B viewed the “sad” face after the selection task, his GSR level was a 0.322 which was higher in relation with his baseline level which was a -0.0333 ($0.322 > -0.0333$). There was no significant effect when participant B viewed faces that represented anger, happy, surprise, disgust and contempt since the baseline levels were all higher in comparison with the post selection task (for example, participant B’s baseline level was a 1.4432 when viewing an “angry” face which was higher than his post selection task results which was a 1.1437). Therefore, participant B was emotionally aroused when viewing both “fearful” and “sad” faces after completing the post-selection task.

Afterwards, participant B’s art pieces that he selected were analyzed to determine whether the emotions he reacted towards during the GSR and face task matched the emotions he felt while selecting the pictures in the selection task. Participant B selected one abstract and one concrete picture. The abstract picture participant B selected was “image 3” and the concrete picture was “image 7” (appendix B). The image 1.3 below is a visual of the abstract picture (image 3) participant B selected.



Image 1.3

Participant B expressed feeling fear and sadness when he referred to image 1.3 which was discussed during the “recalling a drawing” interview session (it was the second interview conducted during the study). At first, the participant thought the drawing was very messy because of the various colours, lines and patterns it included. The drawing reminded him of a “circus” which was an analogy he used to describe the way his mind works. The participant stated “it’s like a mess in your mind, then I see an eye, maybe someone looking into your head. Someone is crazy, is all over the place, and doesn’t know what emotion they are feeling. Somebody is in their head. They don’t know how to feel or what to express. Chaos is a key word to choose to describe this picture.” Participant B felt a lot of anxiety when looking at the picture as he explained “I feel a sense of anxiety when I see this, maybe sort of like ummm, depression, like with the blue on this side. Anxiety for sure and confusion.” The word “depression” suggests participant B also felt sad when viewing this drawing as he later revealed has to do with a

troubled relationship. It was interesting to note the explanation participant B provided when asked to describe a specific part of the drawing that reminded him of a particular experience since he mentioned how his initial feelings of anxiety turned into sadness. Participant B explained that after analyzing the picture, he noticed a man with big shoulders, one eye and a mouth. Participant B suggested the man in the picture looks like “a father figure.” The man reminded him of his own father and the messy relationship he had with him growing up. Participant B stated “me and him never really had a solid connection so when I tried to open up to him it was kind of messy like this (points to the picture).” Participant B was willing to further explain the situation with his father as he added although he has a good connection with his mother he feels like he missed out on having his father around. Participant B suggested “it’s like a different type of connection with your father. Your father has a role to teach you things. My dad, for whatever reason or reasons, me and him never got that father-child bond. I resented things with him. But with my mother, she never put me down or let me down.” Participant B clearly displayed feelings of sadness as he does not like having a distant relationship with his father. He described himself as a “happy” person and wished his father was in his life when stating “I am still going to try and have a relationship with him.” Participant B connected with the image in a personal way and was able to communicate the way the picture made him feel in an open and honest manner. While participating in the second interview session, participant B said this exercise made him realize how bold he could be as he was able open up about a sensitive topic by simply looking at the picture he selected. Similarly, the second picture that participant B chose was a concrete picture (image 7). The image 1.4 below is a visual of the abstract picture (image 7) participant B selected.



Image 1.4:

Participant B expressed feeling a mixture of sadness and fearful emotions when looking at the picture above (image 1.4). Participant B thought the picture reminded him of “industry” and the social pressures of needing to conform and change to fit within what society defines “normal.” The feeling of sadness that participant B felt stems from his ideologies that he expressed about societal issues. Participant B further explained this when he stated “With this picture I see industry and conformity. It reminds me of how society puts labels on people and makes certain rules about gender roles. Society makes people conform and I find the black and white resembling either falling in one category or not.” Participant B felt both emotions as he described feeling internal sadness and fear of the unknown when he stated “I feel internal sadness (looks down) and fear. Fear of the unknown. You don’t know what this is. Fear of judgement. Fear can be so many things. It’s just like corruption.” Participant B was able to further describe the way he physically felt when looking at the picture as he stated “it’s like I am hiding myself in fear of

judgement.” He also commented on the colours used within the drawing to further express the way he was feeling. Specifically, participant B thought the colour grey signifies a dark message. When asked to pick a part of the drawing that reminded him of a certain situation participant B discussed a general problem that many people face instead of recalling a specific situation that related with himself. The picture reminded him of people not wanting to challenge social norms as they are fearful to speak up and confront dealing with a problem. Participant B thought the red stripe on the far left stood out for him because it was the only thing that was different. He further explained “the red stripe doesn’t care about looking the same since it has its own entity.” When participant B was asked if he was willing to expand and further describe the situation he explained a time when he saw his friend get bullied by a group of girls who verbally hurt her feelings. He decided to help his friend by standing up for her every time the girls came to hurt her. Participant B explained “I wasn’t going to see it happen and be quiet. I didn’t regret helping her.” It is interesting to note that participant B was able to further open up near the end of the interview session as he was willing to share a personal story that he was reminded of when looking at the picture. The first interview session (recalling a drawing) was compared with the second interview session (the session described above) to measure the level of communication after being exposed to art. During the first interview session, participant B briefly described the way his drawing looked in terms of what objects were included. However, participant B did not reveal any information about the way the drawing made him feel. When asked to discuss the way the drawing made him feel, participant B did not focus on any particular emotion since he described feeling “creative.” Participant B briefly discussed drawing someone that was an inspiration to him and who had an expressive and strong personality. When asked to reflect on the way he felt, participant B explained feeling like he put a lot of time and effort into his work

and wanted others to know this. He was unable to discuss the way his drawing made him feel or express the emotions he experienced when drawing his picture. Instead, participant B spent time explaining the physical characteristics of the drawing itself. When participant B was asked what is one thing that he would like others to know about his drawing, he suggested wanting them to objectively look at the drawing and create meaning for themselves. It was clear that participant B was unable to express personal thoughts as the majority of his answers focused on general information connected with the way his drawing appeared as opposed to the way his drawing made him feel. Another example of when participant B focused his attention on the physical characteristics of his drawing was when he was asked to discuss a part of his drawing that he felt most connected with himself, participant B answered by stating “the eyes, they are the window to the soul. It’s like the emphasis of the picture. When your eyes connect with someone else it’s very powerful.” This was an example of when participant B discussed general concepts that didn’t reveal personal details or emotions. Therefore, participant B’s level of communication was lower during the first interview session (recalling a drawing interview) in comparison with the second interview session with regards to expressing emotions. The experiencing scale was used to measure participant B’s level of emotional connection in both interview sessions. Participant B scored a level two on the first interview session (recalling a drawing) since the association between himself and the content was explicit (Klein, Mathieu, Gendlin & Kiesler, 1969). During the first interview session, participant B’s involvement did not go beyond the specific situation or content and his interests were clear. The majority of his comments, associations, reactions, and remarks served to get his ideas across but did not refer to or define his feelings (Klein, Mathieu, Gendlin & Kiesler, 1969). Moreover, his remarks and associations referred to external events and objects without giving his inner reactions or perspectives. In contrast, during the

second interview session (post exposure to artwork) participant B scored a level four on the experiencing scale. Participant B's content was a clear presentation of his feelings, giving his personal and internal perspective or feelings about himself. Participant B was able to communicate what it was like to be him as his views were described but were not interrelated or self-examined (analyzed). The participant was able to describe his feelings in great detail, refer to his feelings as they occurred in a range of situations and provide personal reactions to specific feelings. Participant B related his reactions to his own self-image when he described himself as a "happy" person and wished his father would make the effort to reconnect with him. Therefore, participant B's level of emotional connection that he experienced during the study was heightened after being exposed to artwork.

5.2.5 Participant C

The third participant was a York University female student that did not have ASD and was part of the active art group (the participant was asked to think of a time she felt a certain emotion and to create a drawing based on that emotion). This participant was called "Participant C." On the art questionnaire that was administered at the beginning of the study participant C indicated that she was not good at drawing (she circled a one on the scale that was out of a ten) (appendix B). Similarly, she didn't think she was familiar with drawing or liked to draw as she selected a level one out of ten (appendix B). Likewise, participant C indicated that she didn't like to draw as a kid since she selected a one out of ten on the art questionnaire (appendix B). Overall, all of participant C's responses were on a level one out of ten which suggested that she didn't have an interest in art when completing the study. Participant C's GSR levels indicated a significant effect when she viewed both "fearful" and "sad" faces in comparison with her baseline results since they were lower.

Comparison Between Baseline and Post Drawing Task- Participant C

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	0.5611 μ S	0.4415 μ S	No significant effect
Happy	0.6064 μ S	0.5071 μ S	No significant effect
Surprise	0.5668 μ S	0.4198 μ S	No significant effect
Fear	0.5049 μ S	0.534 μ S	Significant effect
Sad	0.4673 μ S	0.8398 μ S	Significant effect
Disgust	0.5242 μ S	0.3392 μ S	No significant effect
Contempt	0.4949 μ S	0.314 μ S	No significant effect

Table 3

The table above (table 3) shows participant C scored a 0.534 during the post drawing task when viewing a “fearful” face which was higher in comparison with the baseline results of a 0.5049 (0.534 > 0.5049). Likewise, when participant C viewed the “sad” face after the drawing task, her GSR level was a 0.8398 which was higher in comparison with her baseline results of a 0.4673 (0.8398 > 0.4673). There was no significant result when participant C viewed anger, happy, surprise, disgust, and contempt faces since her GSR baseline levels were higher in comparison with the post drawing task levels (for example, when participant C viewed an “angry” face her baseline level was higher in comparison with her post drawing task level; 0.5611 > 0.4415). No minor effects were found for participant C when she completed the GSR and face task.

Therefore, participant C was emotionally aroused when viewing both “fearful” and “sad” faces

after completing the post-selection task. Next, participant C's art drawings (abstract and concrete) were analyzed to determine if the emotions she reacted to during the GSR and face task matched the emotions she felt while creating the drawings. The abstract drawing participant C created is shown below (Drawing 1). The drawing below is a representation of how participant C was emotionally feeling while explaining her drawing.



Drawing 1

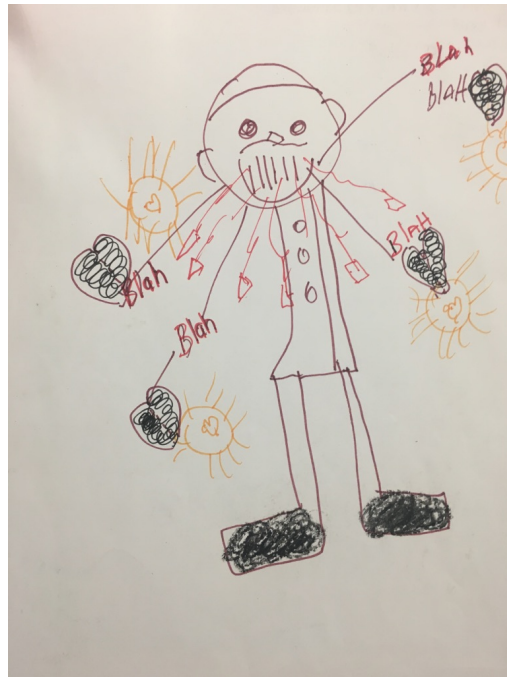
The picture above conveys feelings of both sad and fearful emotions which the participant further describes during the second interview session (Appendix B). The participant drew a picture of her heart using the colour black to convey how emotionally distressed she is feeling because of the negative treatment she is receiving from her husband. Participant C explained her drawing when stating “I guess the black is the center which is my heart. It’s about one person so it’s not a representation of other people and aspects. The colour black is saying this is how you are making my heart feel. The red is grieving and the yellow is how I would like my life to be. It’s like sunshine. The mouth is a damaging tool. It’s all over, it’s the mouth. It’s harming me.” The hurt within the participant’s voice was evident as she choked up when she explained the relationship she has with her husband. The participant described feeling “grief.” When she was

drawing she further explained “Yeah, I feel it’s almost like somebody has put so much pain and that’s where grief comes in. I see lost in him like he is so blinded he can’t see the way he is making me feel. I don’t know. I want happiness for other people but I’m okay if I don’t have it. I feel like nobody is listening to me while I’m grieving. I know I am rational but his lack of understanding makes me feel crazy. I am aware of my emotions and know that I am the rational one.” The participant confirmed feeling sad as she compared the relationship she has with her husband to “grieving” and not having anyone to listen or care for her. Although the participant is in a relationship she expressed feeling “alone.” It is evident that her desire to make other people around her happy stems from the lack of happiness in her life. The participant continued to explain the rest of the drawing. She focused on the red circle surrounding the participant’s black heart which represents her grieving. The red circles represent the pain she feels her husband has caused her. The participant chose the colour red because it represents hurt and conveys the degree of agitation she feels when speaking about her husband. It is important to note that the participant was very aware of her emotions and feelings when discussing the drawing.

Participant C claimed feeling frustrated when discussing the topic as it reminds her of how badly her husband treats her on a daily basis. When asked to share one thing that she would like others to know about her drawing she said “I want people to know that I was thinking about sadness, although I’ve been given all these colours to use. I chose to use dark colours. I want them to know that something is painful inside of it.” The participant connected the colours she used with the way she was feeling. It is evident that colours have mental and emotional effects on people as they may influence a person’s mental or physical state depending on how they personally connect themselves with a particular colour. In the participant’s case, the dark colours such as black and red depicted her feelings of sadness. The use of those colours spoke to the participant’s

need to express how she was feeling. It was as if the participant didn't need to further explain the pain she is experiencing since the colours (black and red) were sufficient and powerful enough to explain that to the viewer. For example, the colour red is usually associated with feelings of anger and danger. When viewing these colours people are more likely to experience reactions that pertain to an overwhelming feeling (an increase in heart rate). When the participant directed me towards the colour red within her drawing she was speaking rapidly and making co-speech gestures that articulated her agitation. Similarly, the colour black the participant used within her drawing is usually associated with feelings of sadness, mourning, evil, authority or having power. The participant explained that she used black to convey the "dark" place she is currently working to get out of because of her husband's mistreatment towards her. The colour black that she chose to use clearly depicted the amount of hurt she is facing on a daily basis. When asked to locate a particular area in her drawing that she felt most connected with, she chose the black area in the middle of her drawing. She said it connected her with how much hurt she felt from the argument that took place the night before with her husband. Participant C further described the connection she has with the black area within her drawing as she stated "when I came home I was looking forward to speaking with my husband about my day (spent at the university), but when I started speaking about my progress in school he quickly invalidated these joyful feelings I had." The symbol that represents invalidation are the two ladders on the left of the paper. One ladder is grey while the other one is red (colours the participant associated with sadness, grieving and hurt (arrows are coming out from his mouth and they are hurting the heart)). It is interesting to mention that a single colour the participant chose to use motivated her to open up about a situation she was not willing to share before analyzing her drawing out loud. The participant learned that when drawing her emotions on paper she felt relieved as if those feelings were

finally validated. Likewise, the second picture that participant C drew was a concrete picture that is based on geometric imagery and patterns to create a visual representation. The image (drawing 2) is a visual representation of the concrete drawing participant C created.



Drawing 2

The drawing above depicts feelings of fear as participant C further explains this during the second interview session (appendix B). The second drawing is a representation of the participant's messy relationship she has with her husband. The participant describes the man in the drawing as her "tormentor." She further explains "he is always talking and doesn't care how much essays you have to write. He never stops talking (participant pauses and starts to cry intensely). I want peace. The arrows are coming out from the mouth and it's hurting my heart. But regardless, I've included a little bit of yellow, I know I bring so much sunshine...I had to put that in. I feel like someone is tormenting me with their mouth and it's harming my heart." Participant C decided to discuss the same situation but described how the second picture made her feel "fearful." Particularly, the black lines coming towards the picture of her black heart

represent the fear she has when her husband constantly puts her down and makes her feel worthless. She knows that she's being the rational one in the relationship but her husband continues to manipulate her and convinces her that she is being irrational and crazy. When asked to speak about the feelings she felt while drawing the picture, participant C stated "a bit of fear." She fears that her husband is wasting his energy on making her feel bad for no logical reason. Participant C compares the way she feels to death, she explained "if we can't stop the death of our loved ones, then why are we wasting our energy on making others feel bad if it only harms us? We are so wasteful. I feel like somebody is wasting so much energy when I can be good with so much goodness. Time is not your friend. I see him messing with my head." Participant C clearly fears that her husband is wasting his life and time on useless ways to make her feel bad. It seems like the participant is in constant fear of the direction her relationship is heading as she uses words that refer to fear within her speech which include death, wasted energy and time not being her friend. In relation with the colours, participant C explained that she loved using the colour black within the drawing since that colour resembles how her husband makes her feel. When asked to speak about the yellow colour, the participant said it represents sunshine which is the small amount of hope that she still has for the future. She perceives herself as a happy person that wants to put others first before herself but doesn't understand why her husband wants to harm her and take away all the positivity she knows she has to offer. The repetitive patterns of scribbles around the heart area indicate the participant's constant battle she has to face with her husband. She explains that she is tired of feeling badly about herself. Her relationship with him is very toxic as he verbally abuses her which she represents through drawing a mouth that is shooting black coal in the shape of hearts in different directions. The black coal shaped like hearts are surrounded with small yellow suns that have little hearts inside of them. Those

represent herself trying to put some sunshine and giving others hope and happiness since she lacks that in her own life. The participant thought the task of drawing her emotions on paper helped her start talking about her feelings in a comfortable manner. She was able to open up and tell her story in a way that she personally constructed. In order to measure the level of communication participant C exerted in the second interview session, it was essential to compare the first interview session (recalling a drawing) to evaluate whether her level of communicating emotions increased after drawing. The participant shared limited information about her emotions when recalling the drawing in general as she focused on describing the coco tree. Participant C explained in detail the tall branches of the tree and the colourful yellow coco fruits that grow on the tree (the participant added that the back of the tree was rough). The content participant C focused on was very vague. It didn't appeal to her emotions but referred to the colour (yellow), texture (rough), objects (coco tree) and details (tall, long branches, etc) regarding the physical appearance of her drawing. However, when participant C was asked if she could remember the emotions she felt while drawing she said it was "dual sadness." The "dual sadness" came from remembering the hidden message behind the drawing and not being able to fully capture the way she was feeling visually. Participant C further explained the meaning behind her drawing when she said "Sadness came from the fruit itself. A lot of people would take them and smash them not taking into account that these are valuable things that shouldn't be smashed. It's like they were wasting them. I was really sad because people were throwing the fruits on the ground." Participant C made a lot of references to her inner feelings as her description regarding the way the coco tree was being mistreated was an analogy related to the relationship she has with her husband. The vocabulary participant C used to describe the mistreatment of the coco tree included terms she used to describe her toxic relationship which included smash, wasting and not

valued. Participant C was able to recall particular moments that made her feel sad which included drawing the branches of the tree as they were moving and looking at the tree and admiring its beauty. She justified why she felt sad when she stated “People were treating the coco tree badly. I also remember that I drew a little person trying to go up the tree. I thought—the beautiful tree was able to create fruit and coco. I guess it made me sad because I felt mistreated. I felt sad with it. Put all my thoughts into it so I was just more focused on you know ummmm, I guess I was seeing myself on it. Wanting to nurture it, but it was being so not respected and neglected.” The participant was fully invested in the drawing she was recalling since her sadness was depicted through a tree that she was able to connect with on a deeper level. She found herself within the tree. Her emotions were better understood when she described the sadness she feels for the tree as if she felt sorry for herself. The thought of her drawing caused the participant to exert intense emotion as she had her head down and looked concerned when recalling the drawing. When asked whether she experienced any new emotions while explaining the drawing, the participant continued to explore the way she felt as she continued to unfold the thoughts she had about her drawing. It was as if she was doing a self-exploration exercise with herself as she started to disentangle and understand the way she was feeling. An example of this is when participant C stated “I feel at the time I was naïve and I didn’t understand how to deal with the emotions that I was feeling, I’m from a culture that people don’t feel bad for plants. It shows me how I cared about something back then. I feel a little more happy now that I was trying to describe my feelings in a medium that I am not good at.” Participant C was projecting all of her inner feelings onto the drawing she recalled. This process allowed her to become emotionally sensitive as she recollected her feelings from the past and analyzed them to create meaning in the present moment. Participant C did not stop at communicating the emotions she

had regarding the picture she recalled but instead branched out and began discussing how she felt about different topics. For example, the participant discussed her feelings about her younger self, cultural differences and her caring personality. The conclusion that participant C reached was that she felt “happy” since she was able to fully understand herself through a medium that she thought she was not good at. The participant analyzed her thoughts through combining her perception of herself with the way she felt in the present moment when she stated “I’m a talker I express myself and I don’t do it this way. Recounting it I feel like I grew, but sometimes in the society that I’m from, talking is useless. They wouldn’t understand. I think it doesn’t matter, people from different cultures take in information differently. Just feeling frustrated, that it’s not being taken seriously so I’m trying different methods. I showed it to a couple of people it was my way of wanting them to see my point of view from a different perspective. It blows me away today that nobody wants to communicate.” Participant C was able to explore her feelings in a logical manner. One pattern that was spotted through interacting with participant C was that introspection was something she did while recalling her drawing. When recalling her drawing she became self-aware of her feelings and analyzed her own experiences. Likewise, when participant C was asked to recall a specific part of her drawing that she felt most connected to herself she used emotional appeal within her response when she stated “I see branches as things that expand. Although the roots grow from everything, you can identify the branches easily. I think when I was doing this I wanted to grow with it. It reminds me of my childhood growing up on an Island since I was forced to live with minimal resources I wanted to grow like the branches.” Therefore, the participant’s responses all portrayed high communication when she referred to her emotions. Furthermore, the experiencing scale was used to measure participant C’s level of emotional connection in both interview sessions to gain a better understanding of

whether she focused her attention on her inner feelings prior and after drawing. Although the participant was very communicative regarding her emotions during the “recalling a drawing” interview session, she scored higher on the second interview session (post drawing). During the first interview session, the participant scored a level four on the experiencing scale which is when the content is a clear representation of the speaker’s feelings, giving personal and internal feelings about herself (Klein, Mathieu, Gendlin & Kiesler, 1969). Likewise, feelings or the experience of events rather than the events themselves are the main focus (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant C didn’t only focus on the coco tree when explaining her drawing, however, she directed her attention to the way the coco tree made her feel relating it with her life experiences. Moreover, a level four is when the speaker communicates what it is like to be them and provide personal reactions to specific situations (Klein, Mathieu, Gendlin & Kiesler, 1969). The content is a story told from the person’s point of view while providing details of feelings, reactions and assumptions from that person’s personal perspective (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant C demonstrated the majority of elements within a level four on the experiencing scale. Likewise, participant C scored a level six on the second interview session which is characterized by the content being a synthesis of readily accessible, newly recognized and fully realized feelings and experiences to produce meaningful structures or to resolve issue (Klein, Mathieu, Gendlin & Kiesler, 1969). The material is very relatable since the participants are able to reflect on several past events (Klein, Mathieu, Gendlin & Kiesler, 1969). It is evident that participant C scored higher on the experiencing scale post drawing task since she was able to fully engage with her inner emotions. Therefore, participant C’s level of emotional connection that she experienced during the study was heightened after being exposed to artwork.

5.2.6 Participant D

The fourth participant was a York University female student that did not have ASD and was part of the active art group (the participant was asked to physically draw two art pieces). This participant was called “Participant D.” Participant D’s art questionnaire indicated that she could draw very well since she rated herself an eight out of a ten (Appendix B). Participant D indicated that she was familiar with drawing and art in general since she selected a seven out of a ten point scale. Likewise, the participant suggested that she likes to draw since she chose an eight out of a ten on the questionnaire. The participant noted that she strongly liked to draw as a kid since she selected a nine out of a ten on that question. In relation with participant D’s GSR results, a significant effect was found when the participant viewed both “surprised” and “fearful” faces in comparison with her baseline results since they were lower. For the purpose of this study, the GSR levels that showed a minor effect were not taken into account.

