Gusé, Hannah. "Emotional Intelligence and Understanding the Conveyance of Emotions through Visual Art." BA Honours (Psychology & Philosophy), Tyndale University, 2020.

Emotional Intelligence and Understanding the Conveyance of Emotions through

Visual Art

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Abstract

Understanding art involves psychological processes and involves a variety of factors. The present study explores the relationship between Emotional Intelligence and understanding the emotions conveyed through art. Three artworks were created by three artists, who completed EI, empathy and Openness to Art measures. Also, the artists completed emotion inventories to indicate the emotions experienced while creating the art and the emotions they intend the viewers to feel when viewing the artwork. Participants viewed three different visual artworks, indicated the emotions the experienced and the emotions they think the artist intended for them to experiences, as well as the same EI, empathy and Openness to Art measures. To measure accuracy of emotional understanding, the viewers' responses and artists' were compared to calculate the discrepancy between the two. For one artwork, viewers with higher total EI, as well as higher scores on the subscales of well-being, self-control and sociability were more accurate in guessing the intended emotions. A relationship between total EI and experienced emotion accuracy was found as well. One facet of the empathy scale, personal distress, was related to less accuracy overall. No significant results were found for the other two artworks. Thus, EI is related to accuracy in art viewing in some instances, such as when there are written cues or the artist has more artistic expertise.

Keywords: art, emotional intelligence, empathy, understanding, emotions, art viewing, artist

Introduction

Art is often said to be the defining characteristic of our species - what distinguishes humans from animals. Art and aesthetic appreciation are uniquely human experiences, and psychologists have studied the mind's interaction with art since Fechner (1801-1887) (Leder & Nadal, 2014). This study seeks to further understand the psychological process of art understanding. The phrase *art understanding* is used to refer to the art-viewer's ability accurately feel what the artist intended them to feel. If someone is able to recognize, understand and manage emotions well (high Emotional Intelligence), this likely impacts their understanding of art. A person with a higher level of Emotional Intelligence (EI) should be able to perceive the emotions that the artist intends for them to experience. Further, the viewer may experience the emotions that artist themselves felt while creating the art piece.

Research on the Psychology of Art

Studies on the psychology of art in the past have often been conducted in a laboratory setting, as is typical for psychological research; yet formal laboratory research does not maximize ecological validity for art-viewing results (Wagner, Klein, Hanich, Shah, Menninghaus & Jacobsen, 2016; Pelowski, Forster, Tinio, Scholl & Leder, 2017). That is, researchers desire results that are as similar to real life experience as possible, rather than a sterile laboratory environment that does not translate to reality. There is evidence that when an experience is framed within an artistic context, there is an overall enjoyment of the experience, despite intense negative emotions (Wagner et al., 2016). The enjoyment of art forms that

evoke negative emotions is called the paradox of tragedy. Wagner et al. (2016) found evidence that supports this notion: an art-framing method would create the expectation of enjoyment, and although anger might be experienced, the overall emotion would be pleasure. Although participants in this study experienced the intense, negative emotion of anger, the cognitive framing produced by a film festival accounted for a pleasurable experience (Wagner et al., 2016).

Another important aspect of the art viewing experience as it has been studied by psychologists is the time duration at which it is viewed. According to Brieber, Nadal, Leder and Rosenberg (2014), art that is examined for longer periods of time is also more interesting and better understood (as cited in Brieber, Forster & Leder, 2018). A wide range of artworks were presented for either 5, 17 or 30 seconds, and then viewers rated the artwork in regards to appreciation, understanding, wanting to see the artwork longer, and overall complexity of the artwork. The results found by Brieber, Forster and Leder (2018) suggest that an optimal time for a viewer to view artwork is 17 seconds. This optimal time is important because the time spent viewing art allows an appropriate passing of time for a progression of mental processes and stages involved in the aesthetic experience (Brieber et al., 2018).

Psychology of the Art Viewer

The aesthetic experience is both emotional and cognitive, lending to a complex human experience that many models attempt to depict. A *model* depicting the psychological experience of an art-viewer refers to the general steps or the process that the viewer undergoes, including general names for each stage

of cognition, so as to outline the experience in a formal or theoretical way.

Mastandrea, Bartoli, and Bove (2009) found that art genres themselves may

separate art's dual types of processing (intellectual and emotional). Classical art

was viewed more often for intellectual understanding, through classification,

historical context and art expertise. In contrast, modern art viewers are more

commonly driven by emotion, or, they tend to regard art solely for the emotional

experience it evokes (Mastandrea, et al., 2009). However, many models

illustrating the experience of art have been proposed which include a combination

of cognitive, intellectual and emotional processes. In 2004, Leder, Belke, Oeberst,

and Augustin published an extensive aesthetic experience theory. Following

general knowledge of cognitive psychology that depicts mental processes as

parallel, interacting functions, rather than a strict, serial order of events, Leder et

al. (2004) made a model that was a relative hierarchy (Figure 1). The seven

proposed stages of this thorough model are: input, perceptual analyses, implicit

memory integration, explicit classification, cognitive mastering and evaluation,

affective and emotional processing and finally the output . Leder et al.'s (2004)

theory is helpful because it depicts the complexity of the aesthetic experience; an

art-viewer begins with an aesthetic attitude due to framing, initially analyses

contrast, colour, complexity, etc., assesses the familiarity and considers their own

artistic knowledge, seeks for meaning, and is left with aesthetic emotions and an

aesthetic judgment. However, despite the complexity of the model, there are still

extraneous variables, such as art expertise or possibly mood that are not
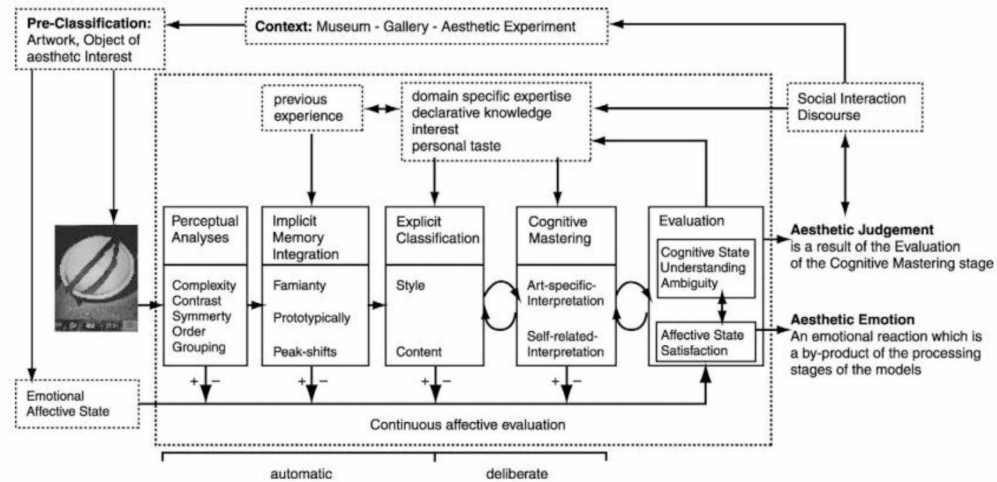
adequately accounted for.

Figure 1. A model of aesthetic experience. Reprinted from "A model of aesthetic appreciation and aesthetic judgments" by H. Leder, 2004, British Journal of Psychology, 95(4), 489–508. Copyright (2004) by The British Psychological Society. Reprinted with permission.

A more succinct model was proposed by Tinio (2013) which includes not only the viewer but the artist as well. The Mirror Model is condensed into three stages for the artist: generating the initial idea, expanding/adapting that idea, and finalizing the artwork (Tinio, 2013). The viewer also goes through three stages that mirror the stages the artist goes through which are: early, automatic processing, intermediate and memory based processing, and aesthetic judgment and emotion. To clarify, upon viewing the artwork, the colours and shapes are seen first, then processing and memory integration occur, followed by the emotional outcome and judgment. While there are definitely similarities between the models, the inclusion of the artist's process is important. The final stage of this model for the viewer is when emotions are awakened and deliberate and effortful cognition is engaged. Again in contrast with Leder et al. (2004), Tinio's

(2013) model is purely sequential, as the mirroring stages must occur in serial order.

Another art processing model for the viewer arose from Pelowski, Forster, Tinio, Scholl, and Leder, (2017) which is titled the Cognitive Model of Art Processing. The stages are quite similar to Leder et al.'s (2004) model: pre-classification, perceptual analysis, memory integration, explicit classification, understanding, aesthetic judgment and affective response. The pre-classification stage is unique and able to account for the context of the viewer, in terms of the artwork itself (size, authenticity, frame), the viewer (expectations, interest) and the museum (lighting, barriers, rules). Perceptual analysis is a stage to process visual features such as shapes or contrast. The memory integration stage allows the viewer to relate past experiences and knowledge to the art. Explicit classification is a formal stage to declare the style of the piece regarding factors such as the brushstrokes and technique. Cognitive mastering is the term that refers to the final output of thoughts when meaning and judgment are confirmed, ie. "I enjoy this artwork", "this piece of art evokes a deep sadness in me". An advantage of this theory is the pre-classification stage which can account for mood, expertise and other extraneous variables. It is important that models of art viewing and processing take extraneous variables into consideration, and at the pre-classification stage, this model accounts for the viewer's possible fatigue, social setting and presumptions or biases.

It is important to understand these aesthetic processing models for the present study as emotional intelligence (perceiving, understanding and managing

emotions) is more likely to impact the deeper or later stages: cognitive mastering, evaluation, memory integration and understanding. For example, if someone has low EI, and an artwork portrays a complex mix and wide range of emotions, this person will struggle to grasp the intended emotional meaning because it is difficult for them to perceive emotional cues. Thus, someone with low EI may be able to understand that a blue painting is sad, but unable to gain any emotional understanding from a painting without explicit emotional cues, such as a black and white painting. However, the early and implicit stages are also related to EI (recognition and knowledge facets) and integral to the overall aesthetic experience. Someone with high EI can accurately identify emotions, so at an early stage they are able to recognize their own emotions and may also understand the intended emotions of the art piece. When Leder and Nadal (2014) published a work to examine the progress of their model after ten years, it was clear that the main dimensions of aesthetic experience remain to: evaluative, affective, and semantic. The impact of EI on the aesthetic experience would thus relate to these three main dimensions. These terms refer to the analysis entailed in art viewing, the judgments and emotions involved in the aesthetic experience. After the process of art-viewing, one has undergone a cognitive and emotional experience. The current study seeks to include a synthesis of the above models, rather than asserting one as preferable

Emotional Intelligence

The identification of EI as a new type of intelligence might be characterized as an attempt to capture the constant internal interaction of

cognition and emotion. Emotional Intelligence (EI), as defined by Mayer and Salovey (1997) is:

> The ability to perceive accurately, appraise, and express emotions; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. (p. 10)

Mayer and Salovey are two of the strongest proponents of ability EI theory which proposes that EI is testable as a measure of cognitive functioning ability rather than a trait or personal characteristic that simply varies as an individual difference between each person. This distinction is important because trait and ability are the main two ways to classify, understand and measure EI. While the trait theory proposes that EI is part of an individual's character, and they are naturally have a stable and certain capacity of EI, the ability theory proposes that EI is something that can be developed, learned and improved. The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) is one of the most widely used and reliable EI tests, and the dominant EI ability measure (Brackett, Rivers, Shiffman, Lerner & Salovey, 2006; Laborde, Dosseville & Allen, 2015).

The MSCEIT is not the only test of ability EI. However, the newer tests need improvements before they can be reliably applied within research. The Self-Rated Emotional Intelligence Scale (SREIS) was intended to study EI from an ability perspective, yet scores from the SREIS and the MSCEIT were unrelated (Brackett et al., 2006). MacCann and Roberts (2008) also sought to create alternative EI tests developed based on Roseman's 2001 Appraisal Theory and the

Situational Judgment Test (SJT). The dual ability tests MacCann and Roberts

(2008) created were the Situational Test of Emotional Understanding (STEU) and

the Situational Test of Emotion Management (STEM). The STEU and STEM

were intended to measure EI similarly to, yet better than, the MSCEIT, although

they are new tests hence less reliable and have not been readily validated.

The differing conceptualizations of Emotional illuminate how theorists

lack a uniform understanding of EI. Since there is a debate about what EI is in

essence, the methods of measuring and testing EI vary greatly. There are many

trait EI tests and scales: refer to Table 1 for relevant trait EI tests.

Table 1: *Table of trait EI tests*

Test	Source	Reliability
Bar-On EQ-I test	Bar-On, 1997 as cited in Harris, Reiter-Palmon & Kaufman, 2013	Test-retest after 1 month: .85, after 4 months: .75 (1997). Cronbach's alpha .96 (2013).
Bar-On and Parker's Emotional Quotient Inventory – Youth Version (EQi:YV-Brief)	Keefer, Holden & Parker, 2013	Cronbach's alpha of subscales: .60 - .84). Internal consistency: rs = .33 - .65.
Wong and Law Emotional Intelligence Scale (WLEIS)	Cho, Drasgow & Cao, 2015	Cronbach's coefficient alpha: .88.
Schutte Emotional Intelligence Test (SEIT)	Cho, Drasgow & Cao, 2015	Cronbach's coefficient alpha: .86.
The Test of Emotional	Schmidt-Atzert & Bühner,	Cronbach's alpha Study

Intelligence (TEMINT)	2002 as cited in Blickle, Momm, Liu, Witzki & Steinmayr, 2011	1: .80 Cronbach's alpha Study 2: .71
Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF)	Cho, Drasgow & Cao, 2015	Cronbach's coefficient alpha: .90.
Trait Emotional Intelligence Questionnaire (TEIQue)	Vernon, Petrides, Bratko & Schermer, 2008	Internal Consistencies : .93 - .94.

