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A Book and its Cover: The effects of dynamic and static facial expressions on the perction of personality traits

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A BOOK AND ITS COVER: THE EFFECTS OF DYNAMIC AND STATIC FACIAL EXPRESSIONS ON THE PERCEPTION OF PERSONALITY TRAITS

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ABSTRACT

A BOOK AND ITS COVER: THE EFFECTS OF DYNAMIC AND STATIC FACIAL EXPRESSIONS ON THE PERCEPTION OF PERSONALITY TRAITS

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This study used three dynamic and three static images of older adult men depicting either smiling, scowling, or neutral facial expressions to examine the influence of motion on emotion identification and stereotype activation, specifically the Halo Effect, in older adults (55-85 years). To that end, two hypotheses emerged: 1) older adults will be more accurate in identifying facial expressions when viewing dynamic facial expressions than static facial expressions, and 2) participants exposed to the dynamic stimuli would experience greater levels of the Halo Effect with the greatest levels in the smiling facial expression condition. A 2 (stimulus type: dynamic and static) x 3 (Facial expression: smile, neutral, scowl) mixed design was used. Two hundred participants between the ages of 55 and 85 years, viewed either a dynamic model exhibiting smiling, neutral, and scowling facial expressions, or a static model exhibiting smiling, neutral, and scowling facial expressions. To investigate the role of motion on emotion identification an emotion accuracy question was used. Additionally, two measures assessed the presence of the Halo Effect: The Self-Assessment Manikin (e.g., arousal, dominance, and pleasure) and four social perception questions (e.g., attractiveness, honesty, pleasing to look at, and threatening). Results indicate that participants were more accurate when identifying static scowling and smiling facial

expressions and the dynamic neutral facial expression. Participants also attributed more positive traits to static rather than dynamic facial expressions.

Keywords: Halo Effect, older adults, facial expressions, perception

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CHAPTER I

INTRODUCTION

First impressions of individuals are of the utmost importance for effective social communication (Haxby, Hoffman, & Gobbini, 2000; Brosch, Pourtois, & Sander, 2010). During these initial moments, we make inferences about traits (i.e., likeability, aggressiveness, attractiveness, competence, trustworthiness) of an individual (Willis & Todorov, 2006; Todorov, Pakrashi, & Oosterhof, 2009). A common source of information used in this process is the face and its expressions of emotion (Di Domenico, Palumbo, Mammarella, & Fairfield, 2015). The perception of emotion via facial expression is a complicated process that requires the perceiver to find meaning in any one combination of facial muscle changes. It is the result of this process that perceivers use to ascribe emotion, motivation, social traits, and intent towards another in social settings (Ekman 1993; Olivola, Funk, & Todorov, 2014).

Ekman (1970) identified six universal emotions: anger, disgust, fear, happiness, sadness, and surprise. These emotions have been frequently used to observe trait perceptions (i.e., trustworthiness, openness, agreeableness) . These perceptions, however, are susceptible to stereotypes. One such stereotype is the Halo Effect, in which perceived physical attractiveness affects the attribution of positive or negative traits (Thorndike, 1920; Dion, Bercheid, & Walster, 1972; Nisbett & Wilson, 1977). This effect has been recorded across various demographics; however, little research has examined the Halo Effect as a stereotype in perceptions made by older adults between the ages of 55 and 85.

Findings from the limited research on the Halo Effect and older adult populations has indicated that older adults are still susceptible to the effect and stereotype others

based on perceived attractiveness levels (Larose & Standing, 1998). However, the majority of this research has been done with still or static photographs of models producing a facial expression, as opposed to dynamic stimuli. For the purposes of this study, the term dynamic stimuli will refer moving facial expression stimuli. Research utilizing dynamic stimuli includes the use of short video recordings of models producing facial expressions. As dynamic stimuli mimic the typical presentation of emotional stimuli in social settings, a dynamic advantage for perception accuracy has been recently reported with 74.0 percent accuracy rating for static images and an 82.8 percent rating for dynamic images (Blais, Fiset, Roy, Saumure-Régimbald & Gosselin 2017). Research comparing static and dynamic stimuli has also reported no difference in attractiveness ratings between static and dynamic stimuli (Rhodes et al., 2011). As such, a dynamic presentation of the stimuli may present more appropriate information for populations in general, but may be especially beneficial for an older population.