Comparison Between Baseline and Post Drawing Task- Participant D

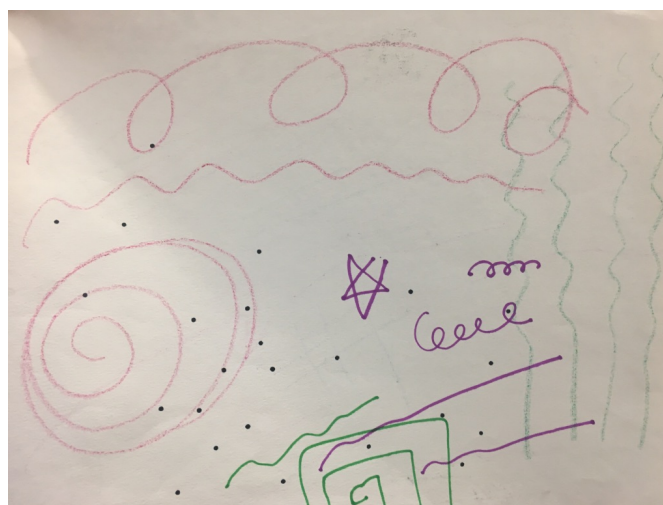
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	1.8434 μ S	0.8654 μ S	No significant effect
Happy	3.0865 μ S	2.3658 μ S	No significant effect
Surprise	2.4767 μ S	3.6939 μ S	Significant effect
Fear	2.0664 μ S	3.6267 μ S	Significant effect
Sad	1.6398 μ S	3.5391 μ S	Minor significant effect
Disgust	1.355 μ S	3.4004 μ S	Minor significant effect

Contempt	1.2546 μ S	3.2872 μ S	Minor significant effect
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Table 4

The table above (table 4) shows participant D scored a 3.6939 during the post drawing task when viewing a “surprised” face which was higher in comparison with the baseline results of a 2.4767 (3.6936 > 2.4767). Similarly, when participant D viewed the “fearful” face after the drawing task, her GSR level was a 3.6267 which was higher in comparison with her baseline results of a 2.0664 (3.6267 > 2.0664). However, there was no significant result when participant D viewed both angry and happy faces since her GSR baseline levels were higher in comparison with her post drawing task levels. Therefore, participant D was emotionally aroused when viewing both “surprised” and “fearful” faces after completing the post-drawing task. Participant D’s concrete and abstract drawings were analyzed next to find out whether the emotions she reacted towards during the GSR and face task matched the emotions she felt while creating the drawings.

The abstract drawing participant D created is shown below (Drawing 3). The drawing below is a representation of how participant D was emotionally feeling while explaining her drawing.



Drawing 3

The abstract drawing above depicts fearful emotions since the participant indicated feeling this way at different moments during the second interview session (appendix B). It is important to note that participant D's first language is not English and she struggled to articulate the meaning behind her drawing at certain moments during the interview session. The participant drew different shapes that represent certain emotions and situations she recently experienced. The pink circular spiral on the left represents mixed feelings as she feels her life is complicated at the moment which makes her feel a little bit worried as she stated "I have mixed feelings as I feel a little bit worried, it's complicated." The squared green spiral located at the bottom centre represents her feelings regarding the recent death of her father. She used green to represent growth as she believes he is watching down on her and has gone to a better place. The purple spirals positioned in the far right represent confusion, the participant is confused about what her life will look like next year and whether she is making the right decisions. The red (positioned at the top) and green spirals (positioned to the far right) represent confusion and complications. She felt particularly connected with the spirals because they represent how she is currently feeling about her life (confused about the future). The participant drew the purple star and black dots when she felt a little better because of expressing her emotions on the paper and communicating about it to the researcher (she thought the hand movements while drawing was soothing and felt less anxious). However, the participant did explain that she was unsure of what she was drawing at first which made her a little nervous. When the participant was asked what emotions she felt while drawing her picture, she stated "I felt anxious and confused since I recently lost my father when I visited my family during the summer. It might be because of that. I felt scared because he left us." The participant stated this while looking away and she appeared to have a worried expression on her face. The mixed feelings she manifests contribute to her overwhelming facial

expressions which included avoiding eye contact. Her hands were raised in front of her mouth and she was speaking in a low and monotone voice. When asked if she experienced any other emotions while explaining the drawing, participant D suggested she felt confused and worried since she was trying to make sense of what she drew. Participant D was asked to discuss a part of her drawing that reminded her of a particular experience and she responded, “I felt most connected with the spirals and coals. It reminded me of how confused I feel at the moment. I feel confused about my life and what I am going to do in the future.” The confusion participant D feels arises from two instances that seem to weigh heavy on her mind which include her father’s recent death and her education. Both these issues have resulted in feelings of confusion which has turned into fear of the unknown. When participant D was asked what is one thing that she would want someone to know when looking at her drawing for the first time she suggested, “I want to tell them about my emotions and the way I am feeling now. If possible, I would want them to know about my situation (father’s death) and that I am internally struggling with something.” The participant was trying to express her emotions in an open manner but it was clear that she was not giving detailed responses or disclosing personal information when she vaguely stated, “I am struggling with something.” Likewise, participant D was asked to discuss the second concrete drawing (Drawing 4). The image below is a visual representation of the concrete drawing participant D drew (appendix B).



Drawing 4

Participant D stated that the drawing above made her feel surprised when discussing it further during the second interview session. She drew an image of a girl reading a book under a tree (looking down at her book). The drawing made the participant feel at peace because to her the drawing represents a form of blocking out unpleasant and uncomfortable feelings and events she experienced. The participant further explained this when she said “I really want to have this type of lifestyle. I am in nature and I want to sit under the big tree and read my favorite books. I don’t want to think about anything at all that is uncomfortable and unpleasant.” While drawing, the participant felt excited because she wanted to depict a picture that represents something she is passionate about and longing to experience. When the participant was asked if she experienced any other emotions while explaining the drawing, she stated “I felt a little bit stressed out. Recently I’m thinking about life and death pretty much. So like if I die, I would want to become a tree. I was thinking to take a rest in this tree.” The tree represents life and death. While drawing the participant was thinking about life and death and has come to the conclusion that if she dies she wants to become a tree. The tree is a symbol of peace and is where the participant would like

to go. The tools participant D used that helped express her emotions the most was the watercolour paint. She chose to use watercolour paint because mixing the colours allowed her to express various emotions. Participant D blended the colours together to create darker and lighter shades when she wanted to depict different emotions. Participant D further described this when she stated, "For example, I used a lot of green. Darker green makes me feel comfortable and relieved and the blue one reminds me of the sea and then the sky---like "sigh" relaxed and calming feeling." The participant was surprised she was able to express this on paper as she described herself as a "closed off" person. The colours blue and green represent relaxation. She felt connected to these colours because it let her forget about her problems. When asked to explain a part of her drawing that reminded her of a particular situation, participant D stated "it reminds me that I need to take time out of my day to relax. I want to travel somewhere and relax. I know that I need to do this but looking at my drawing helped me remember how much I need this." Participant D was surprised that she decided to draw something relaxing since it made her realize how much she is in need of a break in her life. When asked what is one thing she would like people to know about the drawing, she stated "I want someone to know that I ummm, maybe that "I want to rest." It is evident from the participant's response that she is feeling overwhelmed with personal issues that she was unable to specifically discuss. However, participant D was able to share the way the drawing made her feel. She was very specific with her response as she wants to rest from the busy lifestyle she lives. When asked to locate a specific area in her drawing that she felt most connected with herself she selected the tree on the left and the blue and green colours. Participant D explained that these colours made her feel relaxed and put her at ease which is the emotion she has been yearning to feel. It is important to note that the participant expressed feeling a little more nervous and less comfortable sharing her emotions regarding the

concrete drawing in comparison with the abstract drawing. The participant's behaviour portrayed discomfort as she would constantly look away, speak in a low voice and giggle nervously when she did not want to fully answer a specific question during the interview session. Moreover, in order to measure the level of communication pre and post drawing, the first and second interview sessions were compared. During the first interview session (recalling a drawing) the participant briefly described her drawing as she stated, "It was about two girls that travelled back home for the holidays. They were wearing Korean traditional costumes. I remember I drew them playing on the ground and behind them there was a house and some big trees. I used watercolour to draw this picture." The participant described the scenery in general without alluding to specific parts that she felt connected to on a personal level. When asked which emotions she felt regarding the picture she briefly stated remembering "not feeling good" but fell short to explain why this was the case. The participant did mention that she would like people to feel "happy" when looking at the drawing. It is interesting to note that although participant D didn't feel good drawing this particular drawing, she still wants others to feel happy when looking at it. However, participant D didn't mention anything beyond feeling bad and wanting others to feel happy regarding her feelings which was very limited information. The level of communication when answering questions was not thorough since she provided quick and short answers. For example, when asked to think about a part of the drawing that made her feel connected with herself she stated "I think the colour red. That was the colour the girls were wearing." Her response did not provide information regarding why she felt connected with this colour or how it made her feel. The majority of her responses were vague and alluded to environmental elements. Therefore, participant D's level of communication was lower during the first interview session (recalling a drawing interview) in comparison with the second interview session with regards to expressing

emotions. To accurately measure her level of emotional connection she had during the interview session, the experiencing scale was used to capture this information. During the first interview session (recalling a drawing), participant D scored a level one on the experiencing scale. Some key characteristics of this stage are that the content and manner of expression is impersonal. This was evident when the participant would fall short in explaining why the external objects that she was referring to made her feel or were important in her personal point of view. She scored a level one because she was focused on external objects (ex. girls in the picture, colour red, etc.) and didn't discuss anything personal. The majority of the time the participant would discuss an external topic when referring to herself. Also, the participant discussed how others perceived her rather than how she perceives herself. It was clear the participant found it extremely hard to discuss deeper emotions. At certain moments, the participant would avoid topics that required her to express personal emotions through changing the topic or focusing on external content. However, during the second interview session (post drawing), the participant scored a level two on the experiencing scale. In this stage, the association between the participant and content is explicit. The participant is the central character in the narrative and her interests are clear. However, the participant's involvement does not go beyond the specific situation or content. For example, the participant referred to dealing with personal issues she would like to avoid but does not go beyond and describes these personal situations she is dealing with and how they have impacted the way she feels. All comments, associations, reactions, and remarks serve to get the story or idea across but do not refer to or define her feelings. When the participant was emotionally aroused, it was evident from her manner, not from her words. The participant's behaviour was very tense and uncomfortable. It seemed like she was hiding her problems and didn't want to disclose details about them. For example, every time she felt uncomfortable, she

would move her feet back and forth in a repetitive pattern and avoid eye contact to bring the conversation to an end. It seemed like she was going through a lot emotionally but still had her guard up and didn't want to be explicit about how she was feeling.

5.2.7 Participant E

The fifth participant was a York University female student that did not have ASD and was part of the active art group (the participant was asked to physically draw two art pieces). This participant was called "Participant E." Participant E's art questionnaire indicated that she was in between with regards to how well she could draw (selected a five out of a ten on the questionnaire). However, she indicated that she thought she was relatively familiar with art since she rated herself a seven on a ten point. Participant E indicated that she liked to draw since she selected an eight out of a ten. She also indicated that she strongly liked drawing as a kid since she selected a ten on the scale (appendix B). Furthermore, the GSR results indicated a significant effect when viewing both anger and happy faces in comparison with her baseline results which were lower. For the purpose of this study, the GSR levels that showed a minor effect were not taken into account.

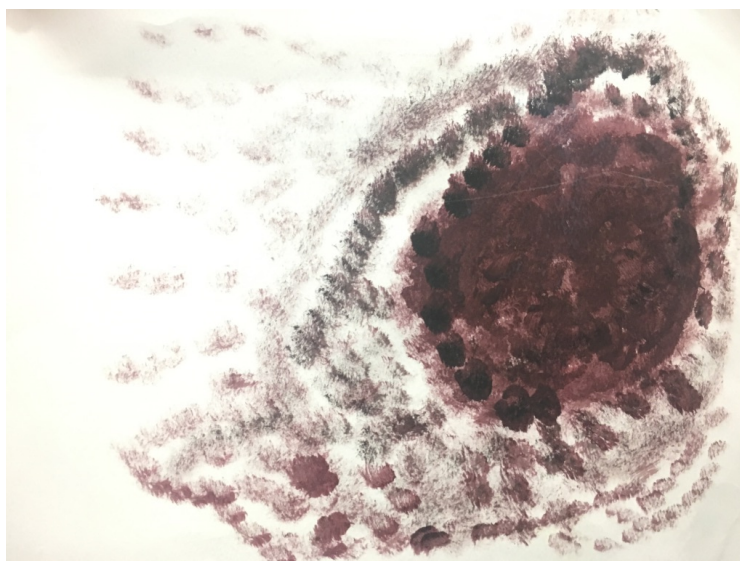
Comparison Between Baseline and Post Drawing Task- Participant E

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	2.2891 μ S	3.2763 μ S	Significant effect
Happy	2.8844 μ S	3.5488 μ S	Significant effect
Surprise	3.9025 μ S	3.7288 μ S	No significant effect
Fear	4.3661 μ S	3.4657 μ S	No significant effect
Sad	4.9419 μ S	3.6592 μ S	No significant effect
Disgust	2.7599 μ S	3.2024 μ S	Minor significant effect

Contempt	2.3275 μ S	2.8989 μ S	Minor significant effect
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Table 5

The table above (table 5) shows participant E scored a 3.2763 during the post drawing task when viewing the “angry” face which was higher in comparison with the baseline results of a 2.2891 (3.2763 > 2.2891). Likewise, when participant E viewed the “happy” face after the drawing task, her GSR level was a 3.5488 which was higher in comparison with her baseline results of a 2.8844 (3.5488 > 2.8844). However, there was no significant effect when participant E viewed surprise, fear and sad faces since her GSR baseline levels were higher in comparison with her post drawing task levels. It is clear that participant E was emotionally aroused when viewing both “angry” and “happy” faces after completing the post-drawing task. The abstract drawing participant E created is shown below (Drawing 5). The drawing below is a representation of how participant E was emotionally feeling while explaining her drawing.



Drawing 5

Participant E stated that the abstract drawing above made her feel angry as she further discussed these feelings during the second interview session. It is important to note that participant E's first language is not English which is why she struggled to articulate the meaning behind her drawing at certain moments during the interview session. The participant drew a large circle on the right corner of the page that was a dark brown and burgundy colour with some black mixed in as well. The circle extends towards the outside where it fades into feather and sponge like detailing scattered in a loose circular manner. The colour looks intense in the centre of the drawing but fades away as it extends outwards (the colour becomes lighter). Participant E further described her drawing when she stated "Well, I was trying to create a dot but it didn't look like a dot. It's an event I pushed in my unconscious mind because but it's always there." Participant E's drawing represents a difficult time in her life where she felt angry and depressed which were memories she attributed to when she lived back home. Since the participant was in first year, she related those feelings to the time she was in high school as these memories were still fresh in her mind. Participant E stated "It wasn't a good year. It was the year I was back home and some things happened that I really didn't like. I liked the colour but it has anger to it I think." The participant felt regret and anger when looking at the drawing. When asked if she felt any emotions while explaining the drawing, participant E felt regret and anger as she continued to discuss the drawing. The participant used dark colours such as burgundy, dark brown and black to depict her anger as these colours reminded her of the unpleasant feelings she went through at a point in her life. When asked to discuss a part of the situation that reminded her of a particular experience, the participant stated "Well, it was back when I was in Iran and the education system there is very different than here. During my final year I had to do a big test to get into university and I was put under a lot of stress that I kind of found someone that helped me reduce that stress

but that person wasn't who I thought he was. He lied to me and when I found out it was a big mess." The participant used black and brown to depict the hurt she is reminded of when she looks at the drawing. Participant E was willing to open up and share the experience that made her feel this way the longer she looked at her drawing. When the participant was asked whether she was willing to expand and further describe her emotions, she added more details regarding the "messy" situation she dealt with. Participant E stated "Well, I'm usually not a person that shows a lot of emotions but for this research I was like okay let's give it a shot. So I went into a relationship with a person that was much older than me. I was 18 and was still a kid. It was complicated. I didn't expect things like that to happen since when you are a child you think everyone is good. He lied to me which made it worse. He lied and didn't tell me that he was married which was messed up." Participant E felt like she was manipulated since the older man she got into a relationship was not loyal. This caused her internal stress as she felt mistreated and hurt. It was hard for the participant to open up and describe the situation that made her feel angry, however, looking at the drawing reminded her of the feelings she has gone through. She added "I learned that I am dark and twisty. This is something I would only tell my best friend since it's a dark part of my life that remains in my soul." Similarly, the second drawing participant E discussed was the concrete drawing (Drawing 6). The image below is a visual representation of the drawing participant E created (appendix B).



Drawing 6

The participant created a drawing that captured her feelings of hope, happiness and anger as she further described throughout the second interview session. The participant drew a picture of a girl dressed in a fancy dress. The girl's body is visible but her face is not included in the drawing. The girl is outlined in three different colours which include turquoise, blue and black. The blue and turquoise colours are outlined in a neat manner while the black colour has texture which was created using spiky brush strokes, rough edges and has a ridged outline. The participant described how she created the drawing when she stated "the middle kind of looks like a body but it doesn't. I think it was because I started there and I had something in mind that I wanted to draw but it didn't turn out. I wanted to draw a person but it didn't turn into a person so I changed the picture." It was clear from the participant's reaction that she did not plan on drawing something specific but as she kept discussing the drawing she noticed it was herself wearing the fancy dress. The dress symbolizes hope and happiness as she believes with time the pain she experienced (related back to the abstract drawing) will eventually fade and this creates a bit of happiness looking forward into the future. It was difficult to gather more information when speaking with participant E as she was not willing to further express how she was feeling and

seemed more closed off in comparison with the abstract portion of the interview session. Her drawing seemed to depict more content, but she would avoid the questions by focusing on other elements of the drawing which included colour and the shapes. At one point, the participant stopped answering the questions and stated, “the drawing means nothing,” however, after some time she continued to describe her emotions in relation to the drawing. Participant E stated, “the dark side of it is the depression and anger taking the hope inside of you, but you still have it. That feeling that you don’t know what to do...it’s that stage in between.” The hope inside of her is embodied through the picture of the girl wearing the dress and the blue and turquoise colours represent the small amount of hope she still has within herself to continue with her life. However, the colour black that is in between the blue is the depression and anger that still exists within her mind. The blue and turquoise outline of the drawing represents the hope and happiness the participant is wanting to exert but the spiky and rough black outline constricts those feelings which causes her confusion and tension as she is unable to relieve. The participant further explained how the drawing made her feel as she stated “you have things on your mind but you don’t know if you are able to make those things come true.” The participant seemed unsure of her drawing but that in itself opened up the opportunity for her to disentangle her drawing in a personal manner. The depression, anger and hope she attributed to her drawing gave her insight into the way she was feeling without realizing. When asked what emotions she felt while drawing her picture, participant E stated “kind of hope and depression at the same time and kind of feeling “blue” in the middle like that. Well, ummm I don’t know (**laughs**), I’m not sure. Ummm, the depression side is (thinking---deep breath) not sure. It’s like you tell me what I see in this picture?” It was interesting to observe the participant discover herself through analyzing her drawing as particular details she was unconscious of started to come out in an indirect and

subtle manner. Although she did not reveal all of her emotions, this task helped her think about her emotions and gain some insight into how she was feeling at the moment. Participant E enjoyed creating the concrete drawing in comparison with the abstract as she felt happy drawing about something that gave her some sense of hope. In order to measure the level of communication, it was crucial to compare the first and second interview sessions. During the first interview session (recalling a drawing) participant E was able to provide a detailed description of the drawing as she stated “the drawing included a person with a guitar who was standing at the back and two people were dancing. It was Spanish dancing. It had a red and black (burgundy) background and the drawing was made out of triangle shapes to give the face of the dancer structure. Although this was a detailed description, the participant did not mention specific feelings she had when recalling the drawing. Likewise, when asked what she would like someone to know about her drawing she did not give a specific answer but suggested “I want them to know it didn’t turn out good.” The participant answered in a very vague manner as her answer didn’t include any personal connections with herself. When asked to recall a specific part of her drawing that she felt most connected with herself she wasn’t able to locate an area but thought the shapes of the triangles were symmetrical and interesting. Therefore, her level of communication was lower during the first interview session in comparison with the second interview session. To measure her level of emotional connection she had with herself during the interview session, the experiencing scale was used to reveal this information. During the first interview session (recalling a drawing), participant E scored a level two on the experiencing scale which is when the association between the speaker and the content is explicit. The speaker is the central character in the narrative and her interests are clear (Klein, Mathieu, Gendlin & Kiesler, 1969). However, the speaker’s involvement does not go beyond the specific situation or

content (Klein, Mathieu, Gendlin & Kiesler, 1969). All comments, associations, reactions and remarks serve to get the story or ideas across but do not refer to or define the speaker's feelings (Klein, Mathieu, Gendlin & Kiesler, 1969). This was clearly demonstrated when participant E described the way her drawing looked without including any information regarding how she felt. Therefore, the majority of information that participant E discussed was abstract and general as she did not reveal her feelings implicitly or explicitly. On the other hand, during the second interview session participant E scored a level five on the experiencing scale. This stage is characterized by the content being a purposeful exploration of the speaker's feelings and experiences. Participant E demonstrated this during the second interview session when she was able to think about how the drawing made her feel and suggest that hope is within her but the anger and depression are constricting her from fully being happy. A level five is also characterized by two components. The speaker must pose or define a problem or proposition about himself explicitly in terms of feelings. The problem or proposition may involve the origin, sequence or implications of feelings or relate feelings to other private processes. In addition, the participant must explore or work with the problem in a personal way. Participant E discussed feeling stressed because of a bad relationship that she was involved in. She was able to state the problem clearly and give references to her inner feelings. Moreover, participant E was able to work with the problem in a personal way as she understood how her past relationship has impacted her in a negative way and she has learned a lot from that experience (ex. not to trust everyone). The participant was able to come up with a practical solution to solve her problem which was to hang onto some hope that time will heal. Therefore, the participant showed the majority of elements to receive a level five on the experiencing scale. It was clear that participant

E scored higher on the experiencing scale during the second interview session in comparison with the first interview session (recalling a drawing).

5.2.8 Participants Clinically Diagnosed with ASD Data

A total of five participants that were clinically diagnosed with ASD were included in this study. The participants were labelled using letters from F to J to identify their data. In this group, three of the participants were male and two were female.

5.2.9 Participant F

Participant F was a York University male student that was clinically diagnosed with ASD and was part of the active art group (the participant was asked to physically draw two different art pieces). Participant F's art questionnaire indicated that he perceived himself good at drawing since he selected a seven out of a ten on that question. Likewise, participant F suggested that he is familiar with art in general as he indicated a six out of a ten on the questionnaire. However, the participant chose a four out of a ten when asked how much he liked to draw. The participant noted that he did not enjoy drawing as a kid since he selected a three out of a ten on the art questionnaire. The participant's GSR levels were analyzed next. The results indicated a significant effect when participant F viewed both "contempt" and "disgusted" faces in comparison with his baseline results since they were lower.

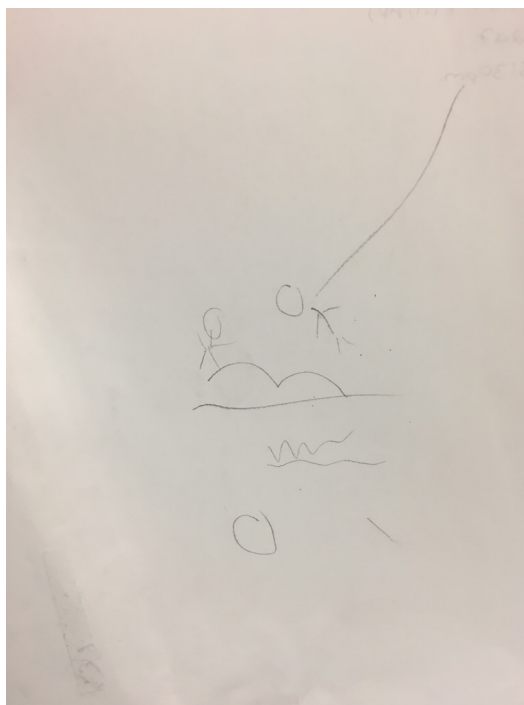
Comparison Between Baseline and Post Drawing Task- Participant F

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	1.9972 μ S	2.5733 μ S	Minor significant effect
Happy	2.7351 μ S	2.6533 μ S	No significant effect
Surprise	3.166 μ S	2.982 μ S	No significant effect

Fear	2.9302 μ S	3.2724 μ S	Minor significant effect
Sad	3.1595 μ S	3.8072 μ S	Minor significant effect
Disgust	3.1573 μ S	4.4981 μ S	Significant effect
Contempt	3.3377 μ S	4.4216 μ S	Significant effect

Table 6

The table above (table 6) suggests participant F scored a 4.4981 during the post drawing task when viewing the “disgust” face which was higher in comparison with the baseline result of a 3.1573 (4.4981 > 3.1573). Similarly, when participant F viewed the “contempt” face after the drawing task, his GSR level was a 4.4216 which was higher in comparison with his baseline result of a 3.3377 (4.4216 > 3.3377). However, no significant effect was found when participant F viewed both the happy and surprised faces since his GSR levels were higher in comparison with his post drawing task levels. It is evident that participant F was mainly emotionally aroused when viewing both the “contempt” and “disgust” faces after completing the post-drawing task. The first abstract drawing participant F created is shown below (Drawing 7). The drawing below is a visual representation of how participant F was emotionally feeling while explaining her drawing. It is interesting to note that participant F’s GSR levels indicated a minor effect when he viewed angry, fearful and sad faces (appendix B). The participant referred to these emotions when elaborating on his drawings.