The Bar-On EQ-I test is composed of 133 items and uses a 5-point response scale (Harris, Reiter-Palmon & Kaufman, 2013). Test-Retest reliability for the Bar-On is ".85 after 1 month and .75 after 4 months" (Harris, Reiter-Palmon & Kaufman, 2013, p. 239). Keefer, Holden and Parker (2013) examined test-retest responses for adolescents over a period of six years, using the EQi:YV-Brief, and found that an individual's EI becomes more stable as they grow older. Keefer et al.'s (2013) results again support EI as a trait rather than ability, as personality is often understood to stabilize with age and maturity.

The Wong and Law Emotional Intelligence Scale (WLEIS) is considered a trait EI scale as it contains 16 items measuring EI through self-report and a 7-point Likert scale. However, the WLEIS can be considered an ability measure because its items correspond to inventories inspired by Mayer and Salovey: self-emotion appraisal, others' emotion appraisal, use of emotion and regulation of emotion (Cho, Drasgow & Cao, 2015). This is a dominance model, where items are selected by the test-taker due to their high correlation with other items that are

similar (Cho, Drasgow & Cao, 2015). Cho, Drasgow and Cao (2015) further describe the dominance model: "in other words, the probability of endorsing an item is higher for individuals with higher standings on the relevant latent trait" (p. 1242), which is preferable and should increase validity of the measure. Further, the scale items of the WLEIS are very similar to each other. The Schutte Self Report EI Test (SEIT) is also considered to be related to ability EI, as the four factors it assesses are: appraisal of emotions, use of emotions, mood regulations/optimism and social skills. The SEIT includes 33 items measured by a 5-point Likert scale (Cho, Drasgow & Cao, 2015). While the WLEIS and SEIT utilize the ability EI theory as a foundation, the employment of the measure is self-report, lending to a trait measure rather than performance or ability.

As for the Test of Emotional Intelligence (TEMINT; Schmidt-Atzert & Bühner, 2002 as cited in Blickle, Momm, Liu, Witzki & Steinmayr, 2011), the aim is to evaluate emotional reasoning as a specific, yet broad, aspect of EI. The TEMINT is focused upon the understanding or appraising emotions component of EI. The restricted nature of this test does not allow it to be a full ability measure of EI, nor a fully trait measure. It is listed in this category due to self-completion nature of the test, where situations are read and responses are given by the participant (Blickle et al., 2011).

The TEIQue and the TEIQue-SF measure trait EI through 15 facets further categorized into four dimensions: emotionality (trait empathy, emotion perception, emotion expression, relationships), self-control (stress management, low impulsiveness, emotion regulation) sociability (emotion management,

assertiveness, social awareness) and well-being (self-esteem, trait happiness, trait

optimism). The remaining two facets are adaptability and self-motivation, which

are directly included in the global trait EI score. The TEIQue has also been

adapted for adolescents (TEIQue-AFF; Petrides, 2009). The validity of the

TEIQue is exemplified by the global trait α of 0.89 reported for a sample of 907

females (Petrides, 2009). The TEIQue is based upon the trait theory of EI, which

opposes the ability theory by suggesting that there are less right and wrong

emotions than ability theory proposes (Petrides, 2009). The trait theory is

supported by genetic studies, likening EI to a personality trait engrained in DNA

rather than a cognitive ability (Vernon, Petrides, Bratko & Schermer, 2008).

Vernon et al. (2008) studied trait EI in parents and children, as well as twins, and

found that the EI trait can be attributed to genetics and non-shared environments.

Non-shared environments refer to those contexts where an individual is not

around their family, such as school, work or extracurricular activities. Trait EI

theory is also supported through longitudinal studies, where EI is seen to decrease

slightly before increasing with maturity, similarly to self-esteem (Keefer, Holden

& Parker, 2013). Another positive aspect to trait EI theory is the supposed ease of

measuring it: intelligence has long been faulted for inconsistencies in

measurement or because ability EI has more components (recognizing, managing,

etc). Trait assessments can sidestep this issue because while the ability measure

must be scored by experts or consensus, the trait test has been validated

psychometrically (Petrides, 2009).

A final EI theory is called the Tripartite Model, and it effectively blends both ability and trait theories of EI. The levels according to the Tripartite Model are: knowledge, ability and trait (Laborde, Dosseville & Allen, 2015). Knowledge refers to what one knows about emotions, ability is seen to capture one's capability in performing emotional regulation, and trait is a depiction of what one typically does in emotional situations. This theory is less known and un-tested, yet may help resolve apparent conflicts between current EI theories.

Present Study

As trait EI has been correlated with specific personality traits (MacCann & Roberts, 2008), EI has also been found to be related to various forms of success (particularly in a career setting such as income or perceived marketability: Blickle, Momm, Liu, Witzki, & Steinmayr, 2011; Laborde, Dosseville & Allen, 2015). Blickle et al.'s (2011) research gives evidence to support a positive relationship between EI and career motives, income and marketability. Further, EI, specifically emotion regulation, could be a determinant for creative success (Ivcevic & Brackett, 2015). This regulatory ability can be linked to the earlier stage in Tinio's (2013) model for artists wherein emotions are channeled and transformed into art. The correlation between creativity and emotion regulation studied by Ivcevic and Brackett (2015) is closer to the present study, where EI and art understanding will be further examined. In line with the various above-mentioned findings exploring constructs related to EI, Suliman & Al-Shaikh (2007) demonstrated that readiness to create was also related to EI (as cited in

Harris, Reiter-Palmon & Kaufman, 2013). The relationship between the EI of the creative artist and the EI of the viewer will be explored in the present study.

While there is extensive knowledge of EI and the aesthetic experience as separate constructs, the precise relationship between the EI of an art-viewer and the artist has yet to be understood. Wherever the interaction of two people's emotions occurs, in this case, the artist and the viewer, empathy is another variable at play. Empathy is the ability to experience another's emotional state or "put oneself in the shoes of another person" (Sittler, Cooper & Montag, 2019, p. 1). In a relevant study, Sittler, Cooper and Montag (2019) explored the role of empathy in the emotional impact of music. The measure of empathy employed in this study was the Interpersonal Reactivity Index (IRI; Davis, 1980, 1983 as cited in Sittler et al., 2019). The IRI measured empathy as a multidimensional concept which included perspective-taking (ability to look at something from someone else's point-of-view), fantasy (ability to engage with fictional characters), empathic concern (sympathy with others) and personal distress (personal discomfort when confronted with the emotional state of others). People with more empathic ability are able to more accurately evaluate the emotions of music (Sittler et al., 2019). Perhaps this ability will transfer from music to visual art. Empathy was another variable considered by Pelowski, Specker, Gerger, Leder, and Weingarden (2018) who studied the emotional interaction between artist and viewer. The Trait Empathy Questionnaire (Questionnaire of Affective and Cognitive Empathy) as well as a self-report survey of emotion terms were instruments in determining whether art can serve as a proxy for the artist and be

effective in transferring emotional states from the artist to the viewer (Pelowski et al., 2018). The present study seeks to take the work of Pelowski et al. (2018) further by evaluating the emotional intelligence of the viewer. While viewers experienced some of the same emotions as the artist, as well as intended emotions, there remains a gap in understanding or transference, as not all viewers experience the same emotions as the artist, or the intended emotions (Pelowski et al., 2018). While individual differences (such as art expertise or personal history) may account for the inability to experience intended emotions, there may be other dominant factors that moderate an individual's ability to experience the artist's intended emotions through art.

The present hypothesis proposes that a viewer's EI affects their understanding of art, in terms of experiencing the same or the intended emotions of the artist. Perhaps the EI of an art-viewer is a moderating factor, besides artistic expertise, that enables someone to feel either what the artist themselves felt while creating, or intended the viewer to feel through their artwork. Another factor that will be examined is empathy, as higher empathy will likely be correlated to a higher emotional understanding of artwork. This experiment will give new information on the EI of viewers of art, which could in turn give information regarding the EI of artists, as well as empathy capabilities of participants and characteristics of art enthusiasts. Further, the results of this study may shed light on specific aspects of EI, such as the ability to regulate and recognize emotion as it relates to genuine experiences.

Method

Participants

There were 68 viewer participants, primarily university students, with varying ages. There were 38 participants (55.9%) that fell in the age bracket of 18-21, and 21 participants (30.9%) that fell between 22-25 years of age. Due to the ratio of females to males at Tyndale, the grouping of participants was 51 (75%) female and 14 (20.6%) male, with 3 (4.4%) missing data. The participants were voluntarily involved in the study as advertised around Tyndale University. Participants of Tyndale University were offered and subsequently received extra credit for courses relevant to the topics of Psychology or Arts, within the Tyndale guidelines: 1% added to the final grade for each hour involved. Thus, for participating in this study, students that were viewer participants earned 1% extra credit. A range of ethnic backgrounds were represented, including 35 that identified as Caucasian (51.5%), 5 Asian (7.4%), 11 African American (16.2%). In response to a question inquiring whether the participant has studied fine art or art history, 51 (75%) said no, and 15 (22.1%) said "yes, little knowledge", with the remaining 2 (2.9%) responded "yes, extensive knowledge". The three artist participants were female and fell in an age range of 18-23, and were all Caucasian. The average TEIQue-SF score of the artists was 5.26. Aggregate results are given due to a lack in significant differences between the artist subjects, as well as to maintain confidentiality. Further details of the artist's scores are detailed in Table 2.

Table 2: *EI and IRI and OA Average Scores of Artists*

	TEIQue-SF	Total EI	Well-Being	Self-Control	Emotionality	Sociability
Artists' Average		5.26	5.89	4.17	4.96	5.17
	IRI & OA	Perspective Taking	Fantasy	Emotional Concern	Personal Distress	Openness to Art
Artists' Average		20.33	21.33	20.00	13.33	6.06

Materials

Posters advertising the study (Appendix A) were posted in various locations across the Tyndale University campus. Upon arriving in the designated room for the study, participants were required to fill out an informed consent form (Appendix B). The consent form outlines the implications of participation in this study, guaranteeing confidentiality, and must be signed prior to any further involvement in the study. To measure trait emotional intelligence, the Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF) was given to each participant. See Appendix C for a copy of the TEIQue-SF. A trait EI scale was optimal for this study as the participants had readily reflected on their own emotions prior to completing the questionnaire. The TEIQue-SF has four subscales: well-being ("On the whole, I'm pleased with my life"), self-control

("I'm usually able to find ways to control my emotions when I want to"),
emotionality ("I'm normally able to "get into someone's shoes" and experience
their emotions") and sociability ("I can deal effectively with people"). Siegling,
Vesely, Saklofske, Frederickson and Petrides (2017) found a high internal
consistency of the TEIQue-SF, with a McDonald's omega measuring .85 in two
samples. Petrides and Furnham (2006), when comparing male and female
differences in EI in the workplace observed high internal consistency for the
TEIQue-SF, with alpha levels of .84 (males) and .89 (females). The Cronbach's
Alpha level for the total EI score for the present study was .84. Furthermore, the
Alpha level for each subscale was well-being: .83, self-control: .74, emotionality:
.64, sociability, .67. The TEIQue-SF was "specifically designed to measure global
trait EI" (Petrides & Funham, 2006 as cited in Cho, Drasgow & Cao, 2015, p.
1245), providing a shortened measure for participants that accurately depicts EI.
A shorter measure after completing numerous inventories was gracious for the
participants, and protected from possible test fatigue.

To measure empathy, each participant completed the Interpersonal
Reactivity Index (IRI; Davis, 1983) as found in Appendix D. This scale was
developed by Davis in 1980 and has become a predominant measure of empathy
due to its inclusion of multidimensions such as the perspective of others or
sympathy for others (Sittler, Cooper & Montag, 2019). An example item is "I am
often quite touched by things that I see happen." Sittler, Cooper and Montag
(2019) report "test–retest reliability for women and men shows average r values
between .61 and .81" (p. 4) as well as a Cronbach alpha level of .79 or higher for

each subscale (p. 4). In the present study, the IRI had a Cronbach Alpha level of

.76.

A brief survey, entitled "Demographics and Art Expertise Survey" was

created by the researcher and given to all participants to evaluate demographic

information as well as art expertise. An example *Art Expertise* item is "I consider

myself knowledgeable about art". A copy of this survey is attached in Appendix

E. The six items that were answered through a Likert-style scale (1-7) were scored

as an aggregate variable called Openness to Art (OA) and this scale had a

Cronbach Alpha level of .51. Affective Emotion inventories to measure the

emotions felt by the artist were inspired by the Pelowski et al. (2018) study,

including a range of emotions such as "absorbed", "chills" or "distracted".

Participants indicated the degree to which they experienced each of the 37

emotions, on a scale of "not at all" (0) to "extremely" (7). A copy of the artists'

experienced emotions inventory is located in Appendix F. Also, the emotions that

the artist intended their viewers to experience were measure with an intended

emotions inventory, as shown in Appendix G. The same 37 emotions were

included in each inventory, as well as the same indication measure, a seven-point

scale. After a viewer spends a few seconds regarding each artwork, the viewer

was required to fill out an experienced emotions inventory (Appendix H). Also,

for each artwork, the viewer completed an intended emotions inventory, a copy of

which is in Appendix I, to depict the emotions the viewer thought the artist

intended them to feel. Finally, an "Extra Credit Request Form" (Appendix J) was

available for participants to fill out in order to receive extra credit. The official

email the Artist Participants received can be found in Appendix M. The Artist's

informed consent form is attached as Appendix K. "Mock art pieces" used in the

pilot/test run can be found in Appendix N.