For the purposes of this study, the phrase dynamic advantage refers to higher levels of accuracy observed in the identification of specific emotions (i.e., anger, disgust, fear, happiness, neutral, sadness, and surprise) when viewing dynamic images. Given the importance of accurate emotion perception in social settings, a vast amount of research has investigated the intricacies of how perceptions are created. However, as previously noted, literature pertaining to older adults and the Halo Effect, and older adults and dynamic stimuli is somewhat limited. Of these investigations, some have demonstrated a decrease in older adult's ability to accurately identify emotions derived from facial expressions (Krendl & Ambady, 2010). As the population of older adults continues to grow due to increased lifespans, further research is needed to understand how perceptual

processes change with age. As such, this study investigated the effects of dynamic and static facial stimuli on the perception of personality traits and the Halo Effect in older adults.

CHAPTER II

LITERATURE REVIEW

Social Trait Inferences

Previous research on trait inferences via social perception has reported that specific traits such as extroversion, trustworthiness, dominance, and openness can be inferred based on photographs and video stimuli ranging from full- to partial-body images, and facial expressions (Borkenau & Liebler, 1992; Zebrowitz, Hall, Murphy, & Rhodes, 2002; Willis & Todorov, 2006; Todorov, Baron, & Oosterhof, 2008; Naumann, Vazire, Rentfrow, & Gosling, 2009; Todorov, Pakrashi & Oosterhof, 2009).

With regard to full body information, research has examined how accuracy ratings of trait inferences are affected when stimuli incorporating images of the full body are posed versus spontaneous (Naumann, Vazire, Rentfrow, & Gosling, 2009). Results from Naumann, Vazire, Rentfrow, and Gosling (2009) indicate that extroversion and agreeableness yield accuracy levels above chance for spontaneous expressions and not posed expressions. Literature using photographs and videos of models from waist to head have investigated the amount of information that is necessary for high levels of trait inference accuracy (Borkenau & Liebler, 1992). To assess this, both participants and expression models were asked to rate four different stimuli (e.g., video with sound, video with no sound, audio only, and static image from video) on various personality traits. Of the four stimuli types, participants were the most accurate in their assessment of personality traits when viewing videos with sound compared to video only, audio only, and static images.

Research involving the face has primarily investigated the role of facial expressions on the rating of different traits at zero acquaintance (e.g., dominance, affiliation, agreeableness, conscientiousness, extroversion, trustworthiness) (Knutson, 1996; Zebrowitz, Hall, Murphy, & Rhodes, 2002; Montepare & Dobish, 2003; Willis & Todorov, 2006; Todorov, Baron, & Oosterhof, 2008; Todorov, Pakrashi, & Oosterhof, 2009; Senft, Chentsova-Dutton, & Patten, 2016). For the purposes of this study, the phrase zero acquaintance refers to novel stimuli. For example, several studies have reported findings suggesting that smiling individuals usually receive higher ratings on traits tied to sociability (e.g., agreeableness, extroversion) (Meier, Landau, & Keefer, 2010; Senft, Chentsova-Dutton & Patten, 2016). However, given its ability to affect perceptions of traits, facial physical attractiveness has also been examined when making zero acquaintance inferences (Zebrowitz & Collins, 1997; Meier, Landau, & Keefer, 2010).

The Halo Effect

Edward Thorndike (1920) first observed the Halo Effect in a study wherein the researcher observed significant positive correlations for perceived physical traits such as "physique, bearing, neatness, voice, energy, and endurance" (p.26) and personality traits such as "intelligence, leadership, industry, dependability, loyalty, and general value to service." (p.27). Thorndike attributed this correlation to what he called the Halo Effect; perceivers attribute more positive or negative traits based on the level of attractiveness of one's outward physical traits. In Thorndike's (1920) initial hypothesis, the Halo Effect, extended bidirectionally to include greater attributions of corresponding traits for more attractive and unattractive stimuli (Nisbett & Wilson, 1977). Due to its robustness,

several studies have investigated how the Halo Effect affects perception, how it is activated, and who is most susceptible to it (Dion, Bercheid, & Walster, 1972; Nisbett & Wilson, 1977; Larose & Standing, 1998; Zebrowitz & Franklin 2014).