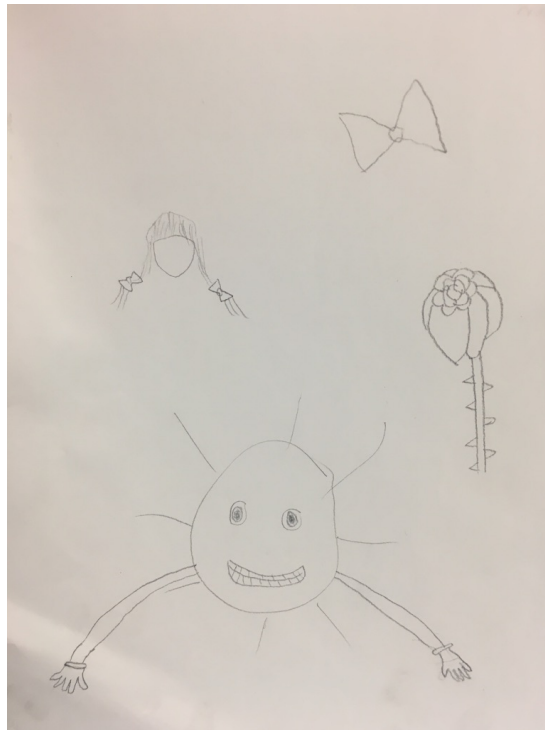


Drawing 7

Participant F created a drawing that depicted his feelings of disgust, contempt, anger, fear and sadness which he further alluded to during the second interview session. Although the participant was asked to create an abstract drawing, some parts of his drawing included concrete objects. The participant drew a picture of separate objects that intertwined in a loose manner. The drawing was positioned near the middle right of the page and was created using an HB pencil. Participant F drew two stick figures facing each other. The stick figure on the right is being pulled away from the other stick figure using a rope and underneath them is a dump. Below this drawing is a short squiggly line with another straight-line underneath it. Below that drawing, participant F created a short slanted mark on the right side of the paper and on the right he created a circle. Each section of the drawing represented a crucial time in participant F's life that he wanted to share. Participant F stated "I guess I will share what I was thinking of when I was drawing these individual parts. I drew the person and a bumpy road because I was thinking about a walk I took with someone that meant a lot. Then I thought about the time my dad gave me a black eye. Everything else was me thinking about the black eye. I drew a stick figure and then I

drew a squiggly line and then a less squiggly line. Then I drew a circle and then a line. Sorry, abstract art is not my thing.” While looking at his drawing and explaining the individual parts, participant F was able to directly open up about personal topics that were on his mind. While drawing his picture, the participant felt nostalgia and anger at the same time. He referred to his dad right after discussing feeling angry as he stated, “If my dad tries to lay a hand on me in the future I would fight back because I am not weak anymore. Nobody can touch me anymore.” The participant’s voice became stronger and louder when stating this as the level of anger and frustration within him was apparent. His behaviour shifted when stating this as he cuffed his hands and clutched his teeth. Participant F explained this happened when he was in grade four. After that incident his mother divorced his father so he wouldn’t have to see him anymore. The participant expressed how disgusted he felt when his father physically abused him as he did not understand the logic behind his actions. The most prominent story that participant F was willing to discuss was the relationship he had with his father which shows he is still deeply affected by this situation. When asked if he experienced any other emotions while explaining his drawing, participant F stated “I feel angry because of my dad (participant paused). Sorry, I don’t really talk a lot...I’m emotional I guess.” Participant F confirmed feeling angry at the situation. It was interesting to note that he was fully aware of his emotional state but needed some time to think about what to say when he paused during the conversation. Although the participant mentioned that he doesn’t talk a lot it was clear that he was trying to convey his situation and further describe why he felt certain emotions at the time. When asked what tools helped him express his emotions the most he mentioned, “I should’ve used paint. I feel like I would’ve gotten a lot more on the paper. If it was paint it would’ve made more sense but because it was pencil it makes no sense at all.” Although the participant indicated not being able to make sense of his drawing, he didn’t realize the amount of emotional response and discussion he contributed by merely looking at his drawing. When asked to discuss a part of a drawing that reminded him of a particular experience, participant F indicated that the stick figure reaching out (the one on the left)

reminded him of himself reaching out towards his friend but failed to catch up to him as he was dragged by the rope upwards. The participant felt “freaked out” because he wasn’t aware of the amount of meaning conveyed within his drawing. Participant F stated “Is this what happens when you think of an emotion? Does an image just come together?” Participant F seemed unaware of the emotional tie he could make when looking at his drawing. It was not until he related his drawing with his friend was when he felt “freaked out” since he was able to attribute personal meaning within his drawing. When asked to locate a particular area in his drawing that he felt most connected with himself he mentioned the little stick figure with the string attached. Participant F explained that he lost a lot of friends because he was separated from them when he started high school. He mentioned feeling sad as he missed his friends and he was not able to make new ones. Participant F explained that he’s not interested in people and doesn’t believe in forcing relationships. A reoccurring theme that participant F tended to circle around was dealing with separation. He mentioned being separated from his abusive father and having to leave his close friends. Participant F mentioned feeling sad since these instances have impacted the way he perceives people today. From these experiences, participant F has come to the conclusion that he is not interested in people. However, when discussing moving away from people he cared about, this brought him a lot of sadness. When asked how he was feeling sharing his emotions participant F stated “Sad. I’d say my life isn’t the best I have to admit but I’m dealing with it. I’ll get over it soon. I find at times when I talk about emotions I can’t seem to find solutions. The feelings get stuck with me in my head and then a situation that I wasn’t currently thinking about is stuck with me.” Participant F was able to use his drawing to further discuss his emotional state in a descriptive and detailed manner. He was able to give insight into how he deals with his emotions and why he finds it hard to talk about his emotions. Participant F’s drawing was used as a mechanism to communicate his emotions in an indirect and less intrusive manner. Similarly, participant F was asked to discuss his second concrete drawing (Drawing 8). The drawing below is a visual of the concrete picture participant F created (appendix B).



Drawing 8

The drawing above conveys feelings of contempt and sadness that participant F further described throughout the interview session (appendix B). The participant drew four individual objects which included a picture of a smiling sun, a hair bow, flower with thorns and an outline of a girl's head with braids from each side. Participant F further described his drawing when he stated "I was happy that I was able to draw the hands of the sun. I know it's not perfect or realistic, but I thought it was decent. The rose looks bad but if I had a real rose it would've looked better. I didn't draw a body for the girl's head but I like how the hair and face look." The participant focused on the way his drawing looked like when asked to discuss his picture and disregarded the reason for creating the images he included. Although he focused on the appearance of his drawing, this provided information on the level of awareness he has for wanting to appear presentable. For example, participant F mentioned his drawing "would've looked better," which was his way of justifying his abilities. When asked what emotions he felt while drawing his picture he stated "I have the desire to feel happy so I tried drawing happy things. The sun

reminds me to be a better person. So many people are cynical and my mom thinks that humans are terrible, but I don't. There is a lot of things to love in the world and just because everything looks childish it doesn't mean it isn't worth your time." The participant further described that he felt horrible when drawing the flower because it reminded him of a time he was trying to impress a girl and wanted to give her a flower he made but failed to create it out of paper. It was interesting to note that although the participant drew the "happy" sun because he wanted to feel happy, when speaking about it he revealed his true inner feelings which revolved around the disappointment he felt within himself as he was unable to impress the girl with the rose. When analyzing his responses it is evident participant F felt contempt as he seemed to attribute his worth by the quality of work he is able to produce and from the responses of others. Participant F confirmed this when asked what emotions he experienced while explaining his drawing as he stated "sadness, disappointment and a feeling of failure. I didn't feel negative emotions while drawing but now I feel I am reliving my failure of not being able to do the rose. That's probably the main reason." Participant F admitted feeling "sad" and disappointed after analyzing and describing his picture in detail. Although he didn't feel negative emotions while drawing his picture, once he started talking about the picture he realized it was about a negative situation. His drawing facilitated his understanding of the emotions he felt as he was able to discover a quality (the need to impress others) he possessed from a situation he initially thought didn't have a lot of meaning. When asked if his drawing reminded him of a particular experience he stated, "the braids remind me of a friend I met for coffee and she had ugly braids and I remember judging her as I was thinking to myself why she had her hair that way." Although his response did not reveal a lot of content, his answer revolved around "judging" others which was a reoccurring theme throughout the interview session as he started by judging himself and his abilities. Initially, it seemed like participant F did not share significant information, however, when connecting the information he provided it was clear that his drawing allowed him to express emotions he wasn't aware he had. The process of drawing and sharing information about his

drawing turned into a self-discovery exercise as he was able to communicate his emotions and gain a sense of understanding about himself. Likewise, when participant F was asked how he felt sharing his emotions he stated “I feel lost. I feel lost thinking about the things I drew. They are things that don’t mean anything to others but to me they mean a lot. I guess when something moves you it moves you.” Participant F was able to bring meaning into the individual objects he incorporated within his drawing and confirmed that they symbolize something meaningful within his life as he connected it with his inner emotions. To measure the level of communication, the first and second interview sessions were analyzed to compare when participant F stated more information regarding his drawing. During the first interview session (recalling a drawing) participant F briefly provided information regarding the drawing he recalled as he stated “I tried to draw a happy comical mask and I wanted to get it right. I think it was good and I put a lot of work into it. It had a lot of shadows.” The description included information about the appearance of the drawing but limited information about his emotions was included. The participant mentioned feeling “proud” of himself for creating the drawing but didn’t express anything else beyond that description. When asked what is one thing he would like others to know about his drawing his response was strictly descriptive as he mentioned wanting others to know that he is not a good artist since it was his first time drawing. The participant was unable to recall a specific area that he felt most connected with himself but he did indicate noticing the human characteristics within the mask such as the eyes, mouth, outline of the head and the emotion the mask was conveying. Participant F answered in a very vague manner as he didn’t include any personal connections with himself. However, when participant F was asked how he felt sharing his emotions, he mentioned feeling sad since this past year his girlfriend did not like his drawings he showed her although he worked hard on creating them. He felt disappointed with himself and sad at the same time. This was the only time that participant F referred to his feelings as he was able to relate his drawing with feelings of sadness and disappointment. Therefore, participant F’s level of communication was lower during the first interview session in

comparison with the second interview session. To measure his level of emotional connection he had with himself during the interview session, the experiencing scale was used to capture this information. During the first interview session participant F scored a level two on the experiencing scale. A level two is when the association between the speaker and content is explicit and the speaker is the central character in the narrative (Klein, Mathieu, Gendlin & Kiesler, 1969). Similarly, a level two is when the speaker's involvement does not go beyond the specific situation or content (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant F demonstrated this when he focused on explaining not being a good artist but wanting others to know he tried his best. Moreover, all comments, associations, reactions and remarks served to get the story or idea across but do not refer to or define the speaker's feelings (Klein, Mathieu, Gendlin & Kiesler, 1969). For example, participant F focused on describing his drawing of the mask but did not relate it back to the way it made him feel. Furthermore, a level two is when the content is a self-description that is superficial, abstract and generalized (Klein, Mathieu, Gendlin & Kiesler, 1969). No reference is made to the speaker's feelings or internal perspective. Likewise, participant F's ideas, attitudes, and opinions describe him from an external perspective as he perceives himself from the outside (Klein, Mathieu, Gendlin & Kiesler, 1969). In contrast, participant F scored a level five during the second interview session on the experiencing scale. This stage is characterized by the content being a purposeful exploration of the speaker's feelings and experiences. Participant F demonstrated this during the second interview session when he referred to the desire to be happy but feels like he can't since he has been separated from his friends. A level five is also characterized by two components. The speaker must pose or define a problem or proposition about himself explicitly in terms of feelings. The problem or proposition may involve the origin, sequence or implications of feelings or relate feelings to other private processes. In addition, the participant must explore or work with the problem in a personal way. Therefore, participant F showed the majority of elements to receive a level five on the experiencing scale. It was clear that participant F scored higher on the experiencing scale during

the second interview session in comparison with the first interview session (recalling a drawing). Lastly, since participant F was part of the ASD group, he was asked to complete “the face task” questionnaire to ensure he was able to identify the seven universal faces (appendix B). Participant F was able to identify all seven faces with the corresponding emotion. However, participant F did mention that he didn’t feel a sense of sympathy towards the faces he viewed before completing the drawing task (GSR and face task prior to drawing). However, participant F stated that after engaging within the artwork he felt more sympathy for the faces he observed during the GSR and face task.

5.2.10 Participant G

The second participant was a York University male student that was clinically diagnosed with ASD and was part of the active art group (the participant was asked to physically draw two pictures). This participant was called “Participant G.” The art questionnaire was analyzed to determine the level of participant G’s artistic ability. Participant G indicated he was relatively good at drawing when he indicated a seven out of a ten on the art questionnaire. Likewise, participant G indicated being very familiar with drawing and art in general as he selected a ten out of ten. He also indicated that he strongly enjoys drawing as he selected an eight out of a ten on the questionnaire. Moreover, participant G indicated that he strongly liked drawing as a kid since he selected a ten on the scale. Participant G’s GSR levels indicated a significant effect when he viewed the “sad” face compared with his baseline results which were lower. No minor effects were found for participant G when he completed the GSR and face task.

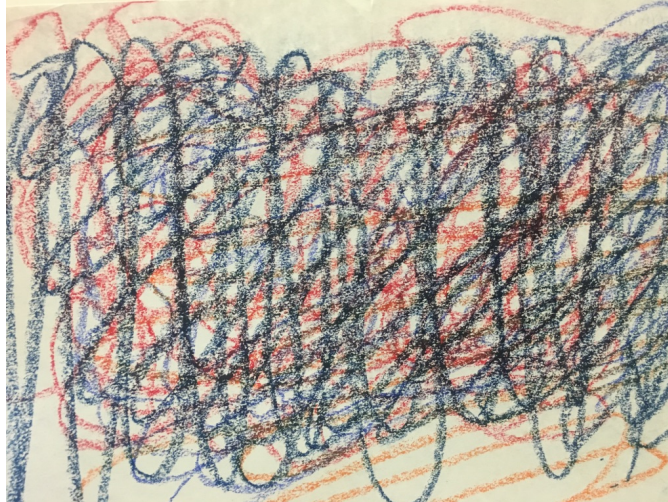
Comparison Between Baseline and Post Drawing Task- Participant G

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	5.3743 μ S	2.3094 μ S	No significant effect
Happy	1.1262 μ S	4.0649 μ S	Significant effect

Surprise	2.7692 μ S	0.9514 μ S	No significant effect
Fear	1.8801 μ S	0.7647 μ S	No significant effect
Sad	0.6204 μ S	0.865 μ S	Significant effect
Disgust	1.3004 μ S	0.8762 μ S	No significant effect
Contempt	4.2632 μ S	1.9373 μ S	No significant effect

Table 7

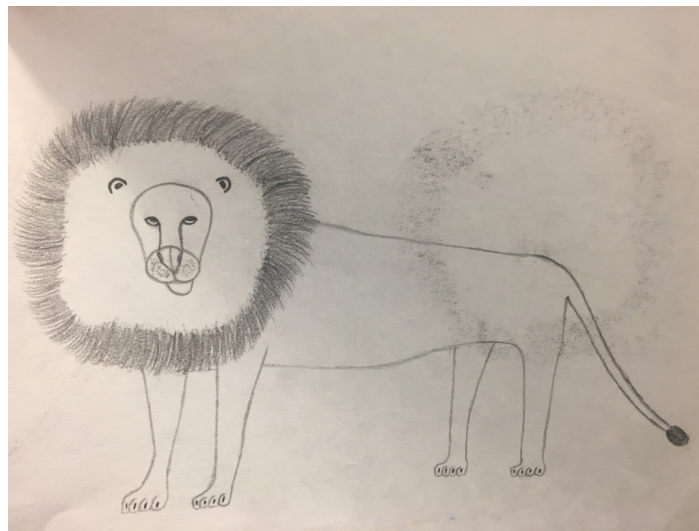
The table above (table 7) indicates participant G scored a 0.865 during the post drawing task when he viewed the “sad” face which was higher in comparison with his baseline results of a 0.6204 (0.865 > 0.6204). Similarly, participant G scored a 4.0649 during the post drawing task when he viewed the “happy” face which was higher in comparison with his baseline results of a 1.1262 (4.0649 > 1.1262). However, no significant results were found when participant G viewed angry, surprised, fearful, disgusted and contempt faces since his GSR baseline levels were higher in comparison with his post drawing task levels (for example, when looking at the “angry” face participant G scored a baseline of a 5.3743 which was higher in comparison with a 2.3094 post drawing task). Participant G’s abstract and concrete drawings were analyzed next to find out whether the emotions she reacted towards during the GSR and face task matched the emotions he felt while creating the drawings. The abstract drawing participant G created is shown below (Drawing 9). The drawing below is a representation of how participant G was emotionally feeling while explaining his drawing.



Drawing 9

The drawing participant G created depicted his feeling of sadness as this was revealed during the second interview session. The participant drew a picture of various types of lines all crossing over in different directions and interconnected in a random manner. Participant G used different colours of oil pastels such as black, red, dark blue, orange and blended purple to convey different feelings he went through while drawing the picture. When asked to discuss the drawing, participant G stated “I was very stressed during certain points of my life. I didn’t have good coping strategies and went through a lot of pain.” The participant was able to explicitly relate the drawing to a general time in his life. He mentioned feeling frustrated and sad when looking at the drawing as it reminded him of those times. When asked to discuss a part of a drawing that reminded him of a particular experience, participant G stated “I think where all the colours mix in together and all the lines come in reminds me of the time I felt helpless (covers face). It looks complicated.” It was hard for the participant to open up as he seemed very cautious before sharing anything that was personal during the interview session. When asked what is one thing he would like others to know about his drawing, participant G suggested that he would like people to know that dealing with his emotions can be complicated at certain times, (looks down) but that he is capable of expressing the way he feels. He added that black is a dark colour and it reminds him of the dark times within his life. When asked to further describe these dark times

the participant did not want to get into detail. When asked to locate a specific area that he felt most connected with himself he chose the colour red since it's a colour that he associates with being positive and gives him a sense of calmness. After completing the first set of questions for the abstract drawing, the participant added that he learned he is an emotional person since he was willing to show his emotions and talk about them. He further stated "I don't usually talk about my emotions so this task made it easier." It is interesting to note that although participant G did not describe his emotions in full detail, he personally felt that he shared more than he usually would've had he not participated in the drawing task. Likewise, participant G was asked to discuss the second concrete drawing he created (Drawing 10). The drawing below is a visual representation of the concrete picture participant G created (appendix B).



Drawing 10

The drawing above conveys feelings of happiness that participant G further described during the second interview session (appendix B). The participant drew a detailed picture of a lion in the center of the page. The lion's mane is the focus of the drawing as participant G made it big and visible. Participant G used pencil to create the image and shaded in some areas to put emphasis on them. When asked to discuss the drawing participant G stated "I decided to draw a lion

because I grew up drawing a lot of animals at a young age. Anytime I see a lion I feel confident and courageous because it's a symbol of courage. It makes me feel happy and helps me remain positive when I look at the lion, and it also has to do with the fact that my zodiac symbol is a leo." Participant G connected with the lion on a personal level as he attributed himself with the positive characteristics a lion possesses. Participant G's drawing helped him discuss the way he perceives himself, strong and courageous, which make him feel happy. He also added that looking at his drawing makes him feel resilient and calm. When asked to discuss a part of the drawing that reminded him of a particular experience he suggested "My favorite animal is a lion and so it reminds me of the countless hours I spent as a child drawing. Those were the happy moments that I remember in my childhood. I remember always feeling like I've achieved or accomplished something after drawing lions. I want to be a vet in the future." The participant was able to connect feelings of accomplishment and achievement when solely looking at the drawing. The participant added that through drawing the lion he noticed that he was able to express his emotions using different ways without having to show them but can express them in physical ways (creating the drawing). Likewise, when asked to locate a particular area that he felt most connected with himself he stated "I think the eyes because I remember staring into them and always feeling a shiver down my spine. Growing up my dad told me never to stare into their eyes because it's a threat, but I always did and got away with it. I feel more connected with lions when I look into their eyes." Participant G was looking down at the ground while explaining this part of his drawing. Although it was difficult for him to maintain eye contact he mentioned his ability to look into the eyes of the lion to form a bonding connection which resembles his yearning for a close relationship with others. Participant G confirmed this when he suggested "I wish people could see this emotional part of me because I usually don't talk about

how I feel.” To measure the level of communication, the first and second interview sessions were compared to find out when participant G shared more information regarding his drawing. During the first interview session (recalling a drawing), participant G provided some information regarding his feelings as he mentioned feeling “happy” but didn’t further explain why he feels this way in a personal manner. Likewise, when asked whether he felt a certain emotion while recalling the drawing, participant G was unable to provide a specific answer to that question. Furthermore, when asked to recall a part of his drawing that he felt most connected with himself, participant G was also unable to recall anything in particular. Therefore, participant G’s level of communication was lower in comparison with the second interview session (appendix B). In order to accurately measure participant G’s emotional connection he presented during the interview session, the experiencing scale was used to gather this information. Participant G scored a level one during the first interview session (recalling a drawing). A level one is characterized by the speaker telling information in an explicit manner (Klein, Mathieu, Gendlin & Kiesler, 1969). The speaker presents generalized or detached accounts of ideas without making the content personal (Klein, Mathieu, Gendlin & Kiesler, 1969). Moreover, the speaker is connected to the content in some way but the association is not made clear (Klein, Mathieu, Gendlin & Kiesler, 1969). For example, when participant G was asked to discuss his drawing his answer was general as he connected drawing a lion with feeling “emotions” that were not explicitly listed. The participant’s attention was focused on external events and not his own personal feelings. Moreover, his manner of expression was remote and at times he refused to participate and answer the questions presented. For example, when asked to comment on questions 1 b) and 5, the participant did not answer those particular questions. In contrast, participant G scored a level three on the experiencing scale during the second interview session

(post-drawing). A level three is characterized by the content being a narrative or description of the speaker in external or behavioural terms with added comments on his feelings or private experiences. Participant G demonstrated this when he mentioned enjoying drawing lions and added that it makes him feel happy. In addition, participant G mentioned his motives, private perceptions and assumptions, however, these were limited to the narrative he was discussing with no information on his personal feelings. Lastly, participant G’s “face task” questionnaire was analyzed and revealed that he was able to identify all seven universal faces (appendix B).

5.2.11 Participant H

The next participant was a University of Toronto male student that was clinically diagnosed with ASD and was part of the active art group (the participant was asked to physically draw two different art pieces). Participant H’s art questionnaire revealed that he doesn’t believe he can draw well since he selected a three out of a ten on the scale. Likewise, participant H indicated that he is somewhat familiar with drawing and art in general as he selected a five out of ten. Furthermore, participant H indicated that he doesn’t like to draw since he selected a three out of a ten on the questionnaire. Lastly, participant H selected a four out of a ten when asked whether he liked drawing as a kid. Next, participant H’s GSR levels indicated a significant effect when viewing the “happy”, “sad” and “disgusted” faces in comparison with his baseline results which were lower.