Procedures

To acquire artists with a desire to share their work, the researcher

contacted various artists that were personally known to the researcher. They were

initially contacted over social media messaging, and then an official email was

sent to clarify expectations. An informed consent form for the artists was made

available as well. In an attempt to ensure quality of the artworks, the artist

participants were to be established artists, with their work previously displayed in

some capacity, as well as at least three years of practice in their chosen art media.

Three artists were contacted and agreed to participate. Photos of the three pieces

of art can be found in Appendix O.

Throughout the month of September, follow-up emails and phone

communication was carried out to receive updates on the status of the art piece.

Meanwhile, the researcher conducted a pilot/test run of the present study. A very

small sample of participants used the "mock artpieces" and completed all the

necessary inventories and scales, described in more detail below. The pilot run

was conducted in order to observe the estimated time needed for each participant

as well as receiving feedback from the participants regarding any unclear steps of

the process. Finally, by October 14th, 2019, the artists sent pictures of the

completed art to the experimenter. Over the next week, the experimenter

communicated with each artist individually to physically receive the art piece, as

well as administer the intended emotions and experienced emotions inventories

and the TEIQue-SF and IRI after informed consent was received. The intended

emotions and experienced emotions inventories were completed by each artist

regarding only their own piece to depict the emotions felt while creating the piece

as well as the emotions they intend the viewer to feel when regarding their piece.

The artist participants were also required to complete the TEIQue-SF and the IRI.

Having submitted a physical, original, painted artwork and completed the

intended emotions and experienced emotions inventories, as well as the TEIQue-

SF and IRI, the artist participants were compensated by a $25 gift card for

Amazon, as well as a "Thank You" card from the experimenter.

    To recruit viewer participants, posters advertising the study were posted in

a variety of areas such as bulletin boards around Tyndale University. Tyndale

students, as mentioned above, were able to acquire extra credit marks for their

participation. Advertising for this opportunity was also carried out through in-

person announcements in all Psychology classes at Tyndale, as well as through

word of mouth and social media. The experimenter personally sought to increase

participants by advertising the study in multiple manners. When participants

arrived on October, 24th, 25th or 26th, they entered room G206 at Tyndale

University. The study was conducted at various time periods each day, allowing

participants to volunteer at their most convenient time. The art pieces were spread

out around the room, placed on tables, allowing for increased ecological validity

regarding art viewing. There was a table directly to the left upon entry, where the

experimenter obtained informed consent from each participant.

Following an explanation of the study and completion of the informed consent form, participants were given a materials package with a pen and the following instruments in the following order: Artwork 1 experienced emotions inventory, Artwork 1 intended emotions inventory, Artwork 2 experienced emotions inventory, Artwork 2 intended emotions inventory, Artwork 3 experienced emotions inventory, Artwork 3 intended emotions inventory, the IRI, the TEIQue-SF and a demographics and art expertise survey. Preceding the experienced emotions inventory for each artwork were reminder instructions, as referred to in Appendix L, reminding viewer participants to take their time, at minimum 15 seconds, to view a painting before completing the tools. Other reminders included maintaining a general calm and quiet atmosphere, as well as instructions for filling out the instruments. A table was available to the left of the exit where viewer participants could sit to fill out the IRI, the TEIQue-SF and the demographics and art expertise survey. Upon completion, viewer participants returned the package of materials and exited the room after filling out the "Extra Credit Request Form" (Appendix J).

To control for the possible confounding variable of the order of the artworks, they were rotated each day, such that on October 24th, artwork 1 was leftmost, therefore 1st to be seen, artwork 2 was in the middle, and artwork 3 was right-most, therefore last to be seen if a clockwise rotation was followed as instructed. On October 25th, artwork 2 was left-most, therefore 1st to be seen, artwork 3 was in the middle, and artwork 1 was right-most, therefore last to be seen if a clockwise rotation was followed as instructed, and so forth. Each artwork

was labeled with its number and not changed, only their place in the room was

changed to achieve balance among participants.

Results

Descriptive Statistics

A total EI score as well as the four EI facets (well-being, self-control,

emotionality and sociability) were calculated for each participant. The overall

TEIQue-SF scores (total EI) of the viewer participants had a mean of 4.9476, and

a standard deviation of 0.66958. Table 3 includes the mean and standard

deviations of each of the TEIQue-SF subscales.

Table 3: *Descriptive Statistics for TEIQue-SF subscales of Participants*

	Well-Being	Self-Control	Emotionality	Sociability
Mean	5.5303	4.2590	4.9160	4.6915
Std. Dev	1.02069	1.04915	.60474	.97884
Cronbach's Alpha	.834	.735	.643	.666

The four subscales of the IRI scale (perspective taking, fantasy, empathic concern

and personal distress) were also calculated for each participant. The mean and

standard deviation of each component is shown in Table 4.

Table 4: *Descriptive Statistics for Empathy Variables of Participants*

	Perspective Taking	Fantasy	Empathic Concern	Personal Distress
Mean	20.4030	18.6912	22.2206	12.3529
Std. Dev.	5.07835	5.37617	3.71301	5.34696
Cronbach's Alpha	.806	.751	.716	.804

Openness to art (OA) and was measured through a brief 6 item survey with a Likert-style rating system. Table 5 shows the average scores for all 68 participants for each item. The second and sixth items were originally reverse-coded, and the scale was set so that 1 corresponded to strongly disagree, while 7 corresponded with strongly agree. Means as depicted are after the responses have been reversed.

Table 5: *Openness to Art Means and Standard Deviations*

Item	I consider myself knowledgeable about art	I don't usually understand art*	I am comfortable looking at/discussing art	I like visual art	Art should make you feel	Art shouldn't make you think*
Mean	2.6618	4.7941	5.0588	5.7463	5.9265	4.7647
Std. Dev.	1.58924	1.48182	1.72672	1.14605	1.15016	2.26668

*Note: Reverse coded so that higher scores mean more openness.

Due to the relatively high means of items 2 – 6, this indicates that participants were generally open to art, and would be comfortable attempting to understand and analyze the emotions of art. Generally, the participants did not consider themselves knowledgeable about art, which aligns with the overall response given to an additional art expertise question.

Participants were asked to indicate whether they knew each artist, and the answers to "Do you personally know any of the artists who created the work you saw in this room?" are found in the table below. Only the artists who created artwork 2 and artwork 3 were familiar to any participants, which reflects the fact that these two artists attend Tyndale, where a majority of the participants also attend.

Table 6: *Responses to "Do you personally know any of the artists who created the work you saw in this room?"*

Answer	Frequency (# of participants)	Percent
No	61	89.7
Yes, artwork 2	2	2.9
Yes, artwork 3	3	4.4
Yes, 2 and 3	1	1.5

As a measure of accuracy in emotion perception, the differences between the artist's experienced emotions and the viewer's experienced emotions were calculated, forming new variables. The viewer's indicated value for each emotion word (on a scale from 0 [not at all] to 7 [extremely] for 37 individual emotion words) was subtracted from the artist's corresponding indicated value. For example, if the artist of artwork 1 indicated a 6 on the scale for the experienced emotion "absorbed", the viewer's indicated value for "absorbed" for artwork 1 was subtracted from 6, to give the related difference between scores. Thus, the higher the difference score (the discrepancy between the artist and the viewer), the less the viewer had in common with the artist. The difference scores were calculated as new variables for each artwork, completing the process of comparing the artist's response to the viewer's response for each experienced emotion for artwork 1, 2 and 3. Then, to compute the overall difference score/discrepancy for each artwork, the difference scores were averaged. For example, in order to find the overall difference for artwork 1, each of the 37 emotion word difference variables were added together, and then divided by 37 to give the average difference of experienced emotions for artwork 1. These are

referred to as discrepancies, labelled as experienced emotion discrepancies for artwork 1, etc.

Then, an additional measure of accuracy of emotion perception was computed by following the same process, in this case for intended emotions, which refers to what the artist intended the viewer to feel, as well as what the viewer thought the artist intended the viewers to feel. Again, the viewer's intended emotion response was subtracted from the artist's intended emotion response. For example, if the artist for artwork 2 indicated "3" in response to the emotion term "sad", and the viewer responded to "sad" by indicating "0", then the difference score between them is: $3 - 0 = 3$. Thus, a difference score was computed as a new variable for each of the 37 emotions included in the intended emotion inventory, for each of the three artworks. To then calculate an overall discrepancy average, these difference scores were recoded, so as to eliminate negative integers, and then summed and finally divided by 37 so as to find the average discrepancy for each participant in relation to each artwork. This new averaged variable is referred to as the intended emotion discrepancy.

The same process was followed in order to find the discrepancy between the artist's intended emotions and the viewer's experienced emotions. To create the new variable of artist intended/viewer experienced emotion discrepancies, the indicated response of a viewer to each emotion term in the experienced emotion inventory was subtracted from the matching emotion term response indicated by the artist in the intended emotion inventory. Then, these differences were averaged and became the new discrepancy variable, and this was done for each of

the three artworks, in similar fashion to the other two discrepancy variables

described previously. See Table 7 for descriptive statistics of the various

discrepancy measures.

Table 7: *Average (Mean) and Standard Deviation for Artwork*

Discrepancies

		Mean	N	Std. Dev.
Experienced Emotion Discrepancies	Artwork 1	2.40	47	.56
	Artwork 2	1.85	54	.43
	Artwork 3	2.07	51	.66
Intended Emotion Discrepancies	Artwork 1	2.18	47	.42
	Artwork 2	1.83	52	.57
	Artwork 3	1.99	54	.46
Artist Intended vs. Viewer Experienced Discrepancies	Artwork 1	2.39	47	.44
	Artwork 2	1.68	54	.35
	Artwork 3	1.93	51	.54

The number of participants in each order group was not equal. Table 8 is a

table of the number of participants in each order group. Table 9 provides the

information of the number of participants included and missing from the

correlation analyses. The number of missing responses was highest for artwork 1,

yet not large enough to have an influence. Fortunately, the difference is less than

20, between artwork 1 and the others, so it should not have been a large influence.

Table 8: *Number of Participants in Order Groups*

Order	1→ 2 → 3	2 → 3 → 1	3 → 1 → 2
N	34	19	15
Percent	50	27.9	22.1

Table 9: *Participants Included in the Correlation Analyses*

Artwork	N for Intended Emotions	N for Experienced Emotions
1	42 – 47	44 – 47
2	48-52	51-54
3	50-54	47-50

A similar consideration, regarding participant numbers and possible missing cases involves the discrepancy variables. The difference is minimal, please refer to Table 10 for the exact number of participants included and missing from each discrepancy variable. The reasons for the slight differences in N values could be due to a variety of reasons. It could be the case that participants were confused or found the inventories overwhelming at first, leading to missing data. It could also be due to any number of distractions, present for a group at that time, such as someone talking or the movement of the other participants. The presence of missing data was expected, as well as possible effects on the participants that could influence their responses, so rotating the order the artworks were presented was an attempt to mitigate these possible influences.

Table 10: *Participants Included and Missing from Discrepancy Variables*

		N :Valid	N: Missing
Artwork 1	Experienced Emotions Discrepancies	47	21

	Intended Emotions Discrepancies	47	21
	Artist Intended vs. Viewer Experienced Discrepancies	47	21
Artwork 2	Experienced Emotions Discrepancies	54	14
	Intended Emotions Discrepancies	52	16
	Artist Intended vs. Viewer Experienced Discrepancies	54	14
Artwork 3	Experienced Emotions Discrepancies	51	17
	Intended Emotions Discrepancies	54	14
	Artist Intended vs. Viewer Experienced Discrepancies	51	17

HYPOTHESIS TESTING

The main hypotheses were 1) There will be a negative relationship between EI and intended emotions discrepancies, and 2) There will be a negative relationship between IRI and experienced emotion discrepancies. Another main hypothesis was that there would be a negative relationship between EI and the discrepancy between the artist's intended emotions and the viewer's experienced emotions To test the main hypotheses regarding the relationships between the intended emotions and the experienced emotions, an analysis of the bivariate correlations between the artworks' discrepancies and the IRI and TEIQue-SF

scores was conducted. The scores relating to artwork 1 yielded results of

significance. Relating to hypothesis one, there was a relationship between the

experienced emotions for artwork 1 and one category measured by the IRI,

personal distress ($p < .01$). Additionally, there was a significant correlation

between the experienced emotions discrepancies and total EI score ($p < .05$).

Also, there was a relationship between the sociability facet of EI and artwork 1's

experienced emotions ($p < .05$). There were no correlations that reached

significance between artwork 2 and EI or IRI, nor for artwork 3 and EI or IRI.

EI and Emotion Discrepancies

A series of Pearson correlations were carried out to test the hypothesis that

there is a negative relationship between each of the EI measures and discrepancies

in intended emotions. Table 11 depicts the relevant correlations between the

discrepancies (differences in emotion-rating scores between viewers and artists)

and the TEIQue-SF scores. A significant negative correlation was found between

total EI and intended emotion discrepancies for artwork 1, $r(n=42) = -.431$,

$p<0.01$. Thus, higher levels of total EI were related to lower average discrepancies

between intended emotions. Figure 2 is a scatterplot of the relationship between

total EI and intended emotion discrepancies for artwork 1.