Nisbett and Wilson (1977) provide evidence that facial expressions of emotion might play a role in initiating the Halo Effect. In their initial experiment, the researchers had participants evaluate a professor that either presented himself as either "warm and friendly" or "cold and distant" (Nisbett & Wilson, 1977, p.250). The researchers' findings indicate that participants ratings of the warm confederate teacher were more positive and thereby affected the perception of his mannerisms and accent. While uncontrolled for, the researchers acknowledged that there may have been a difference in the frequency of the confederates smiling between warm and cold conditions. These findings provide insight into what initiates the Halo Effect (i.e., facial expression) but only does so for college aged participants and not older adults.

Older Adult Populations

Accurate emotion identification is a tool for social interaction that does not lose its importance with age. As such, various studies have explored how age affects perception. Within these studies there are two avenues of investigation that relate to the current line of questioning, how age of the individuals within the stimuli influences perception and how age of the perceiver influences perception. Sze, Goodkind, Gyurak, and Levenson (2012) conducted research that incorporated older adults as participants and as models in static and dynamic dynamic stimuli. This was done to investigate how static and dynamic information influences the recognition of emotion. The findings of this study include an advantage for older adults when identifying dynamic emotions

compared to static, but do not include increased accuracy levels for group membership (e.g., older adults examining images of older adults vs middle-aged adults examining images of middle-aged adults vs young adults examining images of young adults).

Another study examined the effects of age and gender on percieved physical attractiveness and incorporated images of older adult over 50 years of age as stimuli (McLellan & McKelvie, 1993). Findings from this study have helped identify that older women above the age of 50 have a greater decline in perceived attractiveness than men but are still perceived as more attractive by various age groups over 30 years old (30-49 years old, and 50+ years old) compared to younger adults (17-29 years old). These results may, in turn, offer a type of explanation for some differences in the occurance of the Halo Effect in older adult populations. Specifically, because attractiveness changes with age, perceptions that are biased by the Halo Effect may also differ in an older adult population.

Research on the Halo Effect and older adults has primarily focused on how the population's perceptions are biased by its effects. For example, Larose and Standing (1998) investigated how age affects the presentation of stereotypes in perception, specifically with regard to the Halo Effect. Initially, the authors hypothesized that older adults would not succumb to the Halo Effect because older adults, in theory, should have greater knowledge of the world and therefore the stereotypes within it (Larose & Standing, 1998). However, their results directly opposed this idea and the authors reported that photographs that had been rated by older participants as more highly attractive were also ascribed more positive characteristics than their unattractive counter-parts. Although, various researchers have reported findings that support the notion that

older adults are wiser and more experienced (Maylor, 1994; Harris, 1975 as cited in Kennedy, 1978). Further studies have found that older adults rely on stereotypes more than younger adults (Hoessler & Chasteen, 2008) and are susceptible to other stereotypes like the Baby Face Effect (BFE) even when looking at images of older adults (Zebrowitz & Franklin, 2014).

Similar to the Halo Effect, the Baby Face Effect (BFE) is a bias in perception that attributes a set of traits based on the type of facial features (either baby/childlike or mature/older) (Zebrowitz & Franklin, 2014). Zebrowitz and Franklin (2014) examined this effect in conjunction with the Halo Effect. Unlike the Halo Effect, the BFE attributes more childlike traits to more childlike faces. Zebrowitz and Franklin (2014) asked two age groups (18-to 22-year olds and 55-to-85-year olds) to rate photos of young and older adults on various traits including how attractive the photographed individual was, how baby faced, and how trustworthy. Similar to previous findings, the researchers recorded the existence of the Halo and Baby Face Effects in older participants across the age of the facial stimuli. Facial Stimuli that were perceived as more attractive were also ascribed lower hostility, higher trustworthiness, more competency, and more health. Whereas, facial stimuli that were rated higher in babyfacedness were ascribed lower hostility and higher trustworthiness. This thereby supports the notion that older adults are still susceptible to stereotypes, despite their greater wisdom/ experience.

Dynamic Stimuli

A staple in emotion perception research dating back to Ekman (1970) is the use of static images; however, in recent years, the use of dynamic facial expressions of emotion has resulted in more accurate perception of emotion