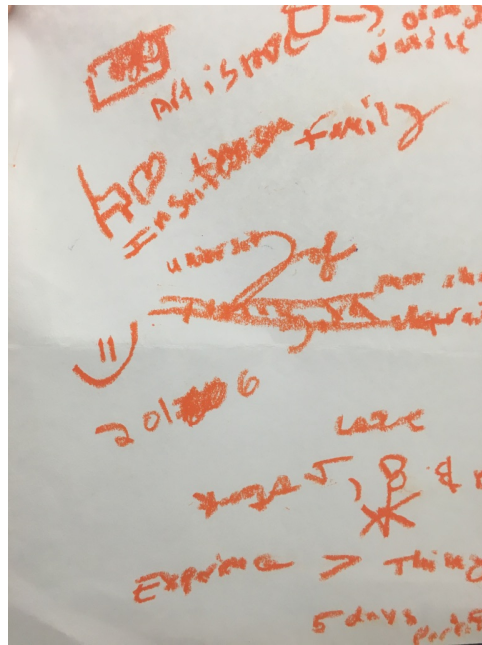
Comparison Between Baseline and Post Drawing Task- Participant H

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	0.0094 μ S	1.5743 μ S	Minor significant effect
Happy	0.0681 μ S	1.6556 μ S	Significant effect

Surprise	0.0396 μ S	1.6492 μ S	Minor significant effect
Fear	0.0399 μ S	1.6223 μ S	Minor significant effect
Sad	0.0388 μ S	1.6643 μ S	Significant effect
Disgust	0.1023 μ S	1.6531 μ S	Minor significant effect
Contempt	0.1017 μ S	1.6519 μ S	Minor significant effect

Table 8

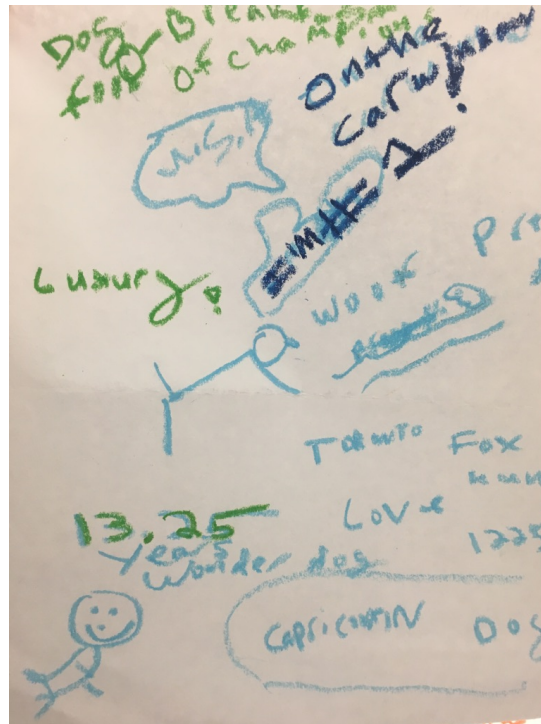
The table above (table 8) suggests participant H scored a 1.6556 during the post drawing task when he viewed the “happy” face which was higher in comparison with the baseline results of a 0.0681 ($1.6556 > 0.0681$). Likewise, participant H scored a 1.6643 after the drawing task when he viewed the “sad” face which was higher in comparison with his baseline result of a 0.0388 ($1.6643 > 0.0388$). It is important to note that participant H’s GSR post drawing levels were all higher than his baseline levels, however, for the purpose of this study the two highest scores were taken into account. It is clear that participant H was mostly aroused when he viewed the happy and sad faces after completing the post-drawing task. The drawings were analyzed next to determine whether the emotions participant H reacted towards during the GSR and face task matched the emotions he felt while drawing his picture in the post-drawing task. The first abstract drawing participant H created is shown below (Drawing 11). The drawing below is a visual representation of how participant H was emotionally feeling when discussing his drawing.



Drawing 11

Participant H created an abstract drawing that depicted his feelings of happiness which he further described during the second interview session. Although participant H was asked to create an abstract drawing, he included concrete objects alongside words to portray his feelings. This was interesting to note since participant H was fully aware of what a concrete drawing looked like but mentioned wanting to express himself through the method that he chose (using words and concrete objects in both drawings). The participant drew a picture of separate objects, words and symbols that intertwined in a loose manner. Participant H used the colour orange to depict his feelings of joy and happiness. When asked to discuss his drawing he mentioned it was about the time he attended an art fair in central London, England in 2016. He mentioned it was a “special” time in his life since he was spending time with his dad and two family friends. Participant H mentioned it being a life changing experience because he was able to see family which is an important part of his life. In relation to his feelings, participant H mentioned feeling happy for the entire visit. He also felt relaxing since he was in his element and around kind people that he

is comfortable with. When asked if he felt any other emotion while explaining the drawing, participant H mentioned feeling excited for the future because the drawing reminded him of how much he values keeping close family ties. When asked to discuss a part of the drawing that reminds him of a particular experience, he focused on an external environmental detail when he stated “I had really good food. Salmon on a bagel with cream cheese. I was at the University of York, and this is the train because I took the train to get there, I am really fond of family and the restaurant that I went to was an old place and it was liked by many.” The participant recalled a minor detail that made him feel happy. When participant H was asked to discuss one thing that he would like people to know about him when looking at his drawing he mentioned “I would like people to know that it’s important to have experiences rather than material objects, especially if these people have made a profound impact for the better.” Participant H continued to express the fulfillment he gets from family as he mentioned that although he doesn’t see these family members often, he still enjoys being with them and urges others to keep close family ties. When asked to locate a part of his drawing that he felt most connected with himself, participant H selected the England flag as it reminds him of his family members since the majority live there. He added that he feels happy when looking at that area as it reminds him of good memories he had with his family members. When participant H was asked if he learned anything from this activity he stated “Yes, I realized that art can be a very healing thing that can make you feel relaxed and enhance your mood and mental health. I’m feeling very relaxed now. I really enjoyed talking with someone I felt I could trust and feel comfortable with.” Likewise, participant H was asked to examine the second concrete drawing that he created. The image below is a visual representation of participant H’s concrete drawing (Drawing 12).



Drawing 12

Participant H created a drawing that depicted feelings of sadness which he further explained during the second interview session. Similar to the way he drew his abstract picture, participant H included objects alongside words that he used to describe his experience. Although the objects and words were separated, participant H explained them using sequential order.

Participant H wrote phrases such as “dog: breaking of champions,” “U.S.A,” “on the car wash,” “prey,” “Toronto fox,” “13.25 years,” “wonder dog,” and “Capricorn dog,” “on the car window.” The drawing included objects such as a dog stick figure, outline of the U.S.A map and another picture of a cartoon dog smiling. Participant H used the colour green, blue and light blue to create different parts of his drawing. Participant H used these colours to represent his feelings of sadness as he later discusses in detail. When asked to discuss the drawing, participant H discussed that his drawing is about his dog that was born on Christmas day. He explained that she was prey driven and she liked to bark a lot. Participant H indicated that she liked nice things

and was spoiled since he would buy her expensive food. Participant H continued to discuss the relationship he had with his dog when he stated “when she would go into my parent’s car she would put her face against the window. It always looked like the shape of the U.S map. She lived for 13.25 years and she was a wonder dog. She liked adventures and had an ego.” The participant had his head down as he discussed the personality of his dog. It seemed like the participant had a strong connection with his dog as he mentioned she was his main focus in his life at the time. It was clear in participant H’s non-verbal behaviour that discussing this drawing brought back memories of sadness as he was less excited and positive when answering the questions in comparison with the way he was acting when he discussed the abstract drawing. When asked what emotions he felt while looking at the drawing he stated “It brought back memories of sadness because I just went through the best moments of her 13.25 years of her life (pauses with watery eyes). She had an energetic and youthful personality that I miss.” Participant H was able to open up and express his feelings as he discussed the sadness that comes along with thinking back to the memories he had with his dog. When asked if he experienced any emotions while explaining the drawing, participant H indicated that after explaining his thoughts he realized that he was able to relate with his dog as he suggested “I can relate with her. In a way we both persevered in many ways in life. She would always bounce back although she was a small dog. She had the mind of a big dog. She would persevere and was strong. I can relate with her because I’ve persevered in many occasions in my life.” It was interesting to note that participant H was able to connect himself with the qualities that his dog possessed as it seemed as if part of his identity was found within his dog. Through discussing the way his dog behaved, participant H realized that his dog was something that motivated him to conquer his hardships and persevere through the stressful and hard times he experienced. Participant H confirmed this when he

mentioned “Throughout high school and university I was always stressed, but I would always push myself and get through because I was very persistent and diligent and always ensured to finish something I needed to complete. I am just like my dog.” Participant H explained ways that helped him deal with his stress which included talking to friends, attending counselling and relating with others that were going through similar circumstances. When asked what is one thing that he would like someone to know about his drawing, participant H indicated that he would like others to know that his dog had a special place in his heart and he misses him a lot. Participant H connected those thoughts and expressed feeling sad that his dog is no longer alive. In order to measure participant H’s level of communication, the first and second interview sessions were compared to find out when participant H shared more information regarding his drawing. During the first interview session (recalling a drawing), participant H shared extensive information regarding his picture as he explicitly described his drawing and provided details about the inspiration behind it as well. Participant H was able to express some of his emotions while recalling his drawing as he mentioned feeling anxious since he was dealing with issues in school. He also mentioned feeling worried and upset because of the grades he was receiving. It was clear that participant H was able to engage with his emotions to a certain extent during the first interview session. Furthermore, when asked to recall a specific part of his drawing that he felt most connected with himself, participant H mentioned his family and his desire to live near the ocean since his drawing reminded him of that scenery which indicated he was willing to share details about himself. Therefore, participant H was able to communicate some degree of emotional connection with his drawing and at the same time comment on external details within his drawing. Although his level of communication was high, participant H was able to provide more content relating to himself during the second interview session. To measure participant H’s

emotional connection he demonstrated during the interview sessions, the experiencing scale was used to analyze this connection. During the first interview session (recalling a drawing), participant H scored a level two on the experiencing scale. A level two is when the association between the speaker and content is explicit (Klein, Mathieu, Gendlin & Kiesler, 1969). The speaker's involvement does not go beyond the specific situation since his comments, actions, reactions and remarks all serve to get the idea across but do not refer to the speaker's feelings. Participant H demonstrated this when he described his drawing as he focused on the artist that inspired him to create his drawing instead of on his personal feelings and reactions. Moreover, a level two is when the speaker is the central character in the narrative and his interests are clear (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant H portrayed this when he commented on dealing with stress and anxiety because of school. Although participant H was able to comment on feeling "stressed" and "anxious" the content revealed his feelings implicitly but not explicitly. Furthermore, a level two is when the individual establishes the importance of the content but makes no reference to the quality of this involvement (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant H exhibited this behaviour when he was asked to recall a specific part of his drawing that he felt most connected with himself. Participant H mentioned remembering his family members because of the ocean that was part of his drawing but didn't reveal any information about the quality of his involvement. In contrast, participant H scored a level four on the experiencing scale during the second interview session. A level four is when the content is a clear presentation of the speaker's feelings, giving his personal, internal perspective or feelings about himself (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant H described in detail feeling sad because of his dog's recent death. He was able to give his internal perspective about how he resembles his dog's strong personality. Participant H's feelings or the experience of

events, rather than the events themselves were the subject of the discourse. Participant H communicated what it's like to be him when he mentioned that he is very persistent, diligent and always ensures that he finishes work that needs to be completed. Participant H's responses during the second interview session were told from a personal point of view. When talking about himself he discussed his feelings, personality, assumptions, motives, goals and private perceptions. Therefore, participant H was more in tune with his inner emotions during the second interview session compared with the first interview session (recalling a drawing). Lastly, participant H's "face task" questionnaire was analyzed and revealed that he was able to identify all seven universal faces (appendix B).

5.2.12 Participant I

This participant was a York University female student that was clinically diagnosed with ASD and was part of the active art group (the participant was asked to physically draw two art pieces). This participant was called "Participant I." Participant I's art questionnaire indicated that she is not good at drawing (she selected a three out of a ten) and she is not familiar with art or drawing (she selected a four out of a ten). Likewise, participant I indicated that she doesn't enjoy drawing (she selected a two out of a ten) and she didn't like drawing as a kid (she selected a four out of a ten). Therefore, participant I did not have a strong artistic background before participating in the study. Participant I's GSR levels were measured next. A significant effect was found when she viewed both "angry" and "fearful" faces in comparison with her baseline results which were lower.

Comparison Between Baseline and Post Drawing Task- Participant I

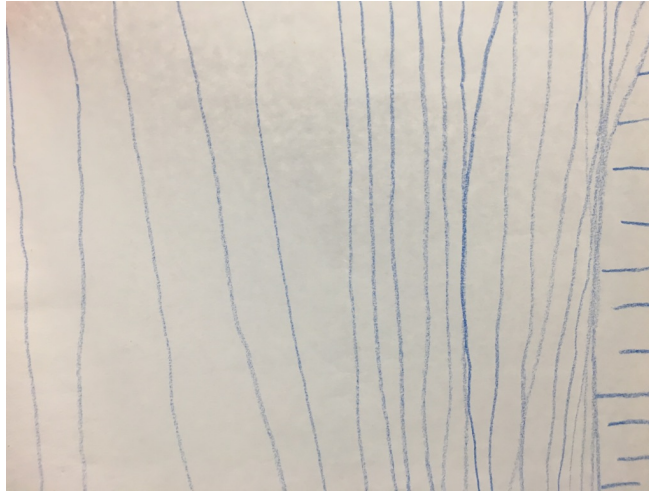
<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post-Drawing Task (Mean)</u>	<u>Analysis</u>
Anger	4.1504 μ S	4.205 μ S	Significant effect

Happy	4.7686 μ S	4.2466 μ S	No significant effect
Surprise	4.2405 μ S	3.9087 μ S	No significant effect
Fear	3.4792 μ S	4.3078 μ S	Significant effect
Sad	4.3426 μ S	2.8989 μ S	No significant effect
Disgust	3.7248 μ S	2.2527 μ S	No significant effect
Contempt	4.0837 μ S	1.7049 μ S	No significant effect

Table 9

The table above (table 9) indicates that participant I scored a 4.205 during the post drawing task when he viewed the “angry” face which was higher in comparison with the baseline results of a 4.1504 ($4.205 > 4.1504$). Similarly, participant H scored a 4.3078 during the post drawing task when she viewed the “fearful” face which was higher in comparison with her baseline results of a 3.4792 ($4.3078 > 3.4792$). However, participant I showed no significant effect when she viewed the happy, surprised, sad, disgusted and contempt faces since her baseline levels were lower than the post-drawing task levels. No minor effects were found when participant I completed the GSR and face task. Therefore, participant I was emotionally aroused when he viewed both the “angry” and “fearful” faces after completing the post-drawing task. Participant I’s abstract and concrete drawings were analyzed next to find out whether the emotions she reacted towards during the GSR and face task matched the emotions she felt while creating the drawings.

The abstract drawing participant I created is shown below (Drawing 13). The drawing below is a representation of how participant I was emotionally feeling while explaining her drawing.

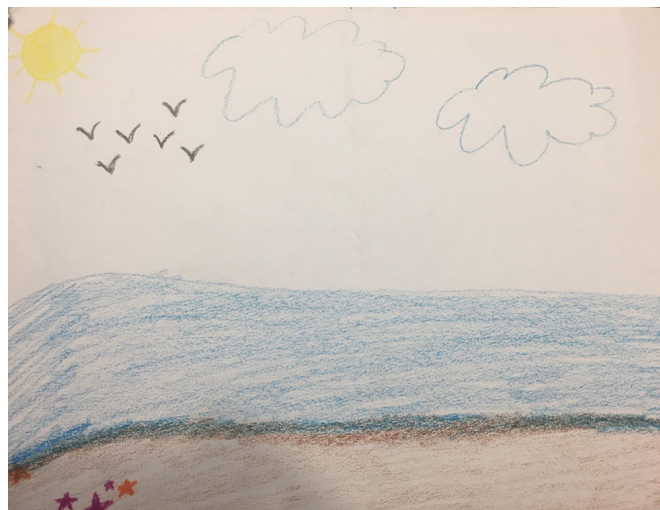


Drawing 13

The abstract drawing above depicts participant I's feelings of anger, fear and frustration as this was revealed during the second interview session (appendix B). The participant drew a picture of various straight lines facing different directions. Participant I explained that the drawing starts from the left and ends at the right. The lines on the left side of the drawing are spaced out in a consistent manner, however, near the middle of the drawing the lines seem to get closer. Near the end of the page the participant included short lines that face the opposite direction of the straight lines that take up the majority of the page. Participant I chose to use the colour blue to create the abstract drawing. When participant I was asked to discuss the drawing she stated "Anytime that I am walking outside I like to look at things that have patterns, so I have a tendency to read the license plates of cars. But sometimes too many cars go by and then I get overwhelmed and angry because I can't keep up. That's why I drew the lines getting blended into each other. This is when I get overwhelmed. To stop feeling this way, I start to focus on something else in a new

direction. The short lines at the end is when I give up. The steady lines are when I am able to keep up with it.” Participant I expressed her anger and frustration when she is unable to keep up with her daily tasks. It is interesting to note that when participant I was asked to discuss her drawing she was unsure how it was related to her life. However, as she analyzed the drawing during the interview session she came to several conclusions about herself that she didn’t know before engaging in the art task. For example, when asked to discuss a part of the drawing that reminded her of a particular experience, she stated “This reminds me of the school year. The straight line is when you start the school year and as the lines get intense it represents the stress and procrastination that I go through to finish something. The lines at the end is when I give up and start a different task.” The participant added that not being able to finish something makes her feel very anxious and angry to the extent that she needs to start a new task to get over the first one. When asked to locate a particular area that she felt most connected with herself, participant I stated “I feel connected to the end of the drawing (the short lines) because I always find myself jumping around from one task to the next because I can’t focus on one thing. I find myself avoiding tasks that need to get done which are usually the tasks I don’t like doing. For example, because I didn’t want to write my research paper, so I started cleaning and doing the laundry. I sat and watched the dryer spin for 40 minutes because I like looking at patterns or steady motions that I can predict. I guess it gives me a neutral and calming feeling because I know what’s going to happen next and it makes me feel in charge. I guess the unknown makes me feel anxious and that’s when I start to jump from one task to the next.” The patterns included in her drawing symbolize her need for structure and repetition to feel at ease. Furthermore, participant I was able to critically analyze her drawing in a personal way and reach several conclusions about herself. She was able to better understand why she behaves in certain ways

and how that makes her feel emotionally. The participant mentioned fear of the unknown causes her to shut down and start a new task which is something she has noticed about herself in the past but was able to further discuss it in the interview session. Moreover, she also indicated that her drawing can be understood in various ways as there is no right way when looking at it. For example, participant I suggested that looking at it from right to left would mean the opposite of her original explanation, which is when someone first procrastinates and then slowly feels better after completing a task (the lines become spaced out). Therefore, the participant was able to analyze all aspects of her drawing to make sense of her feelings. Similarly, participant I was asked to examine the second concrete drawing that she created. The image below is a visual representation of participant I's concrete drawing (Drawing 14).



Drawing 14

Participant I created a concrete drawing that depicted feelings of fear which she further explained during the second interview session. Participant I drew a scenery of the beach and included sand, sun, water, birds, starfish and clouds. When asked to discuss her drawing she stated “This picture is a reflection of a song I heard from a movie called “Her” with Scarlet Johnson. It’s about a guy that falls in love with a girl that doesn’t know how the beach looks like. When I was drawing I

closed my eyes and tried remembering the song. I felt like I was at the beach so the process of drawing felt relaxing. When I heard the song this was what I imagined (pointed at her drawing).” Participant I indicated that she finds it soothing to look at certain patterns as it helps her focus and finish tasks in the previous interview session (abstract drawing). It was interesting that she kept replaying the song from the movie she mentioned as it had repetitive elements that helped her focus to complete the drawing. Participant I confirmed this when she stated “I felt really focused because I kept hearing the song over and over in my head so I kept drawing until I finished it. The repetitive movements I made with my hand as I drew helped me too. When I was drawing I felt very relaxed, focused and steady. I liked drawing this better than the abstract one because I felt steady.” Participant I felt at ease since remembering the song and making repetitive hand movements while drawing helped her focus and finish the task without feeling anxious. The participant found it interesting that she included the birds, sun and starfish all on the left side in a straight line. It is interesting to note that in the abstract drawing she started the picture from the left to the right including the even lines on the left side and the blended lines on the right side. When asked to locate a particular area in the drawing that she felt most connected with herself, she stated “The water. The water is transparent, but you can’t see the bottom unless you go down. It ripples with the waves but it can get a little rocky as well. I feel connected to it because it reminds me of how my life is. Sometimes it’s steady but other times it’s rocky and things aren’t really transparent as they seem. The body of water is so big you don’t know what’s there. You can only see where you are. I feel fearful because I don’t know how things are going to turn out this year. I guess it’s a lot like my recent friendship. It was up and down and I think school separated us. It’s like the water---nothing is constant and everything is changing.” When participant I was asked to focus on one area of her drawing, she was able to connect her drawing

with herself in a personal way. The proportion of water in her drawing took up the majority of her picture as participant I discussed the connection she has with water in great detail. Participant I's drawing prompted her to delve into a self-analysis of herself to reach insightful conclusions about the way she feels, behaves and expresses herself. Participant I was able to connect events that occurred in her life to fully understand how they have affected her emotionally. When asked what she learned about herself after completing the study, participant I suggested "At first I drew random things, but now when I look at my drawings it's actually about everything in my life. Like if there is a conflict in a relationship I just jump to something else. I felt like my drawings meant more after talking about them." The process of communicating her emotions revealed hidden emotions and meaning behind her drawing that she was not aware of before answering the interview questions. Participant I also stated that she wouldn't have shared these emotions or personal reflections had she not created the drawings. She explained that her drawing helped her organize her ideas and analyze her feelings in an indirect manner since she stated "I liked how this activity let me talk about my emotions in an indirect way. I would have avoided the question if you asked me how I'm feeling today." It is interesting to note that drawing about her emotions eased the process of opening up and talking about them. Participant I confirmed that direct confrontation would've made her become closed off and hesitant before sharing anything personal. Moreover, participant I mentioned that she felt the researcher created a safe and comforting environment for her to speak about her emotions in a free way as she didn't feel intimidated. To measure participant I's level of communication, the first and second interview sessions were analyzed. During the first interview session (recalling a drawing) participant I didn't provide substantial information regarding her drawing as she stated "It was a drawing of a crime scene and I remember drawing a police car since it was a comic strip." Participant I didn't

mention any information regarding her emotions as she focused on the appearance of her drawing and what it resembled. The participant was able to recall a specific part of her drawing that reminded her of a particular experience, however, she failed to relate it with her feelings. For example, participant I stated “I liked the main character in the comic strip named Alex. I felt like I connected with the characters because we both like classical music and are trouble makers.” Therefore, participant I’s level of communication was lower during the second interview session in comparison with the first interview session (appendix B). To measure participant I’s emotional connection she had during the interview session, the experiencing scale was used to find the degree of this connection. Participant I scored a level two during the first interview session (recalling a drawing). A level two is when the association between the speaker and the content is explicit. The speaker is the central character in the narrative or his interests are clear. However, the speaker’s involvement does not go beyond the specific situation or content (Klein, Mathieu, Gendlin & Kiesler, 1969). All comments, associations, reactions and remarks serve to get the story or ideas across but do not refer to or define the speaker’s feelings (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant I demonstrated this when she discussed the character of the comic script as she was focusing on getting the story across but did not mention her feelings. In contrast, participant I scored higher during the second interview session which was a level five. This stage is when the content is a purposeful exploration of the speaker’s feelings and experiences (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant I demonstrated this when she took the time to connect her emotions with her drawings and became self-aware of her feelings. Moreover, a level five includes two components. First, the speaker must pose or define a problem or proposition about himself explicitly in terms of feelings (Klein, Mathieu, Gendlin & Kiesler, 1969). The problem or proposition may involve the origin, sequence or implications of

feelings or relate feelings to other private processes (Klein, Mathieu, Gendlin & Kiesler, 1969). Second, the participant must explore or work with the problem in a personal way (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant I's problem was the frustration of not being able to complete tasks she starts which makes her feel angry and anxious. She was able to relate these feelings to other private processes when she explained feeling anxious and angry when she senses a conflict in a relationship. This causes her to remove herself from the situation instead of trying to solve it. Participant I was able to work with this problem in a personal way as she noticed it was a repetitive pattern of behaviour that she possesses. She recalled different situations that demonstrated this type of behaviour which allowed her to personally engage within the problem and come to various conclusions (for example, she noticed not finishing tasks in school, relationships and when observing her environmental context). Overall, participant I was more in tune with her inner emotions during the second interview session compared with the first interview session (recalling a drawing). Lastly, participant I's "face task" questionnaire revealed that she was able to identify four out of the seven universal faces (appendix B). Participant I did not correctly identify the fearful, disgusted and contempt faces. She incorrectly identified the fearful face as the surprised face, the disgusted faces as the contempt face and the contempt face as the happy face (appendix B).

5.2.13 Participant J

The last participant was a female York University student that was clinically diagnosed with ASD and was part of the passive art group (the participant was asked to select two pieces of artwork from fourteen different pieces). This participant was called "Participant J." Participant J's art questionnaire indicated that she could draw very well since she selected an eight out of a ten on the scale. She also noted that she's very familiar with drawing or art in general as she

selected a ten on the scale. Similarly, when asked how much she likes to draw she indicated that she really enjoys drawing as she selected a nine out of a ten on the scale. Likewise, participant J indicated that she enjoyed drawing as a kid since she selected a seven out of a ten (appendix B). Furthermore, participant J's GSR levels found no significant effect when she viewed all seven universal faces (anger, happy, surprise, fear, sad, disgust and contempt) in comparison with her baseline results which were all higher. It is important to note that during the baseline task participant J was alert and actively viewing the faces, however, when she completed the post drawing task and GSR face task she looked sleepy and was not alert (the participant occasionally looked away from the screen and back). The results of the GSR might have been affected by this behaviour.