Table 11: *Correlations between EI and Discrepancies for all Artworks.*

			Total EI	Well-Being	Self-Control	Emotionality	Sociability
Artwork 1	Intended Emotions	r	-.431**	-.267*	-.400**	-.050	-.298*
		n	42	45	44	46	46
	Experienced Emotions	r	-.358*	-.134	-.275	-.068	-.343*
		n	44	45	45	46	46
	Artist's Intended Emotions/Viewer's Experienced Emotions	r	-.420**	-.151	-.348*	.026	-.357*
		n	44	45	45	46	46
Artwork 2	Intended Emotions	r	.061	.168	.175	-.164	.164
		n	48	50	49	51	51
	Experienced Emotions	r	.037	.064	-.006	.090	.083
		n	51	53	52	54	54
	Artist's Intended Emotions/Viewer's Experienced Emotions	r	-.050	-.051	-.002	.126	.744
		n	51	53	52	54	54
Artwork 3	Intended Emotions	r	-.112	.042	-.018	-.115	-.144
		n	50	53	52	54	54
	Experienced Emotions	r	.045	.175	-.028	.060	-.159
		n	47	49	48	50	50
	Artist's Intended Emotions/Viewer's Experienced Emotions	r	.116	.176	.072	.067	-.023
		n	47	49	48	50	50

*. Correlation is significant at the .05 level (2-tailed).
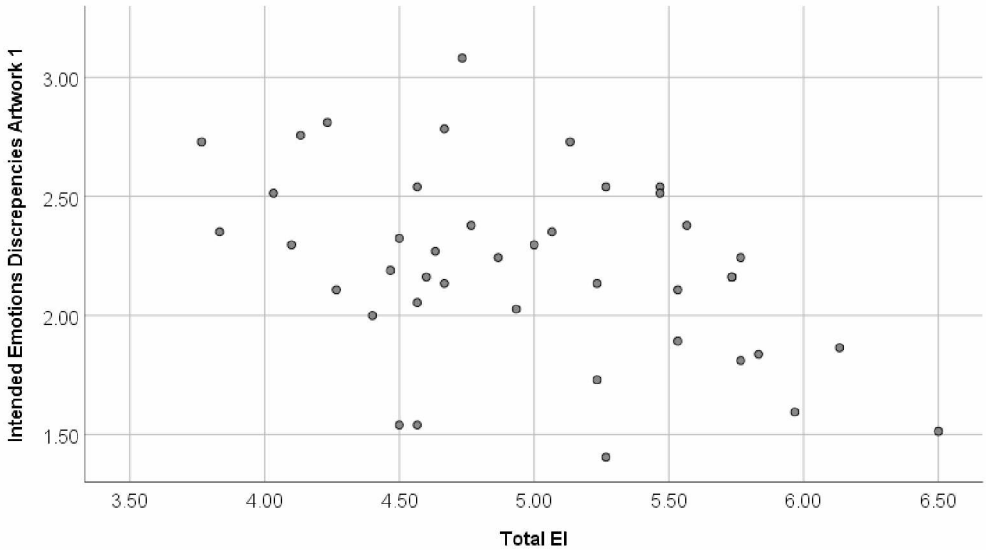** . Correlation is significant at the .01 level (2-tailed).

Figure 2: Scatterplot of the Relationship Between Total EI score and Intended Emotion Discrepancies for Artwork 1

A significant negative correlation was found between well-being and intended emotion discrepancies for artwork 1, $r(n=45) = -.267$, $p<0.05$. Thus, higher levels of well-being were related to lower average intended emotion discrepancies for artwork 1. A scatterplot of the relationship between well-being and intended emotion discrepancies for artwork 1 is found in Figure 3.
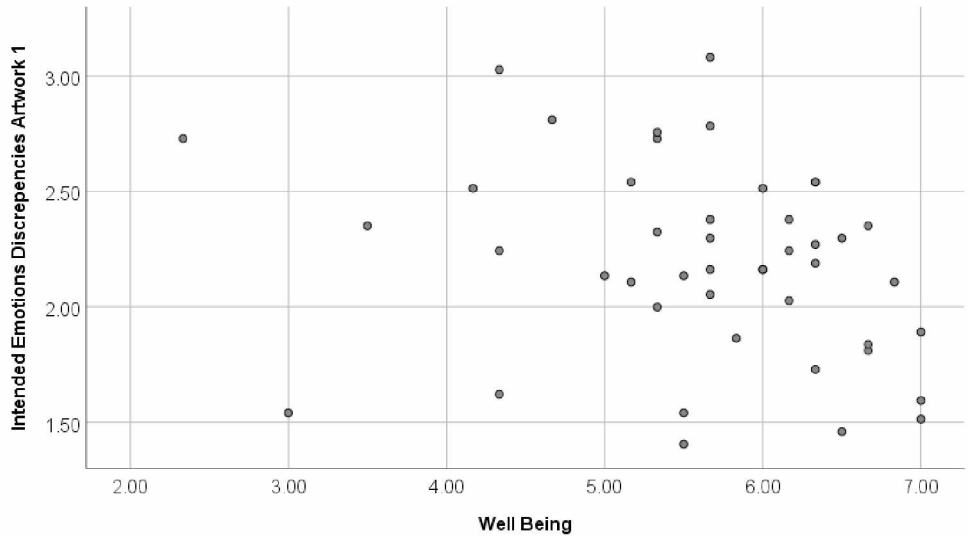

Figure 3: Scatterplot of the Relationship Between Well Being and Intended Emotion Discrepancies for Artwork 1

A significant negative correlation was found between self-control and intended emotion discrepancies for artwork 1, r(n=44) = -.400, p<0.01. Thus, higher levels of self-control were related to lower average intended emotion discrepancies for artwork 1. Figure 4 is a scatterplot of the Relationship between self-control and intended emotion discrepancies for artwork 1.

Figure 4: Scatterplot of the Relationship Between Self Control and Intended Emotion Discrepancies for Artwork 1

A significant negative correlation was found between sociability and intended emotion discrepancies for artwork 1, r(n=46) = -.298, p<0.05. Thus, higher levels of sociability were related to lower average intended emotion discrepancies for artwork 1. Figure 5 is a scatterplot of the relationship between sociability and intended emotion discrepancies for artwork 1.
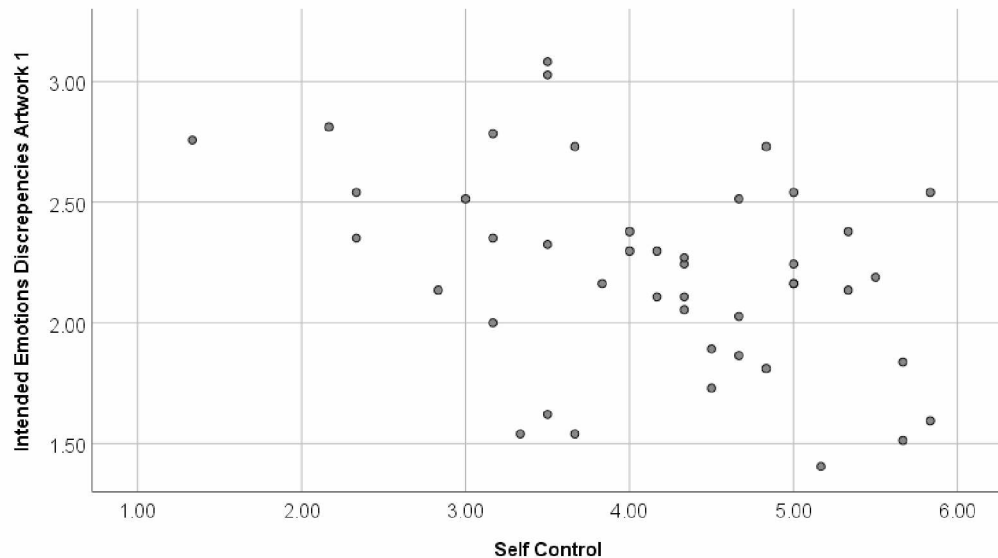
Figure 5: Scatterplot of the Relationship Between Sociability and Intended Emotion Discrepancies for Artwork 1

A series of Pearson correlations were carried out to test the hypothesis that there is a negative relationship between each of the EI subscales and experienced emotions discrepancies. A significant negative correlation was found between total EI and experienced emotion discrepancies for artwork 1, $r(n=44) = -.358$, $p<0.05$. Thus, higher levels of total EI were related to lower average experienced emotion discrepancies for artwork 1. Figure 6 is a scatterplot of the relationship between total EI score and experienced emotion discrepancies for artwork 1.

Figure 6: Scatterplot of the Relationship Between Total EI score and Experienced Emotion Discrepancies for Artwork 1

A significant negative correlation was found between sociability and experienced emotion discrepancies for artwork 1, r(n=46) = -.343, p<0.05. Thus, higher levels of sociability were related to lower average experienced emotion discrepancies for artwork 1. Figure 7 is a scatterplot of the relationship between sociability and experienced emotion discrepancies for artwork 1.
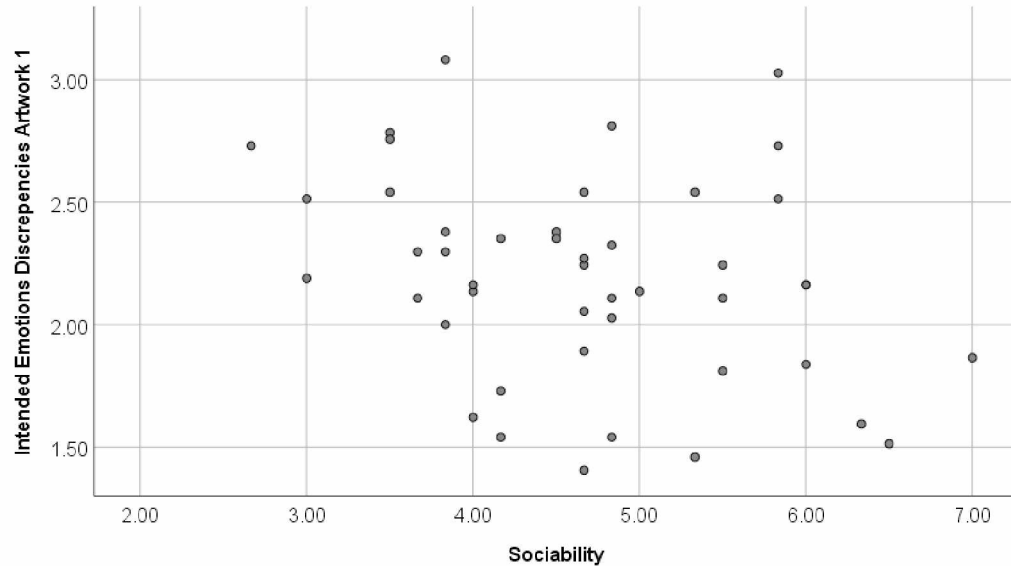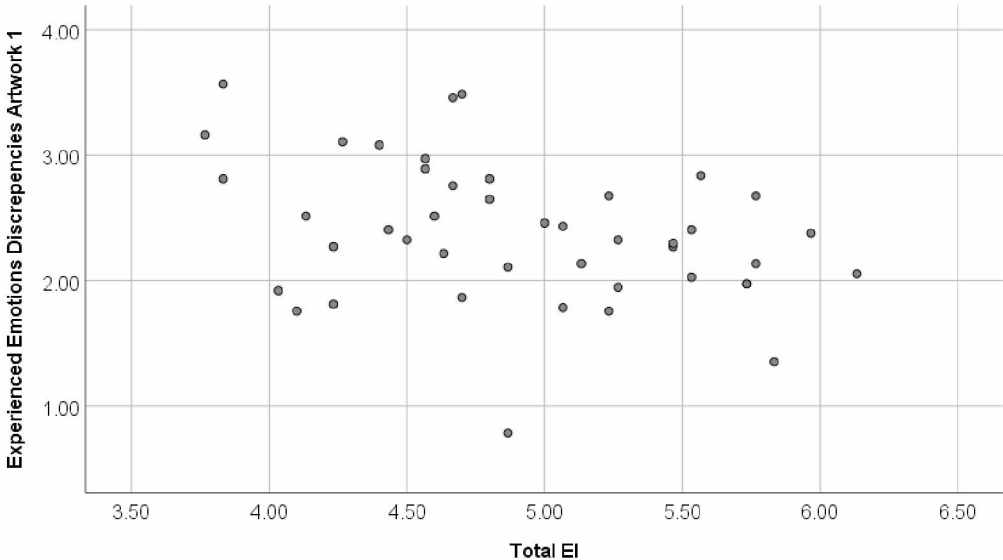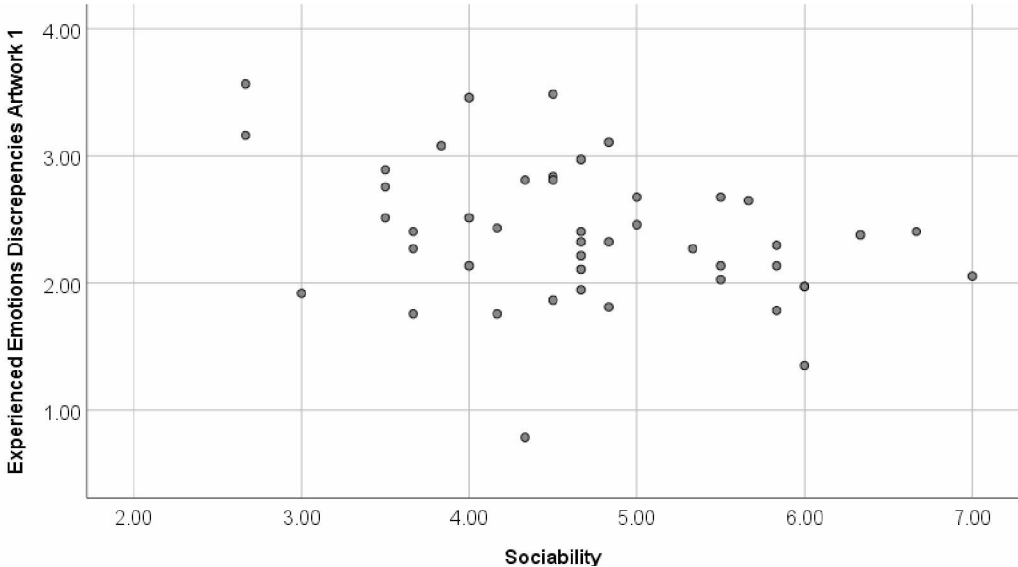

Figure 7: Scatterplot of the Relationship Between Sociability and Experienced Emotion Discrepancies for Artwork 1

Thus, for artwork 1, EI was significantly related to the ability to identify the intended emotion, particularly in terms of well-being, self-control, sociability and total EI. Sociability and total EI were also related to experiencing the same emotion as artist 1. Therefore, there is support for the first hypothesis; that higher EI will be related to accuracy in identifying the intended emotions of the artist, and thus understanding art.