Comparison Between Baseline and Post Selection Task- Participant J

<u>Emotion</u>	<u>Baseline (Mean)</u>	<u>Post Selection Task (Mean)</u>	<u>Analysis</u>
Anger	6.8389 μ S	0.7756 μ S	No significant effect
Happy	6.5635 μ S	0.8229 μ S	No significant effect
Surprise	6.0375 μ S	0.8515 μ S	No significant effect
Fear	5.5745 μ S	0.814 μ S	No significant effect
Sad	5.2648 μ S	0.7315 μ S	No significant effect
Disgust	4.6614 μ S	0.727 μ S	No significant effect
Contempt	4.4549 μ S	0.73 μ S	No significant effect

Table 10

The table above (table 10) portrays participant J's GSR levels which indicate no significant effect. The baseline level of "anger" for participant J was 6.8389 which is higher than the post selection-task results which is a 0.7756 ($6.8389 > 0.7756$). Similarly, when participant J viewed the "happy" face she scored a baseline of a 6.5635 which is higher than the post-selection task results which is a 0.8229 ($6.5635 > 0.8229$). Likewise, she scored a baseline of a 6.0375 when she viewed the "surprise" face which is higher than a 0.8515 post-selection task ($6.0375 > 0.8515$). Participant J scored a 5.5745 when she viewed the "fear" face which is higher than the post-selection task of a 0.814 ($5.5745 > 0.814$). Furthermore, participant J scored a baseline of a 5.2648 which is higher than the post-selection task of a 0.7315 when she viewed the "sad" face ($5.2648 > 0.7315$). Furthermore, participant J scored a baseline of a 4.6614 which is higher than the post-selection task of a 0.727 ($4.6614 > 0.727$) when she viewed the "disgusted" face. Lastly, when participant J viewed the "contempt" face she scored a baseline of a 4.4549 which is higher than the post-selection task of a 0.73 ($4.4549 > 0.73$). Therefore, participant J was less emotionally aroused when she viewed the seven universal faces after the post-selection task in comparison with the baseline task results. The first abstract image participant J selected is shown below (Drawing 15). The image 1.5 below is a visual of the abstract picture (image 1) participant J selected.



Image 1.5

Participant J expressed feelings of confusion, fear, happiness and hope during the second interview session when looking at the abstract picture (abstract 1). Participant J explained that she selected this picture because it was very colourful and resembled “freedom” in her opinion. The various components in the drawing represent having a lot of choices in life which is something she desires. When asked what emotions she felt while looking at the drawing she stated “I felt very free. I felt that I could make my own decisions and choose what I want. But at the same time, I felt confused because I still want to achieve a lot of things in my life but I keep changing my mind. The drawing is very confusing to me.” The participant explained that when she looked more closely at the picture she was able to pay attention to details she didn’t notice the first time she looked at the drawing. Participant J stated “When I first looked at the picture I only noticed the different colours but now I can see the different shapes and it looks like it has a lot of meaning behind it. It’s like life. People often judge me on first impression and from the outside but they miss details without taking the time to get to know me more deeply. I feel sad

when this happens because I want people to take the time to get to know me.” She was able to relate the drawing with herself in a personal way as she expressed the struggle of being misunderstood and judged by others. Most importantly, participant J was able to express the way this made her feel as she stated feeling “sad.” Furthermore, when asked to discuss a part of her drawing that reminded her of a particular experience, participant J stated “It reminds me of not knowing what my goals are and what to focus on. I think this is because I want to achieve everything because I am a perfectionist but it never works out. I don’t understand myself and don’t know what my long-term goals should be, I feel anxious because of this and I am disappointed in myself.” The participant was able to describe her feelings regarding the internal struggle she faces on a daily basis. When asked what is one thing that she would like someone to know about the drawing, participant J suggested “I want them to know that I need help. I want someone to guide me somewhere and help me organize myself out instead of just being all over the place.” Although participant J didn’t mention her feelings directly in her response, it is clear that she felt lost and upset that nobody is taking the time to help her. When asked to locate a particular area in the drawing that she felt most connected with herself, she indicated feeling connected to the bottom right blue area of the picture. Participant J stated “It looks like a dove to me. It’s a symbol of peace. There is no conflict and everything is free.” The participant seemed more conservative when answering this question as she was looking at the ground and didn’t want to engage in conversation (she wanted to change the topic and later asked to move onto the next question). Nonetheless, the area she selected resembled her desire to feel at peace within herself since she struggles to fully understand herself and the direction she wants to take in her life. Although the picture is abstract, the participant thought the small section looked like a dove which represents when everything is free and there is no conflict. The dove is a symbol of peace

which is something she desires to have in her life but can't due to external circumstances. Although the picture eased participant J's ability to communicate her emotions, it was still difficult for her to specifically articulate her full emotions since she stated "I feel it's really hard to explain. I have a lot of ideas but I don't know how to say it...I have to think about it more deeply." The participant confirmed having trouble specifically discussing her emotions but nonetheless she was willing to open up and articulate a lot of her feelings throughout the second interview session. Participant J was asked to discuss the second picture that she chose which was a concrete image (image 6) (appendix B). The image 1.6 below is a visual representation of the concrete picture (image 6) participant J selected.



Image 1.6

The image above depicts feelings of sadness, loss, and hope that participant J expressed during the second interview session. Participant J explained that the picture reminded her of hiking through the woods and not being able to see anything because of the trees. She added that while

hiking through the woods she gets lost and isn't able to find her way outside, however, the light shining through from behind the trees represents the "path" which she explains is her way out. When asked what emotions she feels while explaining her drawing, participant J stated feeling dark and sad, however, she added that the light behind the trees represents "hope" since good always wins over evil. Although participant J commented on feeling "sad" and "dark" she was able to find some positive aspects within the drawing which represents her need for happiness and hope within her life. It is important to note that she was able to articulate the way she felt while observing the concrete image which confirmed the emotional tie she was able to make with the image. Similarly, when asked if she felt any other emotions while explaining the picture she suggested, "this reminded me of the dark years during high school when I felt isolated and had no friends. My parents didn't understand what I was going through so when I graduated I felt that I accomplished my goal. Going to university was that small part of hope I still had within myself for better things to happen." The drawing participant J selected included several parts that she connected with on a personal level. The dark colour surrounding the building depicted the darkness she felt during her high school years while the light coming out from the building represented the feeling of accomplishment when she graduated and got into university (having hope for the future). It is interesting to note that participant J didn't mention the buildings but pointed out the colour of the buildings (the colour white symbolized light for participant J). Likewise, when the participant was asked to discuss a part of the drawing that reminded her of a particular experience she mentioned the doors of the buildings. Participant J thought the doors resembled her desire to leave her current life and find another place to start her life again. Participant J further explained this when she stated "Although it might appear that I am going through darkness, when I look at the drawing I feel like I want a new beginning." Participant J

was able to articulate her sense of hope when looking at the picture. Although the colour black (darkness) in the picture is drowning the white (light), participant J chose to focus on the white (light) colour to express her longing for better things to happen in the future (hope). When asked what is one thing that she would like someone to know about the picture participant J stated “I want them to know that when you look at life you should focus on the bigger picture instead of on the small things that make you upset. In this picture instead of looking at the individual trees I was looking at the forest in general.” The need for participant J to look at the bigger picture helps her cope with the smaller disappointments that she has experienced within her life. Participant J was able to express her need for feeling positive as she focused on elements within the picture that reminded her of hopeful thoughts. In order to measure the level of communication participant J demonstrated, the first and second interview sessions were analyzed to compare when she stated more information in relation with viewing the picture. During the first interview session (recalling a drawing), participant J was willing to provide details about herself without being asked to mention that type of information. Likewise, she was willing to open up and discuss events that she experienced and the way it has impacted her today. For example, she would include information about her personality and provide personal responses when asked a general question. Therefore, it is clear that participant J was able to communicate a lot prior to engaging with art, however, after completing the selection task (art task) participant J still exhibited more communication regarding her emotions (appendix B). Likewise, to measure participant J’s emotional connection, the experiencing scale was used to compare both interview sessions. During the first interview session (recalling a drawing), participant J scored a level three on the experiencing scale (Klein, Mathieu, Gendlin & Kiesler, 1969). A level three is when the content is a narrative or a description of the speaker in external or behavioural terms with

added comments on her feelings or private experiences (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant J demonstrated this when asked whether she experienced new emotions while explaining the drawing. She suggested “I get really stuck if a person has done something mean and now I am wondering where she is because I just want to push her. I think the drawing made me feel relaxed because the colour and the background was blue which made me feel calm.”

Although the participant focused on how other people around her made her feel, she was able to provide some information about how the drawing made her feel which included “relaxed” and “calming” feelings. Furthermore, a level three is when the content is a narrative of events or description of an aspect of the speaker’s environment (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant J portrayed this when she discussed how her drawing looked like but included some comments about not liking the girl sitting next to her in class when she was drawing. Likewise, a level three is when the speaker gives personal remarks about her feelings at the time of the event or in retrospect (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant J demonstrated this when she discussed wanting others to live her life to see things from her point of view since she has suffered because others have mistreated her in the past. Furthermore, participant J scored higher during the second interview session which was a level five. This stage is when the content is a purposeful exploration of the speaker’s feelings and experiences. Participant J was able to analyze her feelings when she was relating it with the picture since she proposed a problem she deals with (feeling lost and confused) and analyzed the way that makes her feel (upset and anxious). Moreover, a level five is also characterized by two components. The speaker must pose or define a problem or proposition about himself explicitly in terms of feelings. The problem or proposition may involve the origin, sequence or implications of feelings or relate feelings to other private processes (Klein, Mathieu, Gendlin & Kiesler, 1969). In addition, the participant

must explore or work with the problem in a personal way (Klein, Mathieu, Gendlin & Kiesler, 1969). Participant J described feeling anxious and disappointed in herself because she doesn't know what goals are and how to organize her life. Participant J discussed how these feelings relate with herself as she described herself as a perfectionist but always feels unsatisfied about the tasks she completes. Participant J was able to come up with a practical solution to solve her problem which is staying positive and reaching out to others and asking for help. Overall, participant J was more in tune with her inner emotions during the second interview session after completing the post-selection task compared with the first interview session (recalling a drawing). Lastly, participant J's "face task" questionnaire revealed that she was able to identify all seven universal faces (appendix B).

After fully analyzing the data collected, three major findings were found which confirmed the original research hypothesis. The GSR levels confirmed that both group two (participants not diagnosed with ASD) and group one (participants clinically diagnosed with ASD) were able to connect their emotions with the drawings with physiological arousal. Similarly, individuals with and without ASD were better able to express deep emotions when engaging within active versus passive learning. Likewise, when both the groups (individuals with and without ASD) engaged with art, they appeared to experience themselves in the art making process, focused on making meaning and constructed a personal sense of self. They were also able to share their emotions more appropriately while enhancing their mood and overall sense of identity. Therefore, the results confirmed that art can be used as a coping mechanism for individuals with ASD to communicate their emotions with others.

5.3 GSR Levels Indicate that Individuals with ASD Feel Emotions while Creating Art

After analyzing the GSR levels of all ten participants (with and without ASD), the GSR levels confirmed that participants were able to connect their emotions with their drawings associated with arousal. No major differences were found between the groups as the participants got emotionally aroused when looking at a particular face which matched the emotions they previously drew (or selected from the set of drawings provided) during the first task. Furthermore, the participants were able to distinguish the emotions they were feeling and to connect these emotions with their drawings (or pictures they selected) in a personal way. A trend was found when analyzing the GSR levels as the majority of participants felt aroused when viewing more than one emotion. Those multiple emotions were always communicated through their drawings during the interview sessions. The chart below (chart 11) indicates that all nine participants felt emotionally aroused when viewing more than one face which ultimately were all connected with their drawings (however, participant J was the only participant that did not demonstrate this trend).

Emotional Arousal and Communicating Emotions

Participant Letter	Connection with Multiple Emotions	Communicated those Emotions During the Interview Sessions
A	Sad, Disgust and Contempt	Yes
B	Sad and Fear	Yes
C	Sad and Fear	Yes
D	Surprise and Fear	Yes
E	Anger and Happy	Yes
F	Disgust, Contempt, Anger, Fear and Sad	Yes
G	Sad and Happy	Yes
H	Sad and Happy	Yes
I	Anger and Fear	Yes
J	None	None

Table 11

It is clear that both groups were able to feel the emotions while they were drawing as the GSR levels confirmed this connection during the “GSR and Face Task” portion of the study. Overall, this finding suggests that individuals with ASD are able to feel emotions and communicate it through creating art.

5.4 Active Participation with Concrete Art Increased their Ability to Communicate Emotions

The results of interview sessions revealed that participants who engaged with active art were able to express deeper emotions and communicated this with the researcher in comparison with participants who engaged with passive art. Several patterns were found when comparing the responses of participants in each group. Participants in the passive art group found it hard to connect deeply with their emotions because the images of art they viewed were not personal. Participants focused on analyzing the artist’s intention behind creating the images instead of discussing how the picture made them feel and connecting it with a personal experience. When participants tried connecting themselves with some elements of the picture, they would often express their confusion behind other objects that they couldn’t connect with and disregarded it. Therefore, participants seemed to be less involved in the interview session when engaging with art passively. Likewise, the majority of participants in the passive group would speak about general topics without delving into deeper experiences they have gone through. Therefore, it was difficult for participants to relate with the picture since it was not a creation of their own. Similarly, although the participants were able to feel certain emotions when viewing the image, they found it challenging to articulate exactly how they were feeling. It was clear that attaching meaning to the picture was the most difficult part for participants to do as they couldn’t find the “right word” that depicted how the picture made them feel. In contrast, participants that actively engaged with art (physically drew both abstract and concrete drawings) showed higher levels of

involvement as they were willing to share their personal experiences. They didn't need to be prompted to share personal events as they wanted to explain more about the drawing and how it made them feel. Likewise, the topics they discussed were personal as they would point out small details that meant something to them as they fully understood the drawings they created. As a result, it was easier for participants to create deeper connections with their drawings. Similarly, participants were able to specifically discuss how their drawings made them feel as they used literary devices and metaphors to communicate exactly how they perceived their drawings. It is important to note that these trends were consistent in both groups (with and without ASD). Overall, this study found that participants were able to express and communicate deep emotions better when engaging with active versus passive art. The table below (table 12) compares participants active versus passive participation with art based on three different criteria which include level of connection, level of communicating emotions and the topics discussed (personal versus general).

Table 12: A Comparison Between Active Versus Passive Participation with Art

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
A (no ASD) Low	Passive (abstract picture)	"It reminded me of "mental deterioration" or something "falling apart"	"I felt a depressing feeling" "It's that feeling of bottling up your emotions in a way, and just letting yourself be drowned with all the emotions instead of talking to someone about it"	"A lot of people don't know how to deal with emotions and it kind of made me remember a time in my life when I felt helpless and hopeless"	Participant A focused on general reflections. When discussing the picture he did not involve himself specifically. He did not further discuss his emotions

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
	Passive (concrete picture)	"I would tell them how I felt about it, it feels like your looking like your friends doing something without you"	"I feel a bit left out like not casted away but put to the side, it's like someone is telling me we don't need you right now....it's like feeling forgot about or thrown away and not needed"	"I feel like I am left out, when my friends go out they don't invite me, it's not pushing you away but having a lack of friendship, it's a feeling of being pushed away. I feel alone"	Participant A was able to open up about his personal emotions when discussing the concrete picture. However, it was not detailed as he focused on other people's behaviours
B (no ASD) Low	Passive (abstract picture)	"it's like a mess in your mind, then I see an eye, maybe someone looking into your head. Someone is crazy, is all over the place, doesn't know what emotion they are feeling"	"I feel a sense of anxiety when I see this, maybe sort of like depression, like with the blue on this side. Anxiety for sure and confusion"	Personal: "It's like a different type of connection with your father, your father has a role to teach you things. My dad, for whatever reason or reasons, me and him never got that father-child bond"	He was able to relate the picture to a particular experience but did not specifically discuss the emotions he felt during this experience.
	Active (concrete drawing)	"With this picture I see industry and conformity. It reminds me of how society puts labels on people and makes certain rules about gender roles"	"I feel internal sadness (looks down) and fear, fear of the unknown you don't know what this is, fear of judgement, fear can be so many things, it's just like corruption"	He explained a time when he saw his friend get bullied by a group of girls. "I wasn't going to see it happen and be quiet. I didn't regret helping her"	Participant B was able to discuss his emotions in relation with the picture, however, it was not sufficient

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
C (no ASD) High	Active (abstract drawing)	“I guess the black is the center which is my heart, The colour black is saying this is how you are making my heart feel. The red is grieving and the yellow is how I would like my life to be, it's like sunshine. The mouth is a damaging tool. It's all over, it's the mouth. It's harming me”	“I feel it's almost like somebody has put so much pain and that's where grieve comes in. I see lost in him like he is so blinded he can't see the way he is making me feel. I feel like nobody is listening to me while I'm grieving. I know I am rational but his lack of understanding makes me feel crazy”	“When I came home I was looking forward to speaking with my husband about my day but when I started speaking about my progress in school he quickly invalidated these joyful feelings I had”	She was able to deeply connect her emotions with the drawings she created. All of her responses alluded to her emotions in some way. She communicated in a way that allowed the researcher to feel the pain within her as she focused on her emotions during the interviews
	Active (concrete drawing)	“I feel like somebody is wasting so much energy when I can be good with so much goodness. Time is not your friend, I see him messing with my head”	“I want peace. The arrows are coming out from the mouth and it's hurting my heart. But regardless, I've included a little bit of yellow, I know I bring so much sunshine...I had to put that in. I feel like someone is tormenting me with their mouth and it's harming my heart”	“He never stops talking (participant pauses and starts to cry intensely). I want peace. The arrows are coming out from the mouth and it's hurting my heart. But regardless, I've included a little bit of yellow, I know I bring so much sunshine”	The participant was able to connect herself emotionally with the drawings as she revealed the layers that each convey a specific emotion she felt during the experience she was discussing
D (no ASD) High	Active (abstract drawing)	It represents mixed feelings as she feels her life is complicated. “I have mixed feelings as I feel a little bit	“I felt anxious and confused since I recently lost my father when I visited my family during the summer. It might be because of that. I felt	“I felt most connected with the spirals and coals. It reminded me of how confused I	She was able to connect every experience with a particular emotion. Likewise, each object she drew represented an

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
		worried, it's complicated.”	scared because he left us”	feel at the moment. I feel confused about my life and what I am going to do in the future”	emotion she discussed
	Active (concrete drawing)	“I am in nature and I want to sit under the big tree and read my favorite books. I don't want to think about anything at all that is uncomfortable and unpleasant”	“Darker green makes me feel comfortable and relieved and the blue one reminds me of the sea and then the sky---like “sigh” relaxed and calming feeling”	“I felt a little bit stressed out, recently I'm thinking about life and death pretty much. So like if I die, I would want to become a tree. I was thinking to take a rest in this tree”	She was able to connect herself emotionally with the drawings as she revealed the layers that each convey a specific emotion she felt during the experience she was discussing
E (no ASD) High	Active (abstract drawing)	“Well, I was trying to create a dot but it didn't look like a dot, it's an event I pushed in my unconscious mind because but it's always there”	“It wasn't a good year it was the year I was back home and some things happened that I really didn't like. I liked the colour but it has anger to it I think”	“During my final year I found someone that helped me reduce that stress but that person wasn't who I thought he was. He lied to me and when I found out it was a big mess”	She related the drawing with her emotions and later discussed them in detail while referring to the experience she went through in a detailed manner
	Active (concrete drawing)	The dress symbolizes hope and happiness as she believes with time the pain she experienced (related back to the abstract drawing) will	“The dark side of it is the depression and anger taking the hope inside of you but you still have it that feeling that you don't know what to do” “ kind of hope and depression at the same time and kind	“You have things on your mind but you don't know if you are able to make those things come true”	The participant was able to connect her experience with certain emotions, these emotions were analyzed as she thought about the root cause of

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
		eventually fade and this creates a bit of happiness looking forward into the future	of feeling "blue" in the middle like that"		having these emotions
F (ASD) Low	Active (abstract drawing)	"I drew the person and a bumpy road because I was thinking about a walk I took with someone that meant a lot. Then I thought about the time my dad gave me a black eye, everything else was me thinking about the black eye"	"I feel angry because of my dad (participant paused), sorry, I don't really talk a lot...I'm emotional I guess" "Sad, I'd say my life isn't the best I have to admit but I'm dealing with it. I'll get over it soon. I find at times when I talk about emotions I can't seem to find solutions"	"If my dad tries to lay a hand on me in the future I would fight back because I am not weak anymore. Nobody can touch me anymore"	The participant was able to connect the picture with himself. However, he didn't explain how certain situations he has gone through makes him feel. The responses about his feelings were not detailed
	Active (concrete drawing)	"I feel lost, I feel lost thinking about the things I drew. They are things that don't mean anything to others but to me they mean a lot. I guess when something moves you it moves you"	"Sadness, disappointment and a feeling of failure. I didn't feel negative emotions while drawing but now I feel I am reliving my failure of not being able to do the rose, that's probably the main reason"	"I have the desire to feel happy so I tried drawing happy things. The sun reminds me to be a better person, so many people are cynical and my mom thinks that humans are terrible, but I don't"	He was able to connect certain emotions with his drawing, however, it was very general. His emotions were not analyzed and his responses regarding his emotions were not personal
G (ASD) Low/High	Active (abstract drawing)	"I was very stressed during certain points of my life. I didn't have good coping strategies and went through a lot of pain"	"I think where all the colours mix in together and all the lines come in reminds me of the time I felt helpless (covers face). It looks complicated" "I don't usually talk about my	He suggested that he would like people to know that dealing with his emotions can be complicated	The participant was unable to provide personal responses when explaining his emotions. He focused on general aspects about his

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
			emotions so this task made it easier”	at certain times, (looks down) but that he is capable of expressing the way he feels	drawing and emotions
	Active (concrete drawing)	“I decided to draw a lion because I grew up drawing a lot of animals at a young age. Anytime I see a lion I feel confident and courageous because it’s a symbol of courage. It makes me feel happy and helps me remain positive when I look at the lion”	“It makes me feel happy and helps me remain positive when I look at the lion” “I wish people could see this emotional part of me because I usually don’t talk about how I feel”	“My favorite animal is a lion and so it reminds me of the countless hours I spent as a child drawing. Those were the happy moments that I remember in my childhood. I remember always feeling like I’ve achieved or accomplished something after drawing lions. I want to be a vet in the future”	He was able to talk about his emotions in relation with specific experiences he went through. The concrete drawing made it easier for him to discuss an experience and then associate a specific emotion while explaining it
H (ASD) Low/High	Active (abstract drawing)	“Participant H mentioned feeling excited for the future because the drawing reminded him of how much he values keeping close family ties”	He mentioned feeling happy for the entire visit. He also felt relaxed since he was in his element and around kind people that he is comfortable with	“I would like people to know that it’s important to have experiences rather than material objects, especially if these people have made a profound impact for the better”	He was able to connect some emotions with his drawing, however, his explanations regarding these emotions were not personal

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
	Active (concrete drawing)	He mentioned it was a "special" time in his life because he was able to see family which is an important part of his life	"It brought back memories of sadness because I just went through the best moments of her 13.25 years of her life (pauses with watery eyes). She had an energetic and youthful personality that I miss"	"I can relate with her in a way we both persevered in many ways in life. She would always bounce back although she was a small dog. She had the mind of a big dog, she would perseverer and was a strong.	He was able to discuss his emotions in a detailed manner. The concrete drawing made it easier for him to discuss an experience and then associate a specific emotion to it
I (ASD) Low/High	Active (abstract drawing)	"I feel connected to the end of the drawing (the short lines) because I always find myself jumping around from one task to the next because I can't focus on one thing. I find myself avoiding tasks that need to get done which are usually the tasks I don't like doing"	"So, I have a tendency to read the license plates of cars. But sometimes too many cars go by and then I get overwhelmed and angry because I can't keep up" Participant I expressed her anger and frustration when she is unable to keep up with her daily tasks.	"This reminds me of the school year. The straight line is when you start the school year and as the lines get intense it represents the stress and procrastination that I go through to finish something. The lines at the end is when I give up and start a different task"	She was able to connect some specific emotions with her drawing. However, the connection was not fully explained as she would spend more time discussing the task that made her feel a certain way instead of analyzing the emotions she's feeling
	Active (concrete drawing)	"I feel connected to the water..... the body of water is so big you don't know what's there. You can only see where	"When I was drawing I felt very relaxed, focused and steady" "I feel fearful because I don't know how things are going to turn out this year. I	"At first I drew random things, but now when I look at my drawings it's actually about	She was able to talk about her emotions in relation with specific experiences she went through. The concrete drawing made it

Participant Letter	Active /Passive	Level of Connection	Level of Communicating Emotions	Topics Discussed	Researcher's Analysis
		you are. I feel fearful because I don't know how things are going to turn out this year."	guess it's a lot like my recent friendship"	everything in my life. Like if there is a conflict in a relationship I just jump to something else."	easier for her to focus on analyzing the emotions she's feeling or felt
J (ASD) Low	Passive (abstract picture)	"When I first looked at the picture I only noticed the different colours but now I can see the different shapes and it looks like it has a lot of meaning behind it"	"I felt very free, I felt that I could make my own decisions and choose what I want. But at the same time, I felt confused because I still want to achieve a lot of things in my life but I keep changing my mind. The drawing is very confusing to me"	"It's like life, people often judge me from my first impression and from the outside but they miss details without taking the time to get to know me more deeply"	The participant was able to connect the picture with herself. However, she didn't explain how certain situations that she has gone through make her feel. The responses about her feelings were not detailed
	Passive (concrete picture)	"Participant J stated feeling dark and sad, however, she added that the light behind the trees represents "hope" since good always wins over evil"	"This reminded me of the dark years during high school when I felt isolated and had no friends" "Although it might appear that I am going through darkness, when I look at the drawing I feel like I want a new beginning"	"So when I graduated I felt that I accomplished my goal. Going to university was that small part of hope I still had within myself for better things to happen"	She was able to connect certain emotions with her drawings, however, it was very general. Her emotions were not analyzed and her responses regarding her emotions were not personal

Table 12

In relation to participants who were not clinically diagnosed with ASD (group two), the results confirm the hypothesis, that is they were able to express deep emotions better when engaging within active versus passive participation with art. Both the active and passive groups showed this trend. For example, participants in the active group showed high levels of

communicating emotions when drawing concrete and abstract drawings. Likewise, participants in the passive group also showed high levels of communicating emotions when drawing both the abstract and concrete drawings. In contrast, individuals diagnosed with ASD showed lower levels of communicating emotions in general. However, it was interesting to find that when they drew concrete pictures they showed higher levels of communicating emotions as opposed to drawing abstract pictures. In other words, although they showed lower levels of communicating emotions, they were able to communicate emotions better when creating concrete rather than abstract drawings. This trend was found when participants actively and passively used art.