A series of Pearson Correlations were carried out to test the hypothesis that there is a negative relationship between each of the EI measures and the discrepancy between artist intended/viewer experienced emotions. A significant negative relationship was found between total EI and artist intended/viewer experienced emotion discrepancies for artwork 1, $r(n=44) = -.420$, $p<0.01$. Thus, higher levels of total EI were related to lower average artist intended/viewer experienced emotion discrepancies for artwork 1. Figure 9 is a scatterplot of the relationship between total EI and artist intended/viewer experienced emotion discrepancies for artwork 1.

Figure 9: Scatterplot of the Relationship between Total EI and Artist Intended/Viewer Experienced Emotion Discrepancies for Artwork 1

A significant result was found for artwork 1, r(n=45) = -.348, p<0.05. Thus, there is a relationship between self-control and artist intended/viewer experienced emotion discrepancies for artwork 1. Figure 11 is a scatterplot of the relationship between self-control and artist intended/viewer experienced emotion discrepancies for artwork 1.
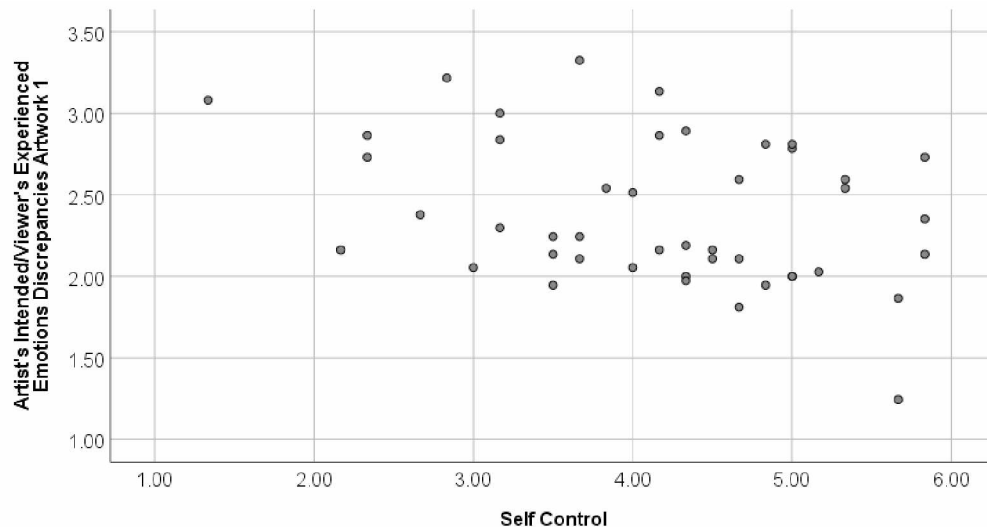
Figure 11: Scatterplot of the relationship between Self Control and Artist Intended/Viewer Experienced Emotion Discrepancies for Artwork 1

A significant result was found for artwork 1, r(n=46) = -.357, p<0.05. Thus, there is a relationship between sociability and artist intended/viewer experienced emotion discrepancies for artwork 1. Figure 12 is a scatterplot of the relationship between sociability and artist intended/viewer experienced emotion discrepancies for artwork 1.
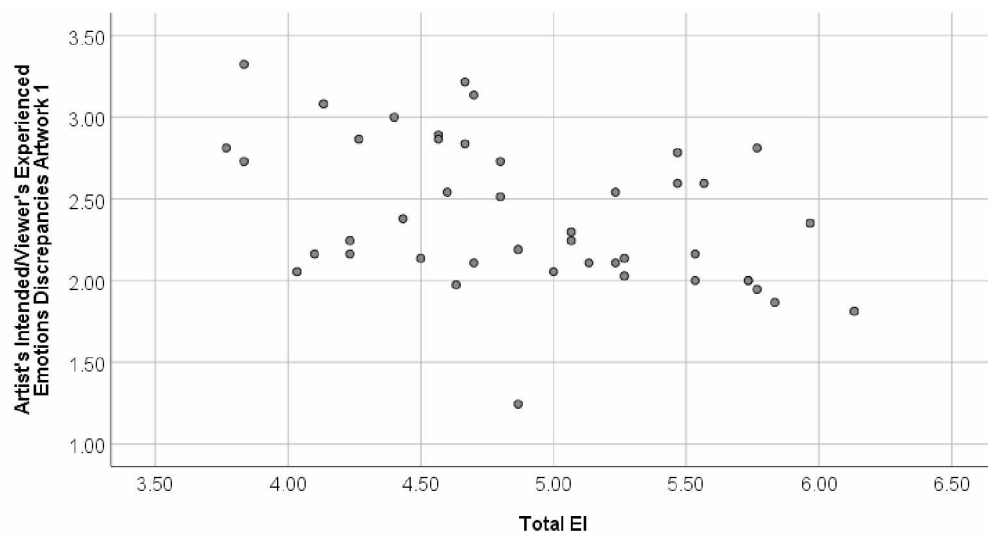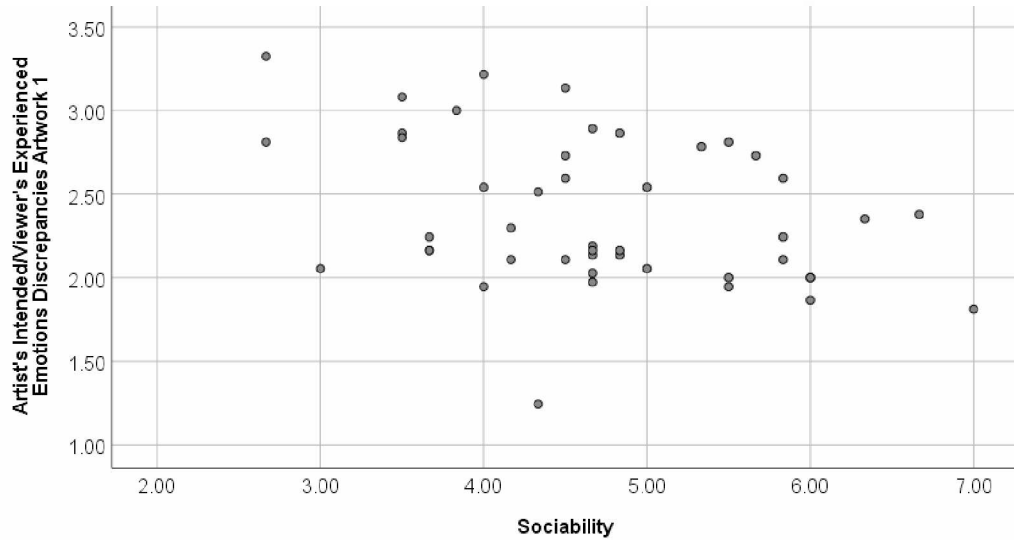
Figure 12: Scatterplot of the relationship between Sociability and Artist Intended/Viewer Experienced Emotion Discrepancies for Artwork 1

Thus, the relationship of total EI, self-control and sociability with artist intended/viewer experienced emotions is further evidence to support the relationship between EI and understanding art. Again it has been shown that those with higher EI, specifically in the areas of self-control and sociability, are able to more accurately feel the intended emotions of a piece of art.

IRI and Emotion Discrepancies

The following tables depict the relevant correlations between the discrepancies (differences in emotion-rating scores between viewers and artists) and the IRI scores, broken down into the four subscales.

Table 12: *Correlations between IRI and Discrepancies.*

			Perspective Taking	Fantasy	Empathic Concern	Personal Distress
Artwork 1	Intended Emotions	r	-.082	.139	.108	.357*
		n	47	47	47	47
	Experienced Emotions	r	-.106	.199	.075	.388**
		n	46	47	47	47

	Artist Intended/Viewer Experienced Emotions	r	-.100	.215	.006	.329*
		n	46	47	47	47
Artwork 2	Intended Emotions	r	.032	.078	-.001	-.115
		n	51	52	52	51
	Experienced Emotions	r	-.108	.025	-.048	-.091
		n	53	54	54	54
	Artist Intended/Viewer Experienced Emotions	r	-.070	.006	-.103	.027
		n	53	54	54	54
Artwork 3	Intended Emotions	r	-.107	-.037	-.129	.100
		n	53	54	54	54
	Experienced Emotions	r	-.187	-.077	-.232	.000
		n	50	51	51	51
	Artist Intended/Viewer Experienced Emotions	r	-.136	-.087	-.148	-.076
		n	50	51	51	51

* . Correlation is significant at the .05 level (1-tailed).
**. Correlation is significant at the .05 level (2-tailed).

A series of Pearson correlations were carried out to test the hypothesis that empathy would be related to intended emotions. There is a relationship between personal distress, a facet of the IRI, and intended emotions. A significant positive relationship between personal distress and intended emotion discrepancies was found for artwork 1, $r(n=47) = .357$, $p<0.05$. Thus, higher levels of personal distress were related to higher average intended emotion discrepancies for artwork 1. Figure 8 is a scatterplot of the relationship between personal distress and intended emotion discrepancies for artwork 1.
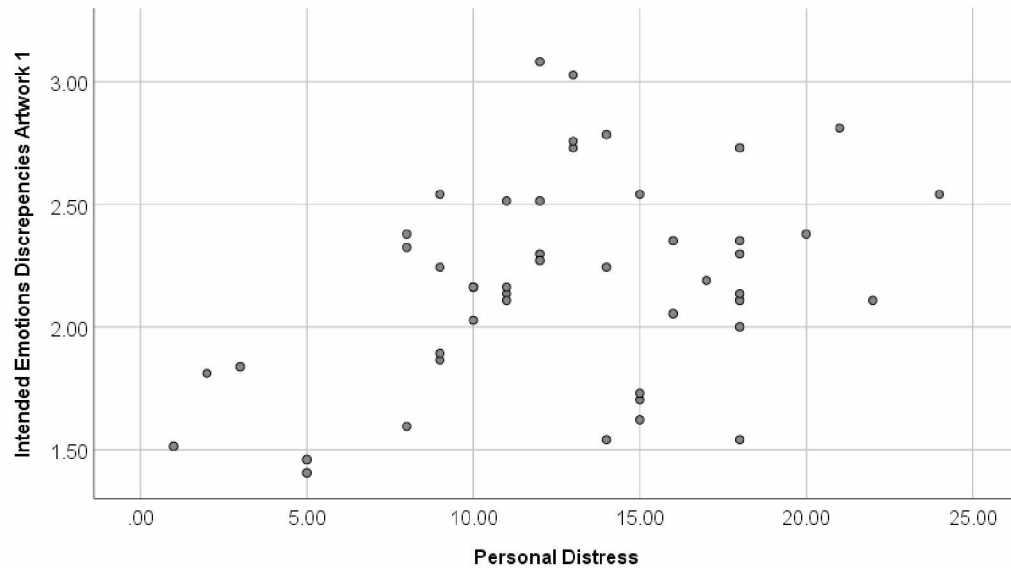
Figure 8: Scatterplot of the Relationship Between Personal Distress and Intended Emotion Discrepancies for Artwork 1

A series of Pearson correlations were carried out to test the hypothesis that empathy, measured through the IRI, would be related to experienced emotions. A significant positive relationship between personal distress and experienced emotion discrepancies was found for artwork 1, $r(n=47) = .388$, $p<0.01$. Thus, higher levels of personal distress were related to higher average experienced emotion discrepancies for artwork 1. Figure 9 shows the relationship between personal distress and experienced emotion discrepancies for artwork 1.
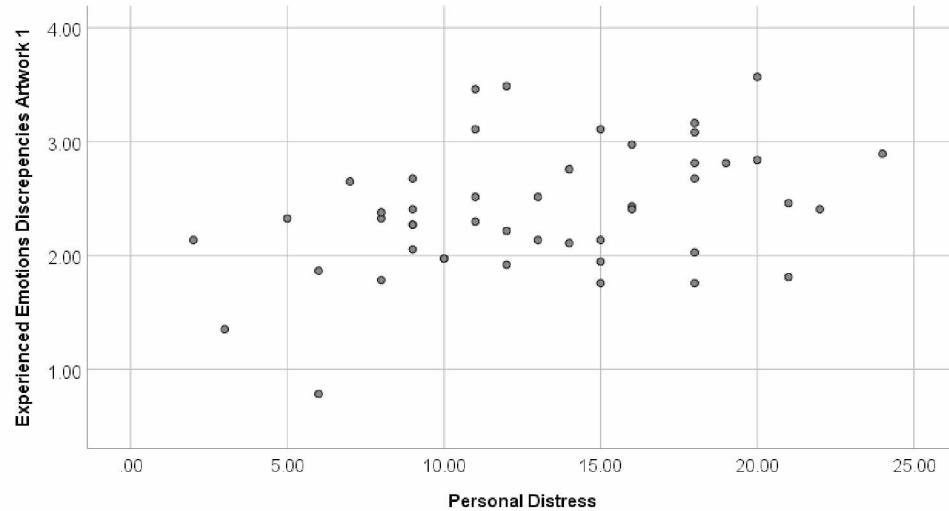
Figure 9: Scatterplot of the Relationship Between Personal Distress and Experienced Emotion Discrepancies for Artwork 1