5.5 Art Facilitated Communicating Emotions among Individuals with and without ASD

The results found that when both groups (with and without ASD) engaged with art, they appeared to experience themselves in the art making process, focused on making meaning and constructed a personal sense of self. In addition, they were also able to share their emotions more appropriately while enhancing their mood and overall sense of identity.

5.5.1 Participants appeared to experience themselves in the art making process

The participants in both groups (with and without ASD) were able to experience themselves in the art making process. When they engaged in creating art they were able to physically feel emotions that brought back memories and reminded them of particular experiences. The non-verbal behaviour of participants reflected the emotions they were describing during the interview sessions. For example, participant F (diagnosed with ASD) cuffed his hands and clutched his teeth when he was describing his toxic relationship he has with his dad. Through creating art, participants were able to go back in time and experience their emotions again as it brought closure discussing it with someone that didn't judge them (the researcher). The art work connected the participants with themselves as they were able to

transform their inner feelings into something tangible. For example, participant C chose to use the colours red and black since they spoke to the participant’s need to express how she was exactly feeling. The participant didn’t need to further explain the pain she experienced since the colours were sufficient and powerful enough to explain that to the viewer. Viewing the art pieces helped participants reconnect themselves with their feelings as they were transcribed and validated instead of being ignored or suppressed. The various emotions they felt became conscious as they analyzed parts of their drawing that they initially thought didn’t include a lot of meaning. However, after talking about their drawings they became self-aware of the ideologies, perceptions and thoughts they valued as individuals. Similarly, participants noticed themselves opening up in a way they didn’t anticipate prior to engaging within art. For example, participant D (not diagnosed with ASD) was surprised she was able to express the way she was feeling on paper as she described herself as a “closed off” person. Likewise, participant E (not diagnosed with ASD) expressed that the hope inside her is embodied through the picture she drew of a girl wearing a dress. The table below (table 13) analyzes the experience of participants during the art making process and reveals that the majority were able to fully engage and experience themselves in the art making process (the responses of participants that were only part of the active group were analyzed in the chart below).

Table 13: The Experience of Participants During the Art Making Process

Participant Letter	Process of Art Making	Participants Experience
C (no ASD)	Heart (black): emotional distress Sun (yellow): desire to be positive Red Circle (red): grieving and hurt Mouth: damaging and harming Ladders (grey and red): represents invalidation Man: tormentor Black lines (coming towards the picture of her black heart): Sadness Repetitive patterns/ scribbles around the heart: battle	1. The use of those colours spoke to the participant’s need to express how she was exactly feeling 2. It was as if the participant didn’t need to further explain the pain she is experiencing since the colours (black and red) were sufficient and powerful enough to explain that to the viewer 3. The participant thought the task of drawing her emotions on paper

Participant Letter	Process of Art Making	Participants Experience
	Black coal hearts: her physical heart	helped her start talking about her feelings in a comfortable manner
D (no ASD)	<p>Pink circular spiral: mixed feelings/ worried and complicated</p> <p>Squared green spiral: growth/death</p> <p>Purple, red and green spirals: confusion and complications</p> <p>Purple star and black dots: good feelings</p> <p>Girl: the participant</p> <p>Big tree: life, death and peace</p> <p>Books: distraction</p> <p>Dark green: comfortable and relieved</p> <p>Blue: sea, relaxed and calming feelings</p>	<p>1. She felt a little better because of expressing her emotions on the paper and communicating about it to the researcher (she thought the hand movements while drawing was soothing and felt less anxious)</p> <p>2. When asked if she experienced any other emotions while explaining the drawing, she felt confused and worried since she was trying to make sense of the drawing</p> <p>3. The drawing made the participant feel at peace because to her the drawing represents a form of blocking out unpleasant and uncomfortable feelings and events she experienced</p> <p>4. The tools participant D used that helped express her emotions the most was the watercolour paint, she chose to use watercolour paint because mixing the colours allowed her to express various emotions</p> <p>5. The participant was surprised she was able to express this on paper as she described herself as a “closed off” person</p> <p>6. Participant D was surprised that she decided to draw something relaxing since it made her realize how much she is in need of a break in her life</p>
E (no ASD)	<p>1. Large burgundy circle: negative feelings</p> <p>2. Girl: the participant</p> <p>3. Fancy dress: hope and happiness</p> <p>4. Girl’s body: the participant</p> <p>5. Turquoise and blue: represent the small amount of hope</p> <p>6. Black: depression</p>	<p>1. The participant used dark colours such as burgundy, dark brown and black to depict her anger as these colours reminded her of the unpleasant feelings she went through at a point in her life</p> <p>2. Participant E was willing to open up and share the experience that made her feel this way the longer she looked at her drawing</p> <p>3. Looking at the drawing reminded her of the feelings she has gone through</p> <p>4. The hope inside of her is embodied through the picture of the girl wearing the dress</p>

Participant Letter	Process of Art Making	Participants Experience
F (ASD)	<ol style="list-style-type: none"> 1. Two stick figures: the participant and his relationship with his friends 2. Rope: being pulled 3. Bumpy road: meaningful moment 4. Rose: unworthy 5. Smiling sun: to become better 6. Hair bow: judgement 7. Flower and thorns: hurt and frustration 	<ol style="list-style-type: none"> 1. The participant's voice became stronger and louder when talking about his dad as the level of anger and frustration within him was apparent. 2. Although the participant indicated not being able to make sense of his drawing, he didn't realize the amount of emotional response and discussion he contributed by merely looking at his drawing 3. The participant felt "freaked out" because he wasn't aware about the amount of meaning conveyed within his drawing 4. His drawing facilitated his understanding of the emotions he felt as he was able to discover a quality he possessed from a situation he initially thought didn't have a lot of meaning
G (ASD)	<ol style="list-style-type: none"> 1. Various lines: stress and helpless 2. Black: Dark times 3. Red: Positive 4. Lion: Courage 	<ol style="list-style-type: none"> 1. The participant added that he learned he is an emotional person since he was willing to show his emotions and talk about them 2. He also added that looking at his drawing makes him feel resilient and calm.
H (ASD)	<ol style="list-style-type: none"> 1. Orange: joy and happiness 2. Happy face: happy 3. Dog: memories of his dog 4. Green, blue and light blue: sadness 	<ol style="list-style-type: none"> 1. He realized that art can be a very healing thing that can make you feel relaxed and enhance your mood and mental health. He mentioned feeling very relaxed and he really enjoyed talking with someone he felt he could trust and feel comfortable with 2. The participant H was able to connect himself with the qualities that his dog possessed as it seemed as if part of his identity was found within his dog
I (ASD)	<ol style="list-style-type: none"> 1. Straight lines: direction of her thoughts 2. Blue: 3. Beach (sand, sun, water, birds, starfish and clouds): relaxing/soothing 	<ol style="list-style-type: none"> 1. As the participant analyzed the drawing during the interview session she came to several conclusions about herself that she didn't know before engaging in the art task. 2. She was able to better understand why she behaves in certain ways and how that makes her feel emotionally 3. The repetitive movements she made with her hand as she drew

Participant Letter	Process of Art Making	Participants Experience
		helped her focus too. When she was drawing she felt very relaxed, focused and steady 4. The repetitive hand movements while drawing helped her focus and finish the task without feeling anxious.

Table 13

5.5.2 Participants focused on making meaning and constructed a personal sense of self

The results indicated that participants were able to make meaning and constructed a personal sense of self when discussing and engaging with art. The same trend was found for both groups (with and without ASD). The post-drawing interview sessions were analyzed (specifically, questions 1, 4, 5, 6 and 7 since those questions directed participants to discuss the meaning behind their drawings) and a comparison was made between individuals with and without ASD. The pie charts below portray a visual representation of the division of content regarding meaning and identity versus external content.

Comparison Between Meaningful Content Versus External Content

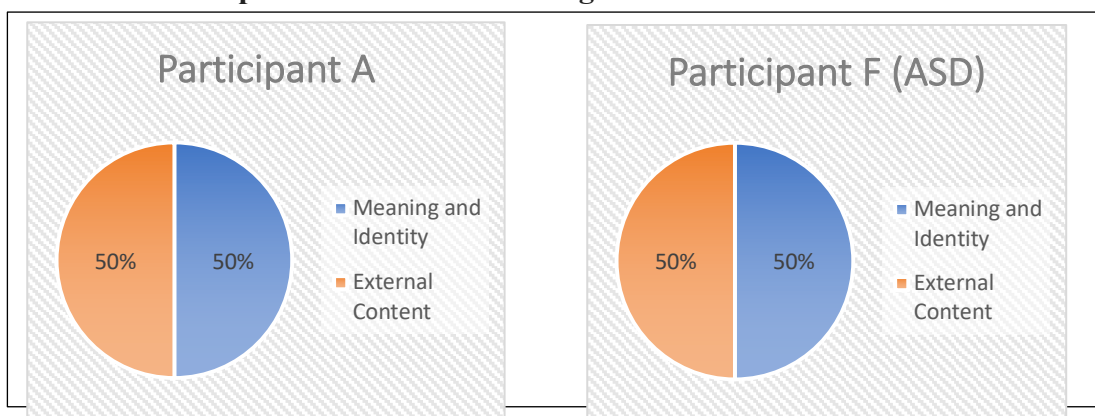


Figure 3.1

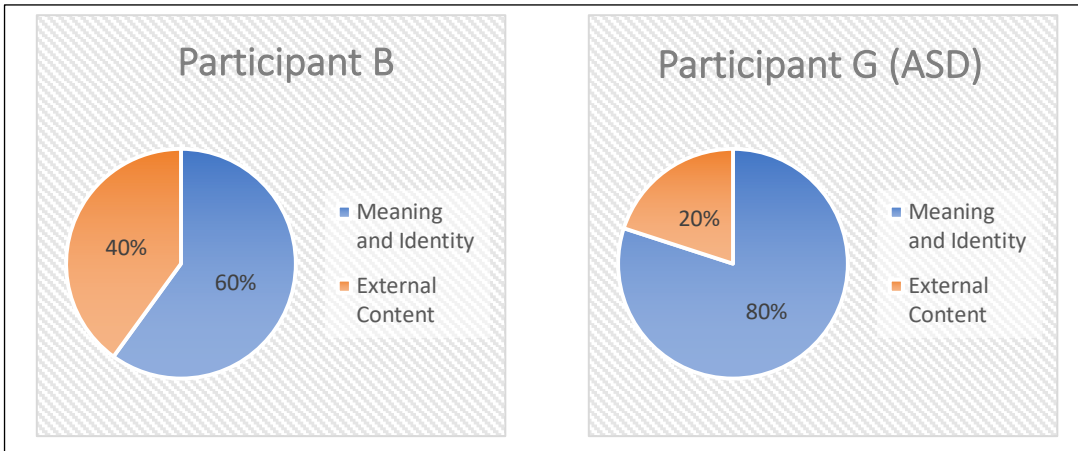


Figure 3.2

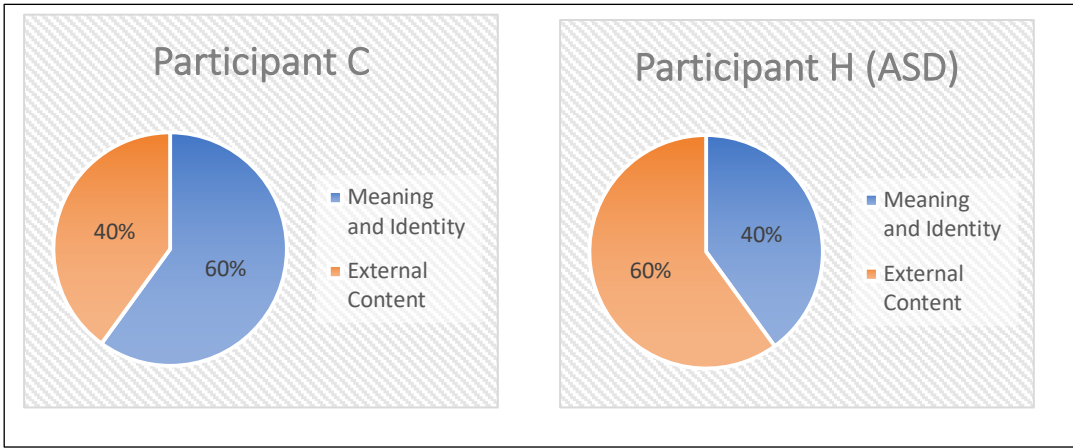


Figure 3.3

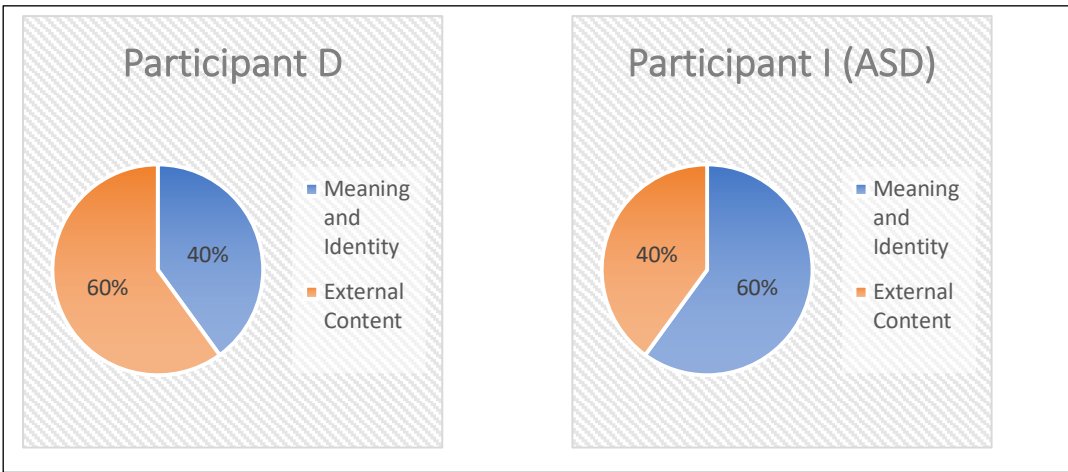


Figure 3.4

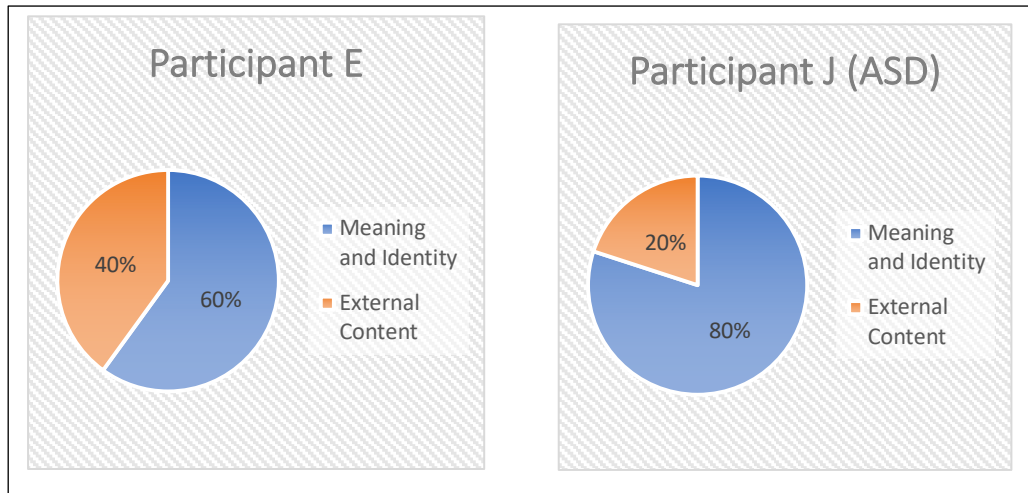


Figure 3.5

Three out of the five participants who were not diagnosed with ASD focused on making meaning and were able to construct a personal sense of self (participants B, C and E). In contrast, one participant focused on external content and did not engage in constructing a personal sense of self (participant D). Likewise, the remaining participant disclosed an equal amount of content regarding meaning and external content (participant A). Similarly, three out of the five participants diagnosed with ASD focused on making meaning and were able to construct a personal sense of self (participants G, I and J). One participant focused on external content and did not construct a personal sense of self (participant H). The remaining participant disclosed an equal amount of content regarding meaning and external content (participant F). Therefore, both groups (with and without ASD) showed the same trend. During the interview session, participants would often create their pictures with the initial thought of assuming they know what the drawing means to them, however, when discussing the drawing they would delve into a self-analysis process that would lead them to discover new qualities about themselves. For example, initially participant F (diagnosed with ASD) indicated not being able to make sense of his drawing, however, he didn't realize the amount of emotional response and discussion he

contributed by merely looking at his drawing. Participant F felt “freaked out” because he wasn’t aware about the amount of meaning conveyed within his drawing (he learned that he is willing to do what it takes to impress others but is never truly stratified with himself). Likewise, participant I (diagnosed with ASD) was also able to reach several conclusions about herself that she didn’t know before engaging in the art task. She was able to better understand why she behaves in certain ways and became self-aware of the changes she wants to make in her life to become a better individual. Furthermore, participants were more willing to attribute meaning within their drawings as they spent time discussing how their drawings relate to themselves. Meaning was found when the participants felt they could be vulnerable and discuss various topics without being judged. It was a safe place that participants could express anything they wanted as they worked through understanding themselves and who they are as individuals. This allowed participants to feel a sense of control as they attributed meaning to their drawings without needing to follow certain expectations. The art participants created was a form of language they could only understand since it was personal, however, when they decided to discuss it with someone else it became a part of their identity.

5.5.3 Using art enhanced their mood and allowed them to share their emotions more appropriately

The majority of participants in both groups (with and without ASD) expressed higher levels of enhanced mood and were able to share how they felt in a clear and appropriate manner. No difference was found between the groups. Participants expressed feeling better, relieved, positive, comfortable, relaxed and happy. It was evident that after engaging within the artwork they became connected with themselves which helped heal, relieve and restore a healthier mindset and mood. The process of completing a task and experiencing the finished product (the

artwork) produced an irreplaceable sense of productivity and worth which translated into an enhanced mood. Likewise, the style participants chose to create the artwork allowed them to share their emotions in a more appropriate manner. The participants selection of tools (oil pastels, crayons, pencil crayons, pencils, markers, etc) provided them a comfortable way to express their emotions without feeling constricted. Using different art tools allowed participants to express emotions in a particular and specific manner. For example, participant E used dark paint and a sponge like pattern to express her anger that she manifests from a toxic relationship. The use of paint, style and texture all articulated feelings of anger and hate which she later discussed during the interview sessions. Therefore, participants were able to communicate their emotions in the way they used the tools. The chart below (table 14) portrays each participants method of sharing emotions and its relationship with their mood.

Sharing Emotions and its Relationship with Participants Mood

Participant Letter	Method of Sharing Emotions	Mood
A	Focused on the paint because it allowed him to express his emotions in a gentle way	Positive feelings: “intrigued, challenged, growth”
B	Focused on the liner perspective of the drawing	Positive feelings: “good, didn’t feel nervous, open”
C	Focused on painting and colours since it’s more personalized	Positive feelings: “excited, safe”
D	Using pencil helped him be precise when sharing emotion	Negative feelings: “sad, weird, opening up too much”
E	Focused on the paint because she could mix colours	Positive feelings: “enjoyed the task, comfortable”
F	Used pencil to express his emotions since he wanted to draw real objects	Positive feelings: “good, enjoyed the task”
G	Used oil pastels because he was able to express himself better by using colour	Positive feelings: “comfortable, emotional in a good way, expressive”
H	The participant focused on the most aesthetically	Positive feelings: “comfortable, healing,

	pleasing tools which were the oil pastels	relaxed, enhanced mood, better mental health”
I	Focused on a simple and direct way of drawing. Used crayons to get the message across	Positive feelings: “comfortable, meaningful feeling, fun, enjoyed it”
J	Able to stay focused on specific objects in the picture which helped communicate about it	Positive feelings: “good, pictures express more than words, enjoyed the task, felt better, happy”

Table 14

CHAPTER SIX: ETHICAL CONSIDERATIONS

Ethical considerations during this research study were examined and implemented to the fullest extent possible. This research project involved possible benefits and risks that are worth noting. The benefit the participants might have experienced by participating in this study was gaining a greater knowledge about how art can emotionally affect them and the way they could interact with art. On the other hand, one of the risks the participants might have encountered was being upset or made uncomfortable by the questions asked during the third stage of the study when recalling disturbing memories, experiences or emotions that were provoked. Overall, participants were told they could stop participating in the study at any time, for any reason, if that is what they decided. In the event where participants withdraw from the study, all associated data collected would be immediately destroyed.

7.1 Confidentiality

The research study was completely confidential and the information obtained in the study was securely stored by using plastic dividers that contained the material obtained during the study. The dividers were used to ensure that each participant’s information was organized in a way that prevented anything from getting lost. Also, code names were used to protect the participants names and to maintain anonymity (the names of the participants were not attached to

any task they completed during the study to guarantee all information was kept confidential).

The information obtained was only accessible to the researcher and supervisors involved in the study. Any data obtained from participants for this study was kept for two (2017-2018) years and will be destroyed after the study is officially complete. Furthermore, a full explanation of the research study was provided prior to the participant's participation.

7.2 Informed Consent

A full detailed document of the informed consent was provided to the participants prior to being asked to participate in the study. The participants participation in the study was completely voluntary and they could have stopped participating at any time. The participants' were told that their decision not to volunteer did not influence the relationship they had with the researchers or study staff or the nature of the relationship with York University either now, or in the future. The informed consent document can be found in the appendix A section.

7.3 Additional Remarks

As a researcher, I have a responsibility to ensure participant confidence and safety when disclosing personal information. As my participants are adults, each signed a statement indicating that they were aware of what the research asked of them. Still, I found as a researcher with a different lived experience than those of my participants, the emotions that surfaced for participants raised many ethical questions. These questions are not resolved by declaring identity positions because emotional life is so unique to each. For this reason, I took an attentive and sensitive approach to my participant's responses to their feelings. I was also careful to make boundaries between myself as a researcher and the emotional responses I was studying. When discussing personal information, I would listen attentively but did not ask them to elaborate on

topics they did not want to further discuss. When taking this approach, I noticed the participants felt at ease when sharing information they willingly wanted me to know. I did not encounter any participants who felt uneasy about the questions proposed but noticed their desire to share their stories during the interview sessions. Although I did not anticipate the strong emotional responses I received, I learned that once participants felt safe, they felt strongly about wanting to express their emotions. As a researcher, I listened and asked them to let me know when they wanted to move onto the next question. By doing this, I wanted them to have full control over how much they wanted to share (my role was simply to listen attentively and create a safe space for them to express themselves comfortably).