A significant positive relationship was found between personal distress artist intended/viewer experienced emotion discrepancies for artwork 1, r(n=47) = .329, p<0.05. Thus, higher levels of personal distress were related to higher average artist intended/viewer experienced emotion discrepancies for artwork 1, and were therefore less accurate. Figure 13 is a scatterplot of the relationship between personal distress and artist intended/viewer experienced emotion discrepancies for artwork 1.
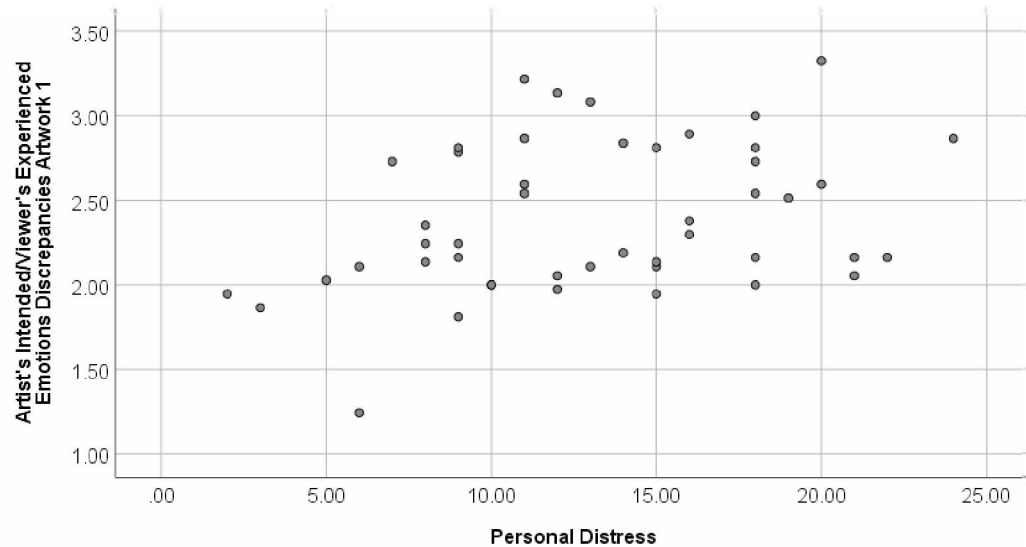
Figure 13: Scatterplot of the relationship between Personal Distress and Artist Intended/Viewer Experienced Emotion Discrepancies for Artwork 1

Thus, very little support was found for the hypothesis that there would be a relationship between empathy and experienced emotions. Significant results were found with personal distress each of the types of discrepancies. Thus, the evidence of a positive relationship goes against the hypothesis that those with higher empathy will have lower average emotion discrepancies, instead suggesting that those higher in personal distress will also have higher average emotion discrepancies.

Other Variables

The order of the artworks could have been a confounding variable, so a series of repeated measures ANOVAs between the order variable and the intended emotions discrepancies was also conducted. When analyzing tests of within-subjects effects between intended emotions responses, the results did not reach significance, $F_{(2, 62)} = .877$, $p > 0.05$. Thus, intended emotions discrepancies did

not vary significantly between artworks. When analyzing the possible interaction

of intended emotions and the order variable, the results did not reach significance,

$F(4, 62) = 2.004$, $p > .05$. Thus, intended emotion discrepancies across artworks

did not interact with the order they were presented. When measuring between-

subjects effects, there were no significant effects of order, $F(2, 31) = 1.020$, $p >$

.05. Thus, intended emotion discrepancies did not vary significantly between

orders.

A repeated measures ANOVA between the order variable and the

experienced emotions discrepancies was also conducted. When analyzing the

within-subjects effects results, the variance of experienced emotions was

significant, $F(2, 66) = 14.059$, $p < .001$. Thus, experienced emotion discrepancies

did vary by artwork. When comparing means, see Table 15, artwork 1 had the

highest, indicating that the greatest discrepancies were found for artwork 1. When

comparing experienced emotion discrepancies and the order variable within-

subjects, there were no significant effects, $F(4, 66) = 2.239$, $p > .05$. Thus, the

experienced emotion discrepancies for the different artworks did not interact with

order.

Lastly, a repeated measures ANOVA between the order variable and the

artist intended/viewer experienced emotion discrepancies was also conducted.

When analyzing the variance within-subjects, the effect between artworks was

significant, $F(2, 66) = 33.942$, $p < .01$. Thus, the discrepancy calculated between

artist intended emotions and viewer experienced emotion did vary by artwork.

When comparing artist intended/viewer experienced emotion discrepancies and

the order variable within-subjects, there were no significant effects, $F_{(4, 66)} = 1.760$, $p > .05$. Thus, the artist intended/viewer experienced emotion discrepancies for the different artworks did not interact with order. Additionally, results of a repeated measures ANOVA between-subjects did not reach significance, $F_{(2, 33)} = 1.072$, $p > .05$. This again confirms that the order in which the artworks were presented did not have an effect on the results.

Therefore, because there was no interaction, order did not become a confounding variable in this study, although responses were more varied for artwork 1. The result of variance by artwork is expected due to the correlational analyses, where significant findings only referred to artwork 1.

Table 15: *Experienced Emotion Discrepancies Means*

Artwork	Mean
1	2.420
2	1.764
3	1.952

Another variable that could be examined as a potential moderator of the relationship between EI and the discrepancies can be referred to as Openness to Art (OA). OA was also suspected to be a moderating variable, but there were no

significant findings relating to this variable, suggesting it also did not have an effect.

It was also important to consider if the participants have studied fine art or art history, as that may be another moderating factor. However, 51 participants (75%) answered no, 15 (22.1%) answered "yes, little knowledge", and 2 (2.9%), answered "yes, extensive knowledge", so it is unlikely to effect the results.

Another variable that was considered was whether the participant knew any of the artists. If a participant had personal knowledge of an artist which could occur due to the fact that two artists were Tyndale students, and a majority of the participants are Tyndale students, then this could influence their responses due to any kind of personal knowledge unrelated to the present study. Tyndale is a fairly small school, so the probability that a participant would know an artist was fairly high. Due to the negative response of 61 participants, that is to say that 89.7% of participants did not know the artists; it was not a confounding variable and did not influence the study. In fact, when those who knew the artist were removed from the analysis, and the bivariate correlations reported above were recomputed, a very similar pattern of results were produced. Thus, when comparing the responses to additional questions regarding art expertise and openness to art, as well as knowledge of the artist, none of these additional variables proved to influence the results.

Discussion

Main Hypotheses

It was expected that viewers' ability to correctly identify the emotions intended by the artists would be highest for those with higher emotional intelligence. Further, it was expected that the match between viewers' experienced emotions and that experienced by the artist in conjunction with each artwork would be greatest for those higher in empathy. Lastly, it was expected that viewers with a higher emotional intelligence would correctly feel the emotions that the artist intended to convey to their viewers. Some support was found for both of these predictions. Specifically, those higher in total EI, well-being, self-control and sociability were more accurate at identifying the intended emotions. Those higher in total EI and sociability were more likely to experience the same emotions as the artist. The evidence also supported the finding that individuals with higher self-control and sociability felt the emotions that the artist intended.

The well-being subscale measures the facets of trait optimism, self-esteem and trait happiness. It could be that well-being, beyond being a basic factor of overall EI, is also a core or base requirement for high EI. Thus, it would make sense that well-being was related to intended emotions, as total EI was also correlated, and well-being could be a foundational component of EI. Also, well-being could serve as an emotional baseline, as it considers the traits of a positive person. It could be the case that in order to accurately reflect on the emotions of

an artwork, the viewer needs to be able to use the other components of EI, whilst well-being serves as an underlying baseline that allows for use of the other facets. In this way, a high well-being score may allow the viewer to have a stable reference point in order to be able to compare the emotional experience of processing an art piece.

The self-control subscale includes the facets of impulsiveness (low), stress management, and emotion regulation. It could be the case that the viewer needs to have self-control while processing the emotions of an artwork, so that they can properly process the relevant emotions. A viewer must be able to regulate their emotions effectively in order to record the emotions they are feeling and the emotions they think the artist intended. Low impulsivity is also critical while filling out the extensive inventories, to have the control to pause with each emotion word and indicate to which extent they feel that emotion.

Sociability is another subscale of the TEIQue-SF, and involves emotion management, assertiveness and social awareness. It could be seen as obvious that a high ability to be aware of others' emotional status would translate into an accurate ability to know which emotions an artist intends for one to feel. However, the barrier of an unknown artist, attempting to translate emotions through a painting could easily shatter the sense of social awareness, as seen through artwork 2 and 3. It is very interesting that sociability was correlated to both intended and experienced emotions, as the social interaction between the artist and the viewer was removed and replaced by a piece of art.

It is also interesting that the emotionality subscale was not correlated with intended or experienced emotions in any case. The facets of emotionality are emotion perception, emotion expression and relationships. This study was examining the relationship between the artist and the viewer, yet this factor was not related. Also, emotion perception seems to be critical to accurately assessing intended emotions. This researcher suggests that participants may find it difficult to accurately assess their own emotionality in general, and specifically within the TEIQue-SF. Self report measures are not always accurate, as humans often have a skewed view of themselves. In this case, a lack of self-awareness or inability to accurately know one's own emotionality may have been a factor in the lack of correlation to emotionality. Perhaps the use of an ability measure rather than a self-report, trait measure would provide different results and more insights. Also, as this subscale relates to expressing emotions in relationships, it may be the case that moderately higher emotionality for some people means the ability to identify and express their own emotions, but not very accurate at perceiving and responding to the emotions of others.

Furthermore, in regards to the measure of empathy, those higher in the IRI subscale of personal distress were more likely to experience a discrepancy when indicating the emotions they experienced as well as more discrepancy when identifying the emotions the artist intended. Thus, the higher an individual's personal distress scores, the more discrepancy they have (the less accurate they are) in identifying the emotions that the artist intended them to feel. This is also the case for experienced emotions and personal distress. Although empathy,

measured through the IRI, was hypothesized to have a stronger relationship with experienced emotions, EI was found to have a much stronger relationship than empathy. The lack of support regarding the hypothesis regarding the relationship of empathy serves to support the hypothesis regarding EI. The lack of a negative relationship between empathy and emotion discrepancies serves to rule out the possibility that empathy, rather than EI, allows an individual to understand the emotions of visual art. By ruling out a possible alternate explanation, it serves to support the hypothesis that EI is a determining variable, besides art expertise, in predicting one's ability to understand art.

The only significant finding between both intended emotions and experienced emotions was the personal distress facet of the IRI. This facet is described by Sittler, Cooper and Montag (2019) as "personal discomfort when confronted with the **emotional** state of others", which intuitively seems to be connected to experiencing an artist's emotions when viewing their artwork, particularly if there are negative emotions being conveyed. However, it is interesting that perspective taking, the ability to understand how someone else feels, and fantasy, the ability to relate to made-up characters, did not have a relationship with experienced emotions. Additionally, the stronger relationships between intended emotion discrepancies and EI in comparison to experienced emotion discrepancies and EI support the first hypothesis, and additional support is exhibited through the strong relationship between experienced emotions and EI. Overall, there is partial support for the hypothesis, which depicts a negative

relationship between discrepancies in the intended emotions of an artwork and the

viewer's EI.

Artwork 1

    The Artist

        All of the support for the hypotheses, all of the significant findings were in

relation to artwork 1. What makes Artwork 1 different than the others? The artist

should be considered first. One might guess that artist 1 could have had higher EI,

and that might have made them batter at portraying their emotions to the viewers.

However, artist 1 had an EI that was actually marginally lower than the other two

artists, nor were their empathy scores substantially different from the other artists.

A more likely explanation for the difference is in the artist' level of art expertise:

this artist was specifically recruited because of their enrollment in a university art

program. In response to the question "Have you studied fine art/art history?" the

artist for artwork 1 responded "yes, I have extensive knowledge in the art field".

In response to "I consider myself knowledgeable about art", the artist indicated 7,

strongly agree (on a scale of 1-7). Therefore, it could be that this artist's art

knowledge was able to translate, through a familiarity with art, to the effective

ability to communicate emotionally with the audience. Perhaps this type of

experience, the art program, also allowed the artist to have a clearer

conceptualization and purpose in communication conveyed through their art.

    The Artwork

The artist's training was clearly evident in the evocative nature of the piece. Artwork 1 had words written along the bottom, "I've never felt anything like this before". However, this phrase does not describe any particular emotion to the viewer, so this phrase is unlikely to influence a direct correspondence between the artist's emotions and the viewer. However, the use of words within the artwork is a large distinguishing factor that may have influenced the viewers. Perhaps the phrase encouraged the viewer to reflect on their emotions more readily than the other artworks. Additionally, the phrase could apply to some of the emotion terms, specifically "novelty".

The artwork also was quite different than the other two pieces because it had a divided middle and two very different colour schemes on either side. Perhaps the diversity within the artwork could have translated into lower discrepancies. Furthermore, when comparing the content of the three artworks, artwork 1 and 3 were abstract, whereas artwork 2 fit into the genre of realism. However, if genre were a factor, then similar results should be expected from artwork 3.

Order of Artworks Presented

In order to be able to determine whether the order of presentation of the pieces influenced outcomes, the order of the presentation was changed each day. Although this eliminated order from being a factor that influenced the overall findings, the change of the order confused the participants. The response booklet given to the participants was labeled in order (1, 2, 3), yet some participants had

viewed the art in a different order (2, 3, 1, for example) and had to skip the first response section to be able to match the sheet with the artwork. This proved to be confusing and perhaps distracting to many participants, and is worth mentioning although it did not have an effect on the overall findings.