I believe that my study met the parameters of ethics as set out by York's research guidelines. Although this study did not encounter any ethical problems, I am aware that by disclosing personal information participants could have felt uneasy which is why I also provided participants with contact information about services that York University offers such as Personal Counselling and Development Services. On reflection, I recognize that other factors such as race, gender, and social class play a significant role in the analysis of the data. These factors were not the focus of the study. It would be interesting to untangle these factors in the future to understand how they played a role within the research study. Overall, I acknowledge this study is limited but it has raised several questions about how art can be valuable to individuals with ASD and without. It would be interesting to further investigate the role of art within the classroom among individuals with ASD.

CHAPTER SEVEN: DISCUSSION AND CONCLUSIONS

It is evident that one of the most dominant characteristics that individuals with Autism Spectrum Disorder struggle with is the inability to express deep emotions with others. This

creates barriers for individuals with ASD to create meaningful relationships as they are unable to fully express themselves. This study explored whether art could be used to facilitate communicating emotions among individuals with ASD. It looked at whether active versus passive participation with art increased or decreased their ability to communicate emotions. Likewise, this study examined how art could be used as an alternative form of communication. Previous research has found that art could potentially be used as an alternative way to communicate emotions (Batson, 2010). Some reoccurring themes found in the literature suggest that their artistic abilities remain intact (Chatterjee, 2015). Artistic techniques can communicate mood, emotions and personal narratives (Kellman, 1999). Participation with art increases the expression of emotions for individuals with ASD (Batson, 2010). Similarly, this study's hypothesis was proven to be correct. Art is a promising alternative mechanism that can facilitate communicating emotions among individuals with ASD. Specifically, the GSR levels in this study found that individuals with ASD feel emotions while creating art. Using active participation with concrete art increased their ability to communicate emotions and art facilitated communicating emotions as they appeared to experience themselves in the art making process and were able to focus on meaning while constructing a personal sense of self and enhancing their mood.

7.1 Possible Explanations Based on Results

In particular, a previous study by Koo (2008) examined the relationship between children's perceptual and cognitive processes and found these remain intact when creating art for individuals with ASD (Koo, 2008). Stemming from this research, this study's GSR levels found that individuals with ASD felt emotionally aroused when looking at a particular face which matched the emotions they previously drew. Not only were they able to create art but they were able to distinguish the emotions they were feeling and connect them with their drawings in a

personal way. Moreover, it was interesting to find that participants level of communication and expressing emotions was higher after creating art. One possible explanation for this finding could be derived from the James-Lange Theory of emotions which suggests that when people view external stimulus this leads to a physiological reaction (James 1922). Since the participants in this study observed their artwork (external stimulus), this could have generated physiological arousal which motivated them to communicate their emotions. For example, participant C created a concrete drawing of a man which she describes as being her tormentor. When viewing this drawing, the participant could have felt a physiological reaction of fear which motivated her to communicate these emotions during the interview session.

Likewise, previous theories suggested art doesn't need to be a type of therapy or treatment but is a way of expressing people's humanity (Nadeau, 2008). In a similar way, this study found that when individuals engaged in active structured art, specifically drawing concrete art, they were able to better make sense of their drawings and demonstrated increased levels of communicating emotions. Individuals with ASD seemed to prefer structured and concrete art work as it helped them focus on the content and meaning which ultimately made it easier for them to communicate and express their emotions. In contrast, this study found that when individuals with ASD created abstract art, they were unable to focus on their drawing as they alluded to external content which made it harder for them to communicate and express their emotions. The figure below (figure 3) is a visual representation that shows this relationship when individuals with ASD engaged in concrete and abstract art.

A Comparison Between ASD Engagement with Concrete and Abstract Art

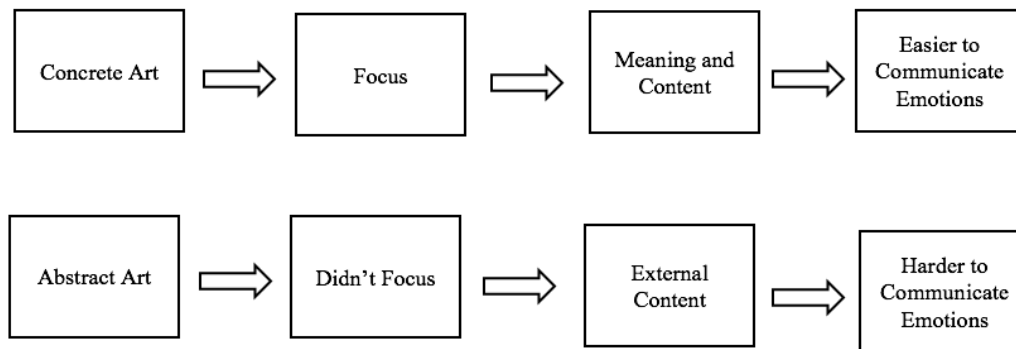


Figure 4

Therefore, the key element that individuals with ASD demonstrated when they engaged with concrete art was the ability to “focus.” The concrete drawings gave them a sense of direction as they were able to attribute meaningful explanations that related with their sense of identity in a clear and consistent manner. In contrast, when they engaged within abstract art it became difficult for them to focus on certain elements and attribute meaning as they were unable to connect with the drawing on a personal level.

Furthermore, this study found that art helped participants connect their thoughts, feelings, perceptions and understand who they are while relieving overwhelming emotions. One possible explanation as to how art provided them with those elements is that the hand movements participants demonstrated to make art were embodied in the art work they created which allowed them to relive the emotions they manifested within their drawings. The simple hand movements gave them an outlet to release their thoughts and understandings of themselves in a tangible manner. Similarly, individuals with ASD indicated enhanced mood when finishing the artwork they created which could be because of the process of creating art. Individuals with ASD find it difficult to start and complete a task without losing interest and focus. However, when they went

through the process of starting and finishing their drawings, the completion of the art work might have enhanced their overall mood.

6.2 Limitations and Restrictions

After critically analyzing the research study, there are limitations that are important to note. First, the size of the participants selected to participate in the study was very small (ten participants) which hinders the study's reliability. Although this was a pilot study, a reasonable number of participants to recruit for this type of study would be twenty to thirty individuals. Doubling the number of participants would make it easier to find clear and consistent trends when analyzing the results. This would strengthen the study's overall reliability. Another limitation was the division of gender among individuals. In group two (individuals without ASD) three individuals were female and two were male while in group one (individuals diagnosed with ASD) three individuals were male and two were female. It would've been ideal to double the amount of participants (twenty instead of ten) and place three male participants in group two and two females while including three females group one and two male participants. This would have provided clear results regarding gender differences. Similarly, another limitation was the number of participants that engaged within passive art as they were less than the participants that engaged with active art (three out of the ten participants engaged in passive art while the remaining seven engage in active art). It would have been ideal to have an equal number of participants in each active and passive group to ensure a consistent pattern existed when analyzing the results. Moreover, another limitation was that before starting the GSR and face task participants were asked to relax for a couple of seconds and this was not the same for each participant. Next time, it would be beneficial to set one to two minutes for participants to relax before measuring their GSR levels. This would eliminate any extraneous factors and would

ensure consistency when measuring the GSR levels of each participant. In addition, another limitation was that individuals diagnosed with ASD were only required to complete the “face task” questionnaire. Next time, to ensure consistent results having all ten participants complete the “face task” questionnaire would be ideal. Furthermore, in relation to the method used to analyze the results, having another researcher double check the levels attributed to each participant regarding the experiencing scale would have eliminated potential bias the researcher could have made and ensured subjective results. Lastly, the majority of participants involved in the study were not ethnically diverse. It would be interesting to include more diverse participants and evaluate differences in the results. It is also important to note that the “universal faces” used within the study were all white and middle age individuals and therefore do not reflect age and ethnic diversity. It would be interesting to evaluate the results after including diverse faces that represent a wide range of populations.

6.3 Future Investigation

Future investigation could focus on replicating the study across different age groups and among individuals with different levels of autism. Particularly, it would be advantageous to replicate the study with younger participants that are in elementary or middle school (ages ranging from eight to fourteen years old). It would be interesting to examine the way younger individuals interact with art and whether they are able to create meaning when engaging in the art making process. Similarly, it would be interesting to administer this study among individuals across the autism spectrum (lower functioning individuals). Stronger results might be found since it could benefit individuals that severely struggle with communicating their emotions. In the future, it would be interesting to examine individuals creating art within an interactive social environment such as a classroom setting. A comparative analysis could be done between private

and public setting to understand which environment is better suited for individuals with ASD. Lastly, different art tasks that would further heighten participants creativity and artistic abilities could be given instead of the two tasks administered in this study. It would be interesting to examine whether the quality of the art tasks given would impact their ability to effectively communicate emotions.

6.4 Contribution to New Knowledge

The results of this study presented some new findings that were not previously investigated in this unique way. Previous research suggests that little is known about how individuals with ASD engage in spontaneous verbal emotion (Muller, 2005). This study incorporated the GSR component as it examined the physiological impact art has on individuals with ASD. Contrary to previous research done (Zalla et al., 2014), this study suggests that participants with ASD feel emotions and are able to experience them while engaging in drawing. This study found that using art can facilitate communicating emotions. Similarly, this study found that individuals with ASD are able to distinguish and identify basic emotional expressions (seven universal emotions). Overall, this study brought three different disciplines together (psychology, art and education) by analyzing the ways in which they work together in a purposeful way. Moreover, the study used an interdisciplinary methodological approach which is unique and a contemporary approach to methodology.

6.5 Conclusions

In conclusion, the results of the study support the hypothesis that art can be used to facilitate communicating emotions among individuals with ASD. The GSR results indicated that individuals with ASD are able to feel emotions while creating art and personally connect with these emotions. Likewise, active participation with concrete art was found to increase their

ability to communicate emotions in comparison with passive engagement with abstract art.

Individuals with ASD seemed to prefer structured and concrete art work as it helped them focus on the content and meaning which ultimately made it easier for them to communicate and express their emotions. Similarly, participants appeared to experience themselves in the art making process as they focused on creating meaning and constructing their personal sense of self as it enhanced their mood and allowed them to share their emotions more appropriately.

These findings suggest that the next steps to take would be to incorporate an art based intervention program within the education system that individuals with ASD can access when they are in need of understanding their emotions and wanting to communicate it with others. It is crucial to note that this intervention needs to incorporate a structured based art model that would allow individuals with ASD to engage in active artwork (concrete art). Another critical element that needs to be included is creating a safe space for individuals to create art that is non-threatening and inclusive. Individuals with ASD should be given complete control over when they would want to engage with art as it should be accessible at all times. Moreover, educators need to be trained in art education as a way of accommodating students and integrating them with the classroom. Art education can address problems in learning and has a role to play for students who are in need of assistance. Overall, this model should be geared towards positively contributing in the lives of individuals with ASD.

REFERENCES

- ADInstruments. (2008). *GSR Owner's Guide*. Retrieved from <http://www.go-gddq.com/gddq.com/down/2011-11/11112205312574.pdf>
- Azad, G. F., Locke, J., Kasari, C., & Mandell, D. S. (2017). Race, disability, and grade: Social relationships in children with autism spectrum disorders. *Autism, 21*(1), 92-99.
doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1177/1362361315627792>
- Baird, G., Simonoff, E., Pickles, A., Chandler, S., Loucas, T., Meldrum, D., & Charman, T. (2006). Prevalence of disorders of the autism spectrum in a population cohort of children in south thames: The special needs and autism project (SNAP). *The Lancet, 368*(9531), 210-215. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/621408971?accountid=15182>
- Barrett, L. K., & Long, B. V. (2012). The moore method and the constructivist theory of learning: Was R. L. moore a constructivist? *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies, 22*(1), 75-84.
doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1080/10511970.2010.493548>
- Batson, R. D. M. (2010). Effects of an arts integration curriculum versus a non-arts integration curriculum on the school experiences of kindergarten through middle school students with autism (Order No. 3413020). Available from ProQuest Dissertations & Theses Global: Social Sciences; ProQuest Dissertations & Theses Global: The Arts. (1370975246). Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/1370975246?accountid=15182>
- Burkett, K., Morris, E. Manning-Courtney, P., Anthony, J., & Shambley-Ebron, D. (2015).

African American families on autism diagnosis and treatment: The influence of culture. *Journal of Autism and Developmental Disorders*. doi:10.1007/s10803-015-2482-x.PubMedGoogleScholar

Burns, C. O., & Matson, J. L. (2017). An evaluation of the clinical application of the DSM-5 for the diagnosis of autism spectrum disorder. *Expert Review of Neurotherapeutics*, 17(9), 909-917. doi:http://dx.doi.org.ezproxy.library.yorku.ca/10.1080/14737175.2017.1351301

Charlop-Christy, M., Malmberg, D. B., Rocha, M. L., & Schreibman, L. (2008). Treating autistic spectrum disorder. In R. J. Morris, & T. R. Kratochwill (Eds.), *The practice of child therapy*. (4th ed.) (pp. 299-335) Lawrence Erlbaum Associates Publishers, Mahwah, NJ. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/621832359?accountid=15182>

Chatterjee, A. (2015). *The neuropsychology of visual art. Art, aesthetics and the brain*. (pp. 341-356) Oxford University Press, New York, NY. doi:http://dx.doi.org/10.1093/acprof:oso/9780199670000.003.0017

Chilvers, R. (2008). *The hidden world of autism: Writing and art by children with high-functioning autism* Jessica Kingsley Publishers, London. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/622121441?accountid=15182>

Collingwood, R. G., 1938, *The Principles of Art*, London: Oxford University Press.

- Cutting, J. (2014). Review of autism and the brain: Neurophenomenological interpretation. *Cognitive Neuropsychiatry*, 19(2), 184-188.
doi:<http://dx.doi.org/10.1080/13546805.2013.827858>
- Davis, J. I., Senghas, A., & Ochsner, K. N. (2009). How Does Facial Feedback Modulate Emotional Experience? *Journal of Research in Personality*, 43(5), 822–829.
<http://doi.org/10.1016/j.jrp.2009.06.005>
- Davis, K., Christodoulou, J., Seider, S., & Gardner, H. (2011). The theory of multiple intelligences. In R. J. Sternberg, & S. B. Kaufman (Eds.), *The cambridge handbook of intelligence; the cambridge handbook of intelligence* (pp. 485-503, Chapter xix, 984 Pages) Cambridge University Press, New York, NY.<http://dx.doi.org/10.1017/CBO9780511977244.025> Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/881001008?accountid=15182>
- Derby, J. K. (2010). *Art education and disability studies perspectives on mental illness discourses* (Order No. AAI3378234). Available from PsycINFO. (622205190; 2010-99071-084). Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/622205190?accountid=15182>
- Dror, O. E. (2017). Deconstructing the “two factors”: The historical origins of the Schachter–Singer theory of emotions. *Emotion Review*, 9(1), 7-16.doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1177/1754073916639663>
- Durrani, H. (2014). Facilitating attachment in children with autism through art therapy: A case study. *Journal of Psychotherapy Integration*, 24(2), 99-108. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/1534281197?accountid=15182>

- Eack, S. M., Mazefsky, C. A., & Minshew, N. J. (2015). Misinterpretation of facial expressions of emotion in verbal adults with autism spectrum disorder. *Autism, 19*(3), 308-315.
doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1177/1362361314520755>
- Evers, K., Steyaert, J., Noens, I., & Wagemans, J. (2015). Reduced recognition of dynamic facial emotional expressions and emotion-specific response bias in children with an autism spectrum disorder. *Journal of Autism and Developmental Disorders, 45*(6), 1774-1784.
doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1007/s10803-014-2337-x>
- Fellous, J. (2006). A mechanistic view of the expression and experience of emotion in the arts. *The American Journal of Psychology, 119*(4), 668-674.
doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.2307/20445371>
- Freed, D., & Burszty, A. M. (2012). Art-making with young children with disabilities. *Young children and the arts: Nurturing imagination and creativity; young children and the arts: Nurturing imagination and creativity* (pp. 103-118, Chapter xv, 221 Pages) IAP Information Age Publishing, Charlotte, NC. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/1030207106?accountid=15182>
- Gamlin, C. (2017). When Asperger's disorder came out. *Psychiatria Danubina, 29*, 214-218.
Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/1992036602?accountid=15182>
- Gendlin, E. (1968). Chapter 26: The experiential response. In *Use of interpretation in treatment*. Grune & Stratton. Retrieved from http://www.focusing.org/fot/experiential_response.asp
- Gridley, M. C. (2013). Preference for abstract art according to thinking styles and

- personality. *North American Journal of Psychology*, 15(3), 463-481. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search.proquest.com/docview/1542015561?accountid=15182>
- Guiou, T. D. (2007). Masking of disappointment in children with autism Available from PsycINFO. (622013098; 2007-99009-040). Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/622013098?accountid=15182>
- Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14(3), 575-599. doi:10.2307/3178066
- Hazen, E. P., McDougle, C. J., & Volkmar, F. R. (2013). Changes in the diagnostic criteria for autism in DSM-5: Controversies and concerns. *The Journal of Clinical Psychiatry*, 74(7), 739-740. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.4088/JCP.13ac08550>
- Hogan, S. (2016). *Art therapy theories: A critical introduction* Routledge/Taylor & Francis Group, New York, NY. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/1765995840?accountid=15182>
- Hospers, J. (1971). *Artistic expression*. Appleton-Century-Crofts, New York, N.Y
- Hospers, J. (1955). The Concept of Artistic Expression. *Proceedings of the Aristotelian Society*, 55, new series, 313-344. Retrieved from <http://www.jstor.org/stable/4544551>
- Hudepohl, M. B., Robins, D. L., King, T. Z., & Henrich, C. C. (2015). The role of emotion perception in adaptive functioning of people with autism spectrum disorders. *Autism*, 19(1), 107-112. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1177/1362361313512725>
- Ikemi, A. (2005). Carl rogers and eugene gendlin on the bodily felt sense: What they share and

where they differ. *Person-Centered and Experiential Psychotherapies*, 4(1), 31-42.
doi:<http://dx.doi.org/10.1080/14779757.2005.9688366>

James, W. (1922). The emotions. In C. G. Lange, & W. James (Eds.), *The emotions, vol. 1; the emotions, vol. 1* (pp. 93-135, 135 Pages) Williams & Wilkins Co, Baltimore, MD.
doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1037/10735-003> Retrieved from
<http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/620755852?accountid=15182>

Johnson, C. (2007). Art therapy in the hospice setting. In D. B. Arrington (Ed.), *Art, angst, and trauma: Right brain interventions with developmental issues; art, angst, and trauma: Right brain interventions with developmental issues* (pp. 208-229, Chapter xxiv, 254 Pages) Charles C Thomas Publisher, Springfield, IL. Retrieved from
<http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/621853900?accountid=1518>

Kadak, M. T., Demir, T., & Doğangün, B. (2013). *Recognition of face and emotional facial expressions in autism*, 5(1), 15-29. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.5455/cap.20130502>

Kellman, J. (1999). Drawing with peter: Autobiography, narrative, and the art of a child with autism. *Studies in Art Education*, 40(3), 258-274. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/1320682946?accountid=15182>

Kikuchi, T., & Koga, S. (2001). Recognition of others' and own facial expressions and production of facial expression: Children and adults with autism. *Japanese Journal of Special Education*, 39(2), 21-29. Retrieved from <http://ezproxy.library.yorku.ca/login?>

url=https://search-proquestcom.ezproxy.library.yorku.ca/docview/619632119?accountid=15182

Klein, M. H., Mathieu-Coughlan, P., & Kiesler, D. J. (1986). The experiencing scales. In L. S. Greenberg, & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook; the psychotherapeutic process: A research handbook* (pp. 21-71, Chapter xvii, 741 Pages) Guilford Press, New York, NY. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/617349540?accountid=15182>

Klein, M. H., Mathieu-Coughlan, P., & Kiesler, D. J. (1986). The experiencing scales. In W. M. Pinsof, & L. S. Greenberg (Eds.), *Guilford clinical psychology and psychotherapy series* (pp. 21-71). New York, NY, US: Guilford Press

Koo, S. (2008). Reexamining the creative artistic ability of children with autism (Order No. 3337831). Available from ProQuest Dissertations & Theses Global. (304604696). Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/304604696?accountid=15182>

Kozbelt, A., & Seeley, W. P. (2007). Integrating art historical, psychological, and neuroscientific explanations of artists' advantages in drawing and perception. *Psychology of Aesthetics, Creativity, and the Arts, 1*(2), 80-90

Lai, Meng-Chuan, M.D., PhD., Ruigrok, A. N. V., PhD., Baron, A. S., PhD., Lombardo, M. V., PhD., Chakrabarti, B., PhD., Ameis, Stephanie H, M.D., M.Sc., . . . Baron-Cohen, S. (2016). 1.11 ADULTHOOD GENDER VARIANCE IN MALES AND FEMALES WITH AUTISM SPECTRUM DISORDER. *Journal of the American Academy of Child and Adolescent Psychiatry, 55*(10) Retrieved from

<http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/1841700677?accountid=15182>

Leonard, H., Dixon, G., Whitehouse, A. J. O., Bourke, J., Aiberti, K., Nassar, N., . . . Glasson, E. J. (2010). Unpacking the complex nature of the autism epidemic. *Research in Autism Spectrum Disorders, 4*(4), 548-554. doi://<http://dx.doi.org.ezproxy.library.yorku.ca/10.1016/j.rasd.2010.01.003>

Matson, L. J., & Kozlowski, M. A. (2010). The increasing prevalence of autism spectrum disorders. *Research in Autism Spectrum Disorders, 5* (2011) 418-425. doi:10.1016/j.rasd.2010.06.004

Mayes, S. D., & Calhoun, S. L. (2011). Impact of IQ, age, SES, gender, and race on autistic symptoms. *Research in Autism Spectrum Disorders, 5*(2), 749-757. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1016/j.rasd.2010.09.002>

Mazefsky, C. A., Herrington, J., Siegel, M., Scarpa, A., Maddox, B. B., Scahill, L., & White, S. W. (2013). The role of emotion regulation in autism spectrum disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 52*(7), 679-688. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1016/j.jaac.2013.05.006>

McCarthy, J. (2007). Children with autism spectrum disorders and intellectual disability. *Current Opinion in Psychiatry, 20*(5), 472-476. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1097/YCO.0b013e32821f6095>

Milbrath, C., & Siegel, B. (1996). Perspective taking in the drawings of a talented autistic child. *Visual Arts Research, 22*(2), 56-75. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/619071864?accountid=15182>

Moseley, R. L., Shtyrov, Y., Mohr, B., Lombardo, M. V., Baron-Cohen, S., & Pulvermüller, F.

- (2015). Lost for emotion words: What motor and limbic brain activity reveals about autism and semantic theory. *NeuroImage*, *104*, 413-422.
doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1016/j.neuroimage.2014.09.046>
- Myers, D. G. (2004). *Theories of Emotion*. Psychology: Seventh Edition, New York, NY: Worth Publishers
- Nadeau, R. (2008). Using the visual arts to expand personal creativity. In B. Warren (Ed.), *3rd ed.; using the creative arts in therapy and healthcare: A practical introduction (3rd ed.)* (3rd ed. ed., pp. 43-63, Chapter xiii, 271 Pages) Routledge/Taylor & Francis Group, New York, NY. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/622021746?accountid=15182>
- Plutchik, R. (1962). *The emotions: Facts, theories and a new model* Crown Publishing Group/Random House, New York, NY. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest.com.ezproxy.library.yorku.ca/docview/615429007?accountid=15182>
- Pelech, J. (2010). *The comprehensive handbook of constructivist teaching: From theory to practice* IAP Information Age Publishing, Charlotte, NC. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/622139520?accountid=15182>
- Phillips, P. P., & Stawarski, C. A. (2008). *Data collection: Planning for and collecting all types of data* Pfeiffer/John Wiley & Sons, San Francisco, CA. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search.proquest.com/docview/622174996?accountid=15182>
- Richard, D. A., More, W., & Joy, S. P. (2015). Recognizing emotions: Testing an intervention

for children with autism spectrum disorders. *Art Therapy*, 32(1), 13-19.

doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1080/07421656.2014.994163>

Richardson, J. F. (2016). Art therapy on the autism spectrum: Engaging the mind, brain, and senses. In D. E. Gussak, & M. L. Rosal (Eds.), *The wiley handbook of art therapy; the wiley handbook of art therapy* (pp. 306-316, Chapter xxxi, 874 Pages) Wiley-Blackwell. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search.proquest.com/docview/1905845439?accountid=15182>

Rieffe, C., Terwogt, M. M., & Kotronopoulou, K. (2007). Awareness of single and multiple emotions in high-functioning children with autism. *Journal of Autism and Developmental Disorders*, 37(3), 455-65. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1007/s10803-006-0171-5>

Rieffe, C., Terwogt, M. M., & Stockmann, L. (2000). Understanding atypical emotions among children with autism. *Journal of Autism and Developmental Disorders*, 30(3), 195-203.