Viewers and Openness to Art

The demographic categories of the participants were interesting in a few ways. When creating the hypotheses, art expertise was foreseen to be a variable that also had potential to be a confounding factor. However, as outlined in the results, almost no participants had any art expertise. Thus, perhaps more support would be found with a group of participants more familiar and with more knowledge of art. Due to the expertise of artist 1, which had a meaningful impact on the outcomes, presumably greater expertise on the part of the viewer participants might also lead to more interesting relationships between these variables. Also, responses to the remaining items in the Openness to Art (OA) questionnaire depicted a group of participants that were comfortable with art and were prepared to reflect on the related emotional experience. It seems that the participants were comfortable with art, but not educated about it, which could have influenced the results. Perhaps the hypothesis is better supported among individuals with higher levels of art expertise and experience. Further studies should consider recruiting participants with more art education as well as a greater diversity in age and gender. Furthermore, the OA questionnaire did not have a high reliability, and should be developed and tested for further research.

Methodological Improvements

Additionally, throughout the response sections, particularly for the emotion inventories, it was often the case that an item was left blank and seemingly simply missed. This could be from a lack of careful attention from the participant, a form of exhaustion due to the number of items requiring responses throughout the package, or due to the way the items were laid out on the paper. Further study should consider how to mitigate this issue, and reduce the number of missing responses. A number of suggestions have already been made, including a larger sample and more consistency in sample numbers for each presentation order grouping. Further, the inventories should be given to the viewer in the presentation order to avoid confusion. Also, future studies could be conducted in a room with more natural light and a better gallery or museum atmosphere, as the present study was conducted in a basement classroom. Also, this researcher recommends, if this study were to be done again, that the researcher has a separate room to obtain informed consent and explain the procedure to the participants. This would eliminate noise, as well as prevent the participants from pre-viewing the artworks. Additionally, the artworks should be presented on the wall with open space in order to simulate a more natural art-viewing experience, as noted in the literature review. It would also be helpful for the participants to have clipboards to record their responses with, rather than sitting at desks, so they can stand and view the art and record responses more easily. Or, if possible, personal electronic tablets that allowed participants to enter responses online would be more helpful, as they could be programmed to require

responses to each emotion term. Also, all artists included in further research should be art experts.

Finally, further studies may benefit from using different measures. Since EI was related to emotional accuracy in art understanding, it would be interesting if an alternate EI measure was used, such as the primary ability EI measure, the MSCEIT. Perhaps a different measure of empathy could also be examined, since only one of the four facets of the present measure (the IRI) was found to be related to art understanding.

Conclusion

In seeking to further understand the emotional aspects of processing visual art, the present study compared the artists' emotions and the viewers' emotions. In response to Pelowski et al.'s (2018) findings regarding the transference of emotions through art installations, the present study again evaluated the role of trait empathy, as well as other variables that could be shown to account for differences in artistic engagement. Empathy did not provide any significant results, besides a relationship between those who experience higher stress in the face of negative emotions and less accuracy in emotion identification. Thus, there is evidence that supports one's empathy level does not allow one to understand art more accurately. For one artwork, viewers with a higher EI were more accurate in experiencing the same emotions as the artist, guessing the intended emotions of the artist, as well as experiencing the emotions that the artist intended. Thus, evidence was found that suggests for some art pieces, those with a higher EI will

be able to more accurately understand the emotional meaning as conveyed

through the artwork. Further, some artwork may be more accurately understood if

the artist that creates it has art expertise, and perhaps if there are other significant

clues, such as a title. Thus, individual differences such as art expertise and EI are

likely predictive factors in an individual's ability to understand the conveyance of

emotions through art.

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(Supplemental)

Appendix A

Advertising that was posted around the Tyndale University Campus

Appendix B

Artist Informed Consent Form

Tyndale University College & Seminary
3377 Bayview Ave
M2M 3S4

Project Title: The Relationship between Emotional Intelligence and

Understanding the Emotions of Visual Art

Name of Investigators: Hannah Gusé, supervised by Dr. Nancy Ross; Associate

Professor of Psychology

How to Contact Investigators:

Hannah Gusé: hannahguse@gmail.com or (519) 500-1142

Dr. Nancy Ross: nross@tyndale.ca or 416.226.6620 ext. 2708

October 24th-26th 2019,

I voluntarily agree to participate in this research study upon invitation. The

current study has been reviewed and has received necessary ethics approval

through the Research Ethics Board. This study is seeking to understand the

relationship between Emotional Intelligence, which is one's ability to understand

and manage emotions, as well as the ability to understand the emotions of an art

piece. I understand that the duration of my participation could exceed one hour. I

understand that I can terminate my participation at any time without penalty and

that my termination will not affect the extra credit I am able to earn. I understand

I will be asked to complete a variety of inventories, questionnaires and surveys. I

will be viewing art pieces, and if they make me uncomfortable, I am allowed to walk away, skip that artwork or leave the study. If I experience intense emotions and need to seek counseling, I am aware that it is free for Tyndale students and located in the B500 wing. I understand that I will benefit from a pleasant emotional experience and the opportunity to view original art. If I feel I need to contact a higher authority, or have questions about my rights as a participant, I know I can contact the supervisor of this study (Dr. Ross) or the REB (reb@tyndale.ca). The testing process has been explained in full to me by the experimenter, and they have answered all my questions. I understand that I am to answer all questions honestly. I understand that I will be asked to take a series of tests, and that the answers provided will be confidential. Confidentiality implies that my answers will be kept in a safe and secure place, and will be associated with my participant number and no other identifying information.

I am fully aware of what is expected of me, and of the conditions of confidentiality.

_____   _____   _____

(participant's signature)   (investigator's signature)   (date)

Appendix C

Trait Emotional Intelligence Questionnaire – Short Form

Instructions: please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

1..........2..........3..........4..........5..........6..........7
Completely Disagree   Completely Agree

1. Expressing my emotions with words is not a problem for me.	1	2	3	4	5	6	7
2. I often find it difficult to see things from another person's point of viewpoint.	1	2	3	4	5	6	7
3. On the whole, I'm a highly motivated person.	1	2	3	4	5	6	7
4. I usually find it difficult to regulate my emotions.	1	2	3	4	5	6	7
5. I generally don't find life enjoyable.	1	2	3	4	5	6	7
6. I can deal effectively with people.	1	2	3	4	5	6	7
7. I tend to change my mind frequently.	1	2	3	4	5	6	7
8. Many times, I can`t figure out what emotion I`m feeling.	1	2	3	4	5	6	7
9. I feel that I have a number of good qualities	1	2	3	4	5	6	7
10. I often find it difficult to stand up for my rights.	1	2	3	4	5	6	7
11. I`m usually able to influence the way other people feel.	1	2	3	4	5	6	7

12. On the whole, I have a gloomy perspective on most things.	1	2	3	4	5	6	7
13. Those close to me often complain that I don't treat them right.	1	2	3	4	5	6	7
14. I often find it difficult to show my affection to those close to me.	1	2	3	4	5	6	7
15. On the whole, I'm able to deal with stress.	1	2	3	4	5	6	7
16. I often find it difficult to show my affection to those close to me.	1	2	3	4	5	6	7
17. I'm normally able to "get into someone's shoes" and experience their emotions.	1	2	3	4	5	6	7
18. I normally find it difficult to keep myself motivated.	1	2	3	4	5	6	7
19. I'm usually able to find ways to control my emotions when I want to.	1	2	3	4	5	6	7
20. On the whole, I'm pleased with my life.	1	2	3	4	5	6	7
21. I would describe myself as a good negotiator.	1	2	3	4	5	6	7
22. I tend to get involved in things I later wish I could get out of.	1	2	3	4	5	6	7
23. I often pause and think about my feelings.	1	2	3	4	5	6	7
24. I believe I'm full of personal strengths.	1	2	3	4	5	6	7
25. I tend to "back down" even if I know I'm right.	1	2	3	4	5	6	7
26. I don't seem to have any power at all over other people's	1	2	3	4	5	6	7

feelings.							
27. I generally believe that things will work out fine in my life.	1	2	3	4	5	6	7
28. I find it difficult to bond well even with those close to me.	1	2	3	4	5	6	7
29. Generally, I'm able to adapt to new environments.	1	2	3	4	5	6	7
30. Others admire me for being relaxed.	1	2	3	4	5	6	7

Appendix D

Interpersonal Reactivity Index

INTERPERSONAL REACTIVITY INDEX

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

A	B	C	D	E
DOES NOT DESCRIBE ME ME WELL				DESCRIBES VERY WELL

1. _____ I daydream, and fantasize, with some regularity, about things that might happen to me.

2. _____ I often have tender, concerned feelings for people less fortunate than me.

3. _____ I sometimes find it difficult to see things from the "other guy's" point of view.

4. _____ Sometimes I don't feel very sorry for other people when they are having problems.

5. _____ I really get involved with the feelings of the characters in a novel.

6. _____ In emergency situations, I feel apprehensive and ill-at-ease.

7. _____ I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.

8. _____ I try to look at everybody's side of a disagreement before I make a decision.

9. _____ When I see someone being taken advantage of, I feel kind of protective towards them.

10. _____ I sometimes feel helpless when I am in the middle of a very emotional situation.

11. _____ I sometimes try to understand my friends better by imagining how things look from their perspective.

12. _____ Becoming extremely involved in a good book or movie is somewhat rare for me.

13. _____ When I see someone get hurt, I tend to remain calm.

14. _____ Other people's misfortunes do not usually disturb me a great deal.

15. _____ If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

16. _____ After seeing a play or movie, I have felt as though I were one of the characters.

17. _____ Being in a tense emotional situation scares me.

18. _____ When I see someone being treated unfairly, I sometimes don't feel very much pity for them.

19. _____ I am usually pretty effective in dealing with emergencies.

20. _____ I am often quite touched by things that I see happen.

21. _____ I believe that there are two sides to every question and try to look at them both.

22. _____ I would describe myself as a pretty soft-hearted person.

23. _____ When I watch a good movie, I can very easily put myself in the place of a leading character.

24. _____ I tend to lose control during emergencies.

25. _____ When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

26. _____ When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

27. _____ When I see someone who badly needs help in an emergency, I go to pieces.

28. _____ Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Appendix E

Demographics and Art Expertise Survey

1. Age:
   □ under 18
   □ 18-21
   □ 22-25
   □ 26-29
   □ 30 or older
2. Gender:
   □ male □ female □ other
3. Ethnicity:
   □ Caucasian
   □ African American
   □ Asian
   □ Middle Eastern
   □ European
   □ Other (please specify): _____
   □ Prefer not to answer
4. Have you studied fine art/art history?
   □ no
   □ yes, but only one or two courses
   □ yes, I have extensive knowledge in the art field
5. Do you personally know any of the artists who created the work you saw in this room?
   □ No
   □ Yes: please specify which artwork(s): _____

Please indicate the degree to which you agree or disagree with the following statements.

	1	2	3	4	5	6	7
I consider myself knowledgeable about art							
I do not usually understand art							
I am comfortable looking at/discussing art							
I like visual art							

Strongly Disagree   Neutral   Strongly Agree

Art should make you feel							
Art should not make you think							

Appendix F

Experienced Emotions Inventory for Artists

While I was **making** the art, **I experienced**:

	Not at all							Extremely
	0	1	2	3	4	5	6	7
Stimulated: encouraged interest in								
Aware of body: concept or consciousness of one's own body								
Absorbed: attention fully engaged; greatly interested								
Anxious: experiencing worry, unease, or nervousness								
Self-Aware: having conscious knowledge of one's own character and feelings								
Confused: unable to think clearly; bewildered								
Profundity: deep insight, great depth or intensity of a state								
Moved: strong feelings of sadness or sympathy, touched								
Sad: feeling or showing sorrow; unhappy								
Surprised: mild astonishment								
Overwhelmed: strong emotional effect								
Disgusted: revulsion or strong disapproval								
Transformed: thorough or dramatic change in the form								
Chills: very impressed or amazed								
Serenity: calm, peaceful and untroubled								
Fear: unpleasant emotion caused by sense of danger								
Happy: pleasure or contentment								
Need to leave: want to abandon or avoid								
Novelty: new, original, unusual								

Loss of Awareness: interruption of awareness of oneself and ones surroundings							
Distracted: unable to concentrate, preoccupied							
Angry: strong feeling of displeasure or hostility							
Bored: unoccupied or lacking interest							
Awe: reverential respect mixed with fear or wonder							
Insight: a deep, intuitive understanding							
Thrilled: excitement and pleasure							
Harmony: pleasant and consistent							
Like Crying							
Epiphany: a moment of sudden revelation or insight							
Relief: reassurance and relaxation							
Shock: sudden upsetting or surprising event or experience							
Sense of brightness: cheerfulness, light							
Changed Mind: new opinion or belief							
Sublime: of such excellence, grandeur, or beauty as to inspire great admiration or awe							
Disappointed: sad or displeased due to failed expectations							
Embarrassed: awkward, self-conscious, ashamed							
Euphoria: feeling or state of intense excitement and happiness							

Appendix G

Intended Emotions Inventory for Artists

While **viewers** view my art, **I intend** for **them** to feel:

	Not at all 0	1	2	3	4	5	6	Extremely 7
Stimulated: encouraged interest in								
Aware of body: concept or consciousness of one's own body								
Absorbed: attention fully engaged; greatly interested								
Anxious: experiencing worry, unease, or nervousness								
Self-Aware: having conscious knowledge of one's own character and feelings								
Confused: unable to think clearly; bewildered								
Profundity: deep insight, great depth or intensity of a state								
Moved: strong feelings of sadness or sympathy, touched								
Sad: feeling or showing sorrow; unhappy								
Surprised: mild astonishment								
Overwhelmed: strong emotional effect								
Disgusted: revulsion or strong disapproval								
Transformed: thorough or dramatic change in the form								
Chills: very impressed or amazed								
Serenity: calm, peaceful and untroubled								
Fear: unpleasant emotion caused by sense of danger								
Happy: pleasure or contentment								
Need to leave: want to abandon or avoid								

Novelty: new, original, unusual								
Loss of Awareness: interruption of awareness of oneself and ones surroundings								
Distracted: unable to concentrate, preoccupied								
Angry: strong feeling of displeasure or hostility								
Bored: unoccupied or lacking interest								
Awe: reverential respect mixed with fear or wonder								
Insight: a deep, intuitive understanding								
Thrilled: excitement and pleasure								
Harmony: pleasant and consistent								
Like Crying								
Epiphany: a moment of sudden revelation or insight								
Relief: reassurance and relaxation								
Shock: sudden upsetting or surprising event or experience								
Sense of brightness: cheerfulness, light								
Changed Mind: new opinion or belief								
Sublime: of such excellence, grandeur, or beauty as to inspire great admiration or awe								
Disappointed: sad or displeased due to failed expectations								
Embarrassed: awkward, self-conscious, ashamed								
Euphoria: feeling or state of intense excitement and happiness								

Appendix H

Experienced Emotions Inventory for Viewers

While I was **viewing** the art, I **experienced:**

	Not at all							Extremely
	0	1	2	3	4	5	6	7
Stimulated: encouraged interest in								
Aware of body: concept or consciousness of one's own body								
Absorbed: attention fully engaged; greatly interested								
Anxious: experiencing worry, unease, or nervousness								
Self-Aware: having conscious knowledge of one's own character and feelings								
Confused: unable to think clearly; bewildered								
Profundity: deep insight, great depth or intensity of a state								
Moved: strong feelings of sadness or sympathy, touched								
Sad: feeling or showing sorrow; unhappy								
Surprised: mild astonishment								
Overwhelmed: strong emotional effect								
Disgusted: revulsion or strong disapproval								
Transformed: thorough or dramatic change in the form								
Chills: very impressed or amazed								
Serenity: calm, peaceful and untroubled								
Fear: unpleasant emotion caused by sense of danger								
Happy: pleasure or contentment								
Need to leave: want to abandon or avoid								

Novelty: new, original, unusual								
Loss of Awareness: interruption of awareness of oneself and ones surroundings								
Distracted: unable to concentrate, preoccupied								
Angry: strong feeling of displeasure or hostility								
Bored: unoccupied or lacking interest								
Awe: reverential respect mixed with fear or wonder								
Insight: a deep, intuitive understanding								
Thrilled: excitement and pleasure								
Harmony: pleasant and consistent								
Like Crying								
Epiphany: a moment of sudden revelation or insight								
Relief: reassurance and relaxation								
Shock: sudden upsetting or surprising event or experience								
Sense of brightness: cheerfulness, light								
Changed Mind: new opinion or belief								
Sublime: of such excellence, grandeur, or beauty as to inspire great admiration or awe								
Disappointed: sad or displeased due to failed expectations								
Embarrassed: awkward, self-conscious, ashamed								
Euphoria: feeling or state of intense excitement and happiness								

Appendix I

Intended Emotions Inventory for Viewers

I think the **artist** of this artwork **intended** me to feel:

	Not at all							Extremely
	0	1	2	3	4	5	6	7
Stimulated: encouraged interest in								
Aware of body: concept or consciousness of one's own body								
Absorbed: attention fully engaged; greatly interested								
Anxious: experiencing worry, unease, or nervousness								
Self-Aware: having conscious knowledge of one's own character and feelings								
Confused: unable to think clearly; bewildered								
Profundity: deep insight, great depth or intensity of a state								
Moved: strong feelings of sadness or sympathy, touched								
Sad: feeling or showing sorrow; unhappy								
Surprised: mild astonishment								
Overwhelmed: strong emotional effect								
Disgusted: revulsion or strong disapproval								
Transformed: thorough or dramatic change in the form								
Chills: very impressed or amazed								
Serenity: calm, peaceful and untroubled								
Fear: unpleasant emotion caused by sense of danger								
Happy: pleasure or contentment								

Need to leave: want to abandon or avoid								
Novelty: new, original, unusual								
Loss of Awareness: interruption of awareness of oneself and ones surroundings								
Distracted: unable to concentrate, preoccupied								
Angry: strong feeling of displeasure or hostility								
Bored: unoccupied or lacking interest								
Awe: reverential respect mixed with fear or wonder								
Insight: a deep, intuitive understanding								
Thrilled: excitement and pleasure								
Harmony: pleasant and consistent								
Like Crying								
Epiphany: a moment of sudden revelation or insight								
Relief: reassurance and relaxation								
Shock: sudden upsetting or surprising event or experience								
Sense of brightness: cheerfulness, light								
Changed Mind: new opinion or belief								
Sublime: of such excellence, grandeur, or beauty as to inspire great admiration or awe								
Disappointed: sad or displeased due to failed expectations								
Embarrassed: awkward, self-conscious, ashamed								
Euphoria: feeling or state of intense excitement and happiness								

Appendix J

"Extra Credit Request Form"

Name	Student Number	Course Code

Appendix K

Participants Informed Consent Form

Tyndale University College & Seminary
3377 Bayview Ave
M2M 3S4

Project Title: The Relationship between Emotional Intelligence and

Understanding the Emotions of Visual Art

Name of Investigators: Hannah Gusé, supervised by Dr. Nancy Ross; Associate

Professor of Psychology

How to Contact Investigators:

Hannah Gusé: hannahguse@gmail.com or (519) 500-1142

Dr. Nancy Ross: nross@tyndale.ca or 416.226.6620 ext. 2708

October _____, 2019,

I voluntarily agree to participate in this research study upon invitation. The

current study has been reviewed and has received necessary ethics approval

through the Research Ethics Board. This study is seeking to understand the

relationship between Emotional Intelligence, which is one's ability to understand

and manage emotions, as well as the ability to understand the emotions of an art

piece. I understand that the duration of my participation could exceed 5 hours, as I

am required to produce an art piece and complete several measures. I understand

that I can terminate my participation at any time without penalty and that my

termination will have no consequences. I understand I will be asked to complete

an original visual artwork, as well as a variety of inventories, questionnaires and surveys. I will be creating my own art piece, and if I feel uncomfortable, I am allowed to walk away or leave the study. If I experience intense emotions and need to seek counseling, I am aware that it is free for Tyndale students and located in the B500 wing. I understand that I will benefit from a pleasant emotional experience and the opportunity to view original art. I will also benefit by having my artwork displayed at Tyndale University. If I feel I need to contact a higher authority, or have questions about my rights as a participant, I know I can contact the supervisor of this study (Dr. Ross) or the REB (reb@tyndale.ca). The testing process has been explained in full to me by the experimenter, and they have answered all my questions. I understand that I am to answer all questions honestly. I understand that I will be asked to take a series of tests, and that the answers provided will be confidential. Confidentiality implies that my answers will be kept in a safe and secure place, and will be associated with my participant number and no other identifying information.

I am fully aware of what is expected of me, and of the conditions of confidentiality.

_____   _____   _____

(participant's signature)   (investigator's signature)   (date)

Appendix L

Reminder Instructions for Viewers

1. Please be quiet and as silent as possible to minimize distractions.

2. Do not use your cell phone while participating.

3. Please view the artworks from left to right, in a clockwise manner.

4. Please take a minimum of 15 seconds to view each artwork.

5. For each artwork, please complete both of the inventories – experienced and intended emotions (in that order).

6. Take your time filling out the inventories, there is plenty of time!

7. Once you view each artwork and fill out the inventories, please move away from the art to fill out the remaining three surveys – Demographic and Art Expertise and the TEIQue-SF and the IRI.

8. If you are eligible for extra credit (in a PSYC course), please fill out the Extra Credit Request Form located at the experimenter's table near the exit.

Appendix M

Correspondence Email with Artists

Hey *Artist Name*!

Just getting in touch regarding my Psychology Study that I will be running this year, looking into a person's ability to understand the emotions of art. As an artist participant, you will be completing a piece of original visual art that will be on display as part of the experiment. I would like the art pieces to be done by OCTOBER 14. You have creative freedom with this piece, and you will also receive a $25 amazon giftcard as compensation. I will be following up with you, but you can contact me here through email or via text/call at (519) 500-1142. Your participation will also involve filling out approximately 5 questionnaires upon completion of the art piece. In my thesis proposal this process is described as follows:

Over the month of September, the experimenter met with each artist individually to physically receive the art piece, as well as administer the intended emotions and experienced emotions inventories and the TEIQue-SF and IRI after informed consent was received. The intended emotions and experienced emotions inventories were completed by each artist regarding only their own piece to depict the emotions felt while creating the piece as well as the emotions they intend the viewer to feel when regarding their piece. The "Artist Participants" were also required to complete the TEIQue-SF (measures emotional intelligence) and the IRI (measures empathy). Having submitted a physical, original, painted artwork and completed the intended emotions and experienced emotions inventories, as well as the TEIQue-SF and IRI, the "Artist Participants" were compensated by a $25 gift card for Amazon, as well as a "Thank You" card from the experimenter.

I will also attach the consent form so you can be informed of the details prior to your involvement.

Thank you again for being willing to contribute and participate in my study, it means the world to me! I look forward to discussing further and am always able

to answer any questions! again, your artwork will be displayed and you will be compensated via giftcard. You will also be eligible for 3% extra credit towards any "PSYC" course.

Looking forward to hearing from you and excited to get this process started!

Appendix N

Art References for Pilot Run

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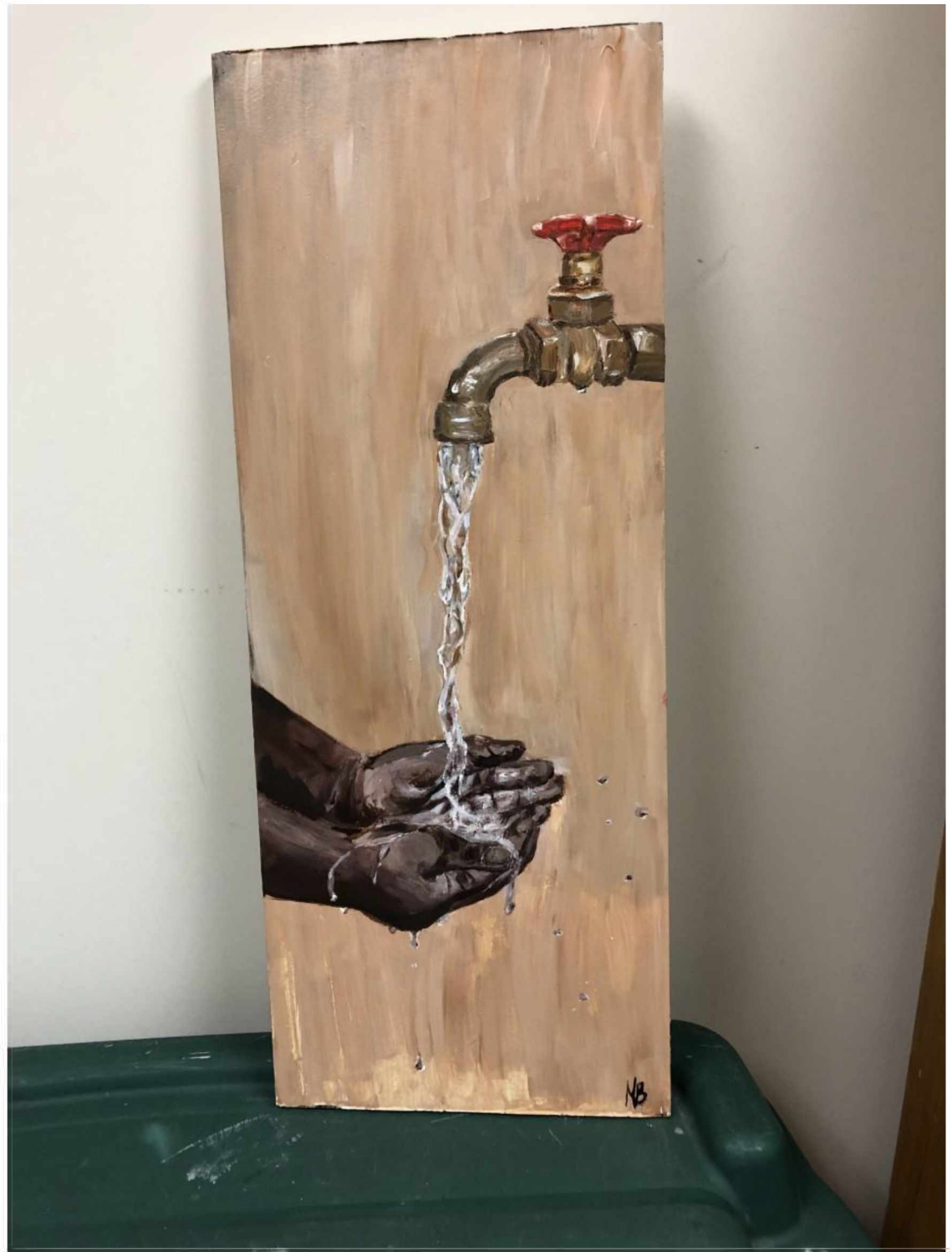tU5hC4kAjn9OnTztmmJMTANACtp4a_Icx6RsxSEbRu7DE

Appendix O

Artworks Presented to Viewers

Artwork 1

Artwork 2

Artwork 3