Springgay, S. (2005). Inside the visible: Arts-based educational research as excess, *Journal of Curriculum and Pedagogy*, 1 (1), 8-18. Image selected for cover of journal.

Schweizer, C., Knorth, E. J., & Spreen, M. (2014). Art therapy with children with autism spectrum disorders: A review of clinical case descriptions on 'what works'. *The Arts in Psychotherapy*, 41(5), 577-593. doi:<http://dx.doi.org/10.1016/j.aip.2014.10.009>

Schweizer, C., Spreen, M., & Knorth, E. J. (2017). Exploring what works in art therapy with children with autism: Tacit knowledge of art therapists. *Art Therapy*, 34(4), 183-191. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1080/07421656.2017.1392760>

Tell, D. (2010). *Recognition of emotions from facial expression and situational cues in children*

- with autism* (Order No. AAI3387427). Available from PsycINFO. (754057821; 2010-99120-309). Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/754057821?accountid=15182>
- Thoemke, J. (2012). *Art Therapy for Children with ASD, ADHD & Siblings*. The Faculty of the Adler Graduate School.
- Travers, J. C., Krezmien, M. P., Mulcahy, C., & Tincani, M. (2014). Racial disparity in administrative autism identification across the united states during 2000 and 2007. *The Journal of Special Education, 48*(3), 155-166.doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1177/0022466912454014>
- Tsai, L. Y. (2014). Impact of DSM-5 on epidemiology of autism spectrum disorder.*Research in Autism Spectrum Disorders, 8*(11), 1454-1470.doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1016/j.rasd.2014.07.016>
- Tuchman, R. (2003). Autism. *Neurologic Clinics, 21*(4), 915-932. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/620194624?accountid=15182>
- Van Paasschen, J., Bacci, F., & Melcher, D. P. (2015). The influence of art expertise and training on emotion and preference ratings for representational and abstract artworks. *PLoS ONE, 10*(8), 21. Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/1717509969?accountid=15182>
- Wilkinson, R. (1992). Art, emotion, and expression Open Univ. Retrieved from <http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/42866155?accountid=15182>

- Winter, K. A. (2001). *Cognitive emotion theory: Cognitive appraisals, core themes, and individual differences (richard S. Lazarus)* (Order No. AAINQ58166). Available from PsycINFO. (619717694; 2001-95020-034). Retrieved from <http://ezproxy.library.yorku.ca/login?url=https://search-proquest-com.ezproxy.library.yorku.ca/docview/619717694?accountid=15182>
- Wright, B (2014). Prevalence of Autism Spectrum Disorders- Autism and Developmental Disabilities Monitoring Network. Retrieved from <http://www.autismspeaks.ca/>
- Yingling, M. E., Hock, R. M., & Bell, B. A. (2018). Time-lag between diagnosis of autism spectrum disorder and onset of publicly-funded early intensive behavioral intervention: Do race-ethnicity and neighborhood matter? *Journal of Autism and Developmental Disorders*, 48(2), 561-571.
- Zalla, T., Sirigu, A., Robic, S., Chaste, P., Leboyer, M., & Coricelli, G. (2014). Feelings of regret and disappointment in adults with high-functioning autism. *Cortex: A Journal Devoted to the Study of the Nervous System and Behavior*, 58, 112-122. doi:<http://dx.doi.org.ezproxy.library.yorku.ca/10.1016/j.cortex.2014.05.008>

APPENDIX A

INFORMED CONSENT FORM

Study Name: An Analysis of the Use of Art to Facilitate Communicating Emotions among Individuals with ASD.

Researcher Name: Lina Deker, MA Graduate Student

Supervisor(s) Name(s): Professor Yvonne Singer, Dr. Lauren E Sergio, and Dr. Aparna MishraTarc

Information about Researcher: First year Masters Graduate Student, Interdisciplinary Studies, York University.

Purpose of the research:

The purpose of this study is to explore whether art can be used to facilitate communicating emotions among individuals with Asperger's. Specifically, a critical analysis will be conducted to evaluate if there is an association between art and expressing emotions among individuals with Asperger's. Moreover, this research study will further examine whether active participation with art will increase or decrease their ability to express their emotions in comparison with passive participation. The research will be conducted using a device called the Galvanic Skin Resistance (GSR) which measures the electrical resistance of the skin to detect the most sensitive markers for emotional arousal. The GSR will be placed on the participant's finger and the results will appear on a device connected with the individual's finger. The participants will also be asked to draw and use a computer to perform the tasks involved in the study. The study will obtain the data collected in the study reported in a master's thesis (all information is anonymous and kept confidential). The rationale behind conducting this study is to discover an alternative way for individuals with Asperger's to communicate their emotions with others.

What will you be asked to do in the research?

The participants volunteering in this study will be required to participate in three separate stages that requires them to perform specific tasks. However, before introducing them to the first stage, they will be asked to use a device called the Galvanic Skin Resistance (GSR) which will be placed on the participant's finger. The purpose of doing this in the beginning of the study is to achieve a baseline and measure the variable of interest prior to the individual participating in the study. After obtaining the baseline, participants will be divided into two groups and will be given the same task to do but will be asked to perform the task using different methods. The first step will require the participants to draw a picture that depicts the emotions they are feeling at the moment or felt before they walked into the room. The first group which will actively use art will be asked to physically draw (materials will be provided) a picture that expresses the way they are feeling at the moment (or before they walk into the room). In comparison, the second group which will be using art passively will be given a set of pictures that someone else has drawn and will be required to choose one that most matches the emotions they are feeling at the moment (or before they walked into the room). In the second step, the participants will be asked to connect the GSR onto their finger and look at a computer screen which will present seven universal faces that depict various emotions (these include anger, fear, disgust, contempt, joy, sadness and surprise).

As the universal faces show up, the GSR will capture the individuals electrical markers that reveal when the participant felt emotionally aroused. Lastly, the final step is a mini interview that will be conducted by the researcher. The researcher will ask participant to answer questions that are specifically about their drawings they drew or selected in the first step of the study. Furthermore, the researcher will briefly talk with each participant about the picture to see if the participant further discuss the picture and is willing to further communicate their emotions. The overall study will take approximately 55 minutes to complete. If you agree to participate in the study, you will be given a certificate of completion for your time and dedication.

Risks and discomforts:

The risk the participants might encounter is being upset or made uncomfortable by the questions asked during the third stage of the study. Moreover, the participants might find it the GSR clipped onto their finger uncomfortable depending on their comfort level.

Benefits of the research and benefits to you:

The benefit the participants might experience by participating in this study is gaining a greater knowledge about how art can emotionally affect them and the way they can interact with art. Moreover, individuals that participate in this study will be contributing to meaningful research. Similarly, the benefit that I gain is being able to conduct the study and introduce new findings to prior research done on this topic.

Withdrawal from the study:

You may stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any group associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible. If you decide to stop participating, you will still be eligible to receive the promised pay for agreeing to be in the project.

Voluntary participation:

Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the relationship you may have with the researchers or study staff or the nature of your relationship with York University either now, or in the future.

Confidentiality:

The data pertaining to each individual participating in this study will be securely stored through using dividers that will contain the material obtained during the study. The dividers will be used to ensure that each participant's information is organized in a way that prevents anything from getting lost. Also, I will use a "code name" instead of the real name of the participants to ensure that real names are not attached to any tasks they complete during the study and that it's

confidential. The information obtained will only be accessible to the researcher and supervisors involved in the study. Any data obtained from participants for this study will be kept for two (2017-2018) years and will be terminated after the study is officially done. The data will be kept for a duration of two years since my Master's program is two years and I will be using the data to analyze it and achieve results. In the first stage of the study, information will be obtained using the GSR device. In the second stage of the study, information will be collected using a database on the computer. In the final stage of the study, information will be collected through using a tape recorder. I will reassure you that confidentiality will be provided to the fullest extent possible by law.

Questions about the research:

If you have questions about the research in general or about the role you have in the study, please feel free to contact me. This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, you may contact the Senior Manager and Policy Advisor for the Office of Research Ethics.

I _____, consent to participate in the study called "An Analysis of the Use of Art to Facilitate Communicating Emotions among Individuals with Asperger's" conducted by Lina Deker. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature: _____

Date: _____

Participant:

Signature: _____

Date: _____

Principal Investigator: Lina Deker

APPENDIX B

EXPERIENCING SCALE (Klein, Mathieu, Gendlin & Kiesler, 1969)

Scale Stage	Grammatical	Expressive	Paralinguistic	Content
1	No first-person pronouns; past or present tense	Remote, impersonal	Fluent	Impersonal, others' activities or events
2	Personal pronouns; past or present tense	Interested, intellectual	Usually fluent	Ideas, events, actions
3	Personal pronouns; past or present tense	Limited reactions	Some affect indicators, e.g., laughs, sighs	Parenthetical or limited references to feelings
4	Present or past tense	Immediate, expressive	Focused voice, expressions of affect	Subjective experiences and associations
5	Present tense, but past can be included; Subjunctive, tense questions	Immediate, groping, tentative	Dysfluency	Questions about uncertainty in own awareness
6	Present tense or vivid representation of past	Declarative, fresh, real	Exclamation, alternations of dysfluency and fluency, pauses	Directly sensed and emergent feeling
7	Present tense primarily	Affirmative	More fluency than dysfluency	What one "knows" for oneself

Table 2-1 Short Form of Experiencing Scale (Patient)

Stage	Content	Treatment
1	External events; refusal to participate	Impersonal, detached
2	External events; behavioral or intellectual self-description	Interested, personal, self-participation
3	Personal reactions to external events; limited self-descriptions; behavioral descriptions of feelings	Reactive, emotionally involved
4	Descriptions of feelings and personal experiences	Self-descriptive; associative
5	Problems or propositions about feelings and personal experiences	Exploratory, elaborative, hypothetical
6	Felt sense of an inner referent	Focused on there being more about "it"
7	A series of felt senses connecting the content	Evolving, emergent

Note. Copyright 1970 by The Regents of the University of Wisconsin. Revised, 1983.

ART QUESTIONNAIRE

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

QUESTIONS FOR THE INTERVIEW SECTION

Mini Interview on Recalling a Drawing (active & passive participants)

Think of a time when you drew a specific drawing (definition: making lines, shapes, texture, colour and space to organize expressions of ideas, feelings and experiences) and answer the questions based on that specific drawing.

1. Tell me how your drawing looked like? (follow up questions based on the response below).
 - a. Can you remember what emotions(s) you felt while recalling your picture?
 - b. Did you experience any new emotions while explaining your drawing to me?
2. What did you use to create your picture? Specifically, what drawing tools and materials did you use?
3. Can you remember what tools you used that helped you express your emotions the most?
4. If someone was to look at that drawing, what is one thing that you would have wanted that person to know?
5. Recall a specific part of your drawing that you felt most connected with (for example, this can be an object, colour, specific texture, etc). Why did you feel most connected to that area?
6. How do you feel sharing your emotions with me? Are you willing to expand and further describe your experiences and emotions?

This interview will take about 20 min to complete

Post Drawing Mini Interview Questions (active participants)

1. Tell me about your drawing (follow up questions based on the response below).
 - a. What emotions(s) did you feel while drawing your picture?
 - b. Did you experience any other emotions while explaining your drawings to me?
2. What did you use to create your picture? Specifically, what drawing tools and materials did you use?
3. What are the tools that helped you express your emotions the most?
4. Tell me about a part of your drawing that reminds you of a particular experience?
5. If someone was to look at your drawing for the first time, what is one thing that you would like them to know about it?
6. Locate a particular area in your drawing that you felt most connected with yourself while drawing it. Why did you feel most connected to that area?
7. How do you feel sharing your emotions with me? Are you willing to expand and further describe your experiences dealing with such emotions?
8. What did you learn about yourself while completing both the “blind drawing task” and “the shape task?”
9. Did you enjoy this task? Why?

This interview will take about 20 min to complete

Post Drawing Mini Interview Questions (passive participants)

1. Tell me about the drawing you selected (follow up questions based on the response below).
 - a. What emotions(s) did you feel while looking at your picture?
 - b. Did you experience any other emotions while explaining the picture to me?
2. What drawing tools and materials did the artist use to create the picture?
3. What are the tools the artist used to help you express your emotions the most?
4. Tell me about a part of the drawing that reminds you of a particular experience?
5. If someone was to look at your drawing for the first time, what is one thing that you would like them to know about it?
6. Locate a particular area in the drawing that you felt most connected with yourself while looking at it. Why did you feel most connected to that area?
7. How do you feel sharing your emotions with me? Are you willing to expand and further describe your experiences dealing with such emotions?
8. What did you learn about yourself after completing this study?
9. Did you enjoy this task? Why?

This interview will take about 20 min to complete

DRAWING AND SELECTION TASK INSTRUCTIONS

Drawing Section- Instructions (active participants)

Drawing is about making lines, shapes, texture, colour and space to organize expressions of ideas, feelings and experiences (Kozbelt, A., & Seeley, W. P, 2007).

Part A:

Abstract art - abstract art is the use of color, shape, line, form, pattern and texture to create a visual representation (Gridley, 2013).

Blind drawing task: Using a piece of paper (large, medium or small), close your eyes and move your writing tool (coloured pencils, charcoal, etc) freely to create lines, shapes, patterns, doodles or anything you want. While completing this task, think of a situation that made you feel a particular emotion (for example, before drawing think of a time that you felt either sad, happy, angry, etc).

Part B:

Concrete art- is based on geometric imagery and patterns to create a visual representation (Gridley, 2013).

The shape task: Using a piece of paper (large, medium or small), create a drawing using geometric or organic shapes. These can be placed wherever you would like (no guidelines). While completing this task, think of a situation that made you feel a particular emotion (for example, before drawing think of a time that you felt either sad, happy, angry, etc).

*Geometric shapes: are calculated mathematically, generally symmetrical and have specific names.

*Organic shapes: are freeform, irregular and generally do not have a specific descriptive name

*Definitions

Selection Task Section- Instructions (passive participants)

Drawing is about making lines, shapes, texture, colour and space to organize expressions of ideas, feelings and experiences (Kozbelt, A., & Seeley, W. P, 2007).

Instructions:

Please select TWO images, ONE from the abstract pile and ONE from the concrete pile. When selecting these images, make sure you feel connected with it emotionally. For example, a certain art piece might remind you of a particular situation that you felt a certain emotion at the time.

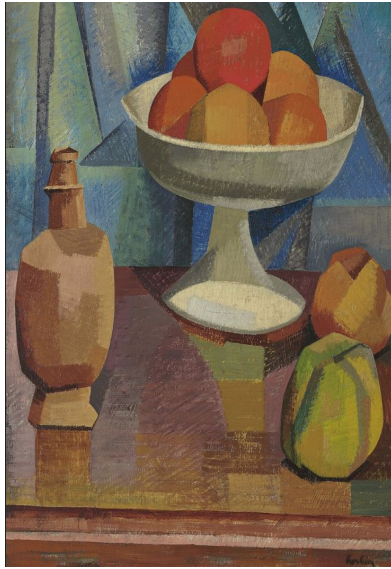
Definitions:

Pile A: *Abstract art* - abstract art is the use of color, shape, line, form, pattern and texture to create a visual representation (Gridley, 2013).

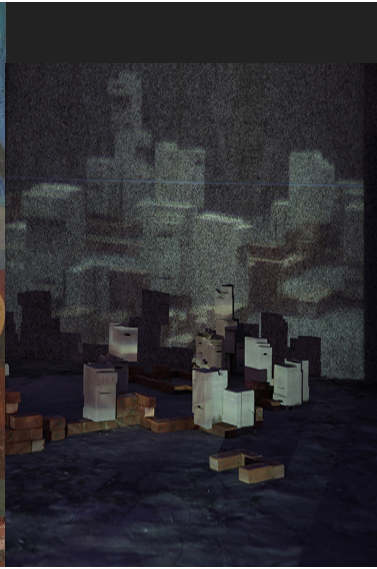
Pile B: *Concrete art*- is based on geometric imagery and patterns to create a visual representation (Gridley, 2013)

This task should approximately take 2-5 minutes to complete

PASSIVE ARTWORK (SELECTION TASK)



(Concrete 1)



(Concrete 2)



(Concrete 3)



(Concrete 4)



(Concrete 5)



(Concrete 6)



(Concrete 7)



(Abstract 1)



(Abstract 2)



(Abstract 3)



(Abstract 4)



(Abstract 5)



(Abstract 6)



(Abstract 7)

FACE TASK QUESTIONNAIRE

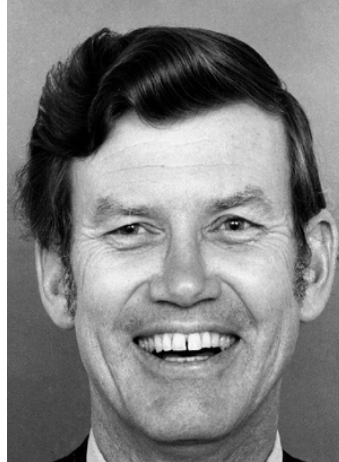
Please circle **ONE** of the options below based on what you think each face represents.

Face #1



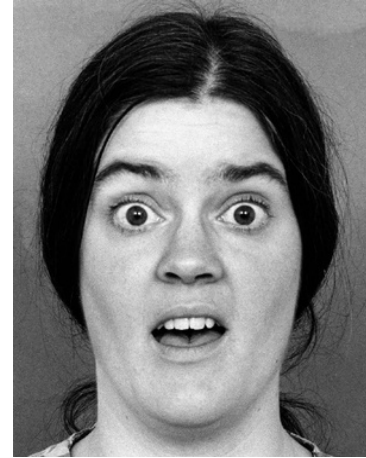
- a. Anger
- b. Contempt
- c. Fear
- d. Disgust
- e. Happiness
- f. Sadness
- g. Surprised

Face #2



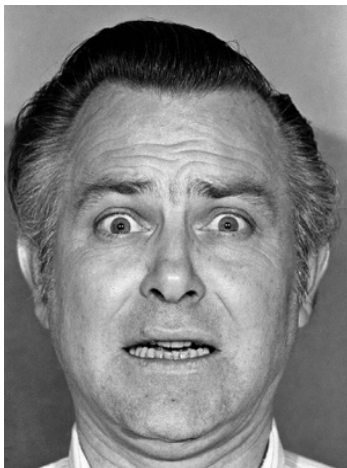
- a. Anger
- b. Contempt
- c. Fear
- d. Disgust
- e. Happiness
- f. Sadness
- g. Surprised

Face #3



- a. Anger
- b. Contempt
- c. Fear
- d. Disgust
- e. Happiness
- f. Sadness
- g. Surprised

Face #4



- a. Anger
- b. Contempt
- c. Fear
- d. Disgust
- e. Happiness
- f. Sadness

Face #5



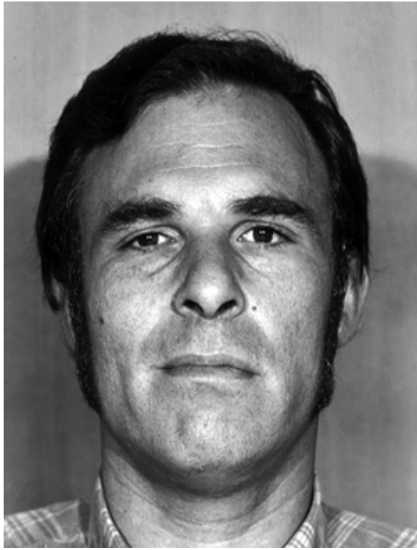
- a. Anger
- b. Contempt
- c. Fear
- d. Disgust
- e. Happiness
- f. Sadness

Face #6



- a. Anger
- b. Contempt
- c. Fear
- d. Disgust
- e. Happiness
- f. Sadness

g. Surprised
Face #7



- a. Anger
- b. Contempt
- c. Fear
- d. Disgust
- e. Happiness
- f. Sadness
- g. Surprised

g. Surprised

g. Surprised

POWERPOINT SLIDES FOR GSR AND FACE TASK

Task 3: GSR & Faces (post-drawing)

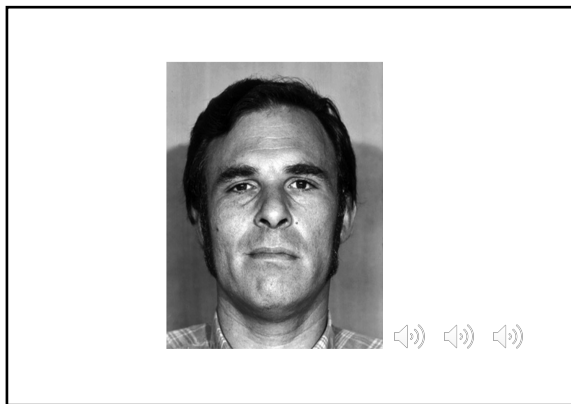
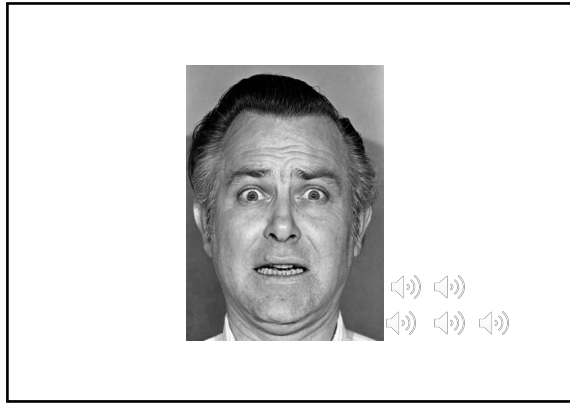
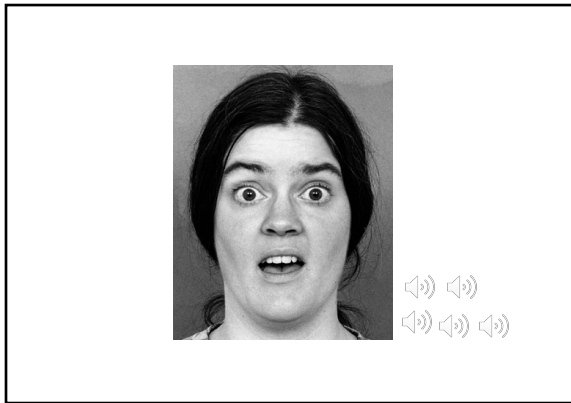
Instructions

1. You will be asked to use a device called the Galvanic Skin Response (GSR) which will be placed on your finger (if you feel a tingling sensation, that is normal and is not harmful)
2. You will be asked to look at this computer screen for a duration of 3 minutes.

3. A series of different “faces” will appear on the screen and you will look directly at each individual face (there will be **seven** different faces). Each “face” will be accompanied with a particular sound.
4. You are only asked to look directly at the face when it appears on the screen and listen to the sound that is accompanied with the “face.” This task will approximately take **3 minutes** to complete.

5. Before you start, you will see a blank white screen for 5 seconds. After this screen, the faces will appear accompanied with a particular sound





TASK COMPLETE

Once you are on this page, please call the researcher to proceed onto the next task

PARTICIPANTS ART QUESTIONNAIRES

Participant A

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 **5** 6 7 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 **6** 7 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 **7** 8 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 **9** 10

Participant B

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

Participant C

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 10

Participant D

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 **7** 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 **5** 6 7 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 **6** 7 8 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 **7** 8 9 10

Participant E

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 **5** 6 7 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 **7** 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 **8** 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

Participant F

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 **7** 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 **6** 7 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 **4** 5 6 7 8 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 **3** 4 5 6 7 8 9 10

Participant G

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 **7** 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 **8** 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

Participant H

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 **3** 4 5 6 7 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 **5** 6 7 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 **3** 4 5 6 7 8 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 **4** 5 6 7 8 9 10

Participant I

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 **3** 4 5 6 7 8 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 **4** 5 6 7 8 9 10

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 **2** 3 4 5 6 7 8 9 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 **4** 5 6 7 8 9 10

Participant J

Questionnaire

1. From a scale of 1 to 10, rate yourself on how well you can draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 **8** 9 10

2. From a scale of 1 to 10, how familiar are you with drawing or art in general (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 9 **10**

3. From a scale of 1 to 10, how much do you like to draw (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 7 8 **9** 10

4. From a scale of 1 to 10, did you like drawing as a kid? (1 being the lowest and 10 being the highest)

1 2 3 4 5 6 **7** 8 9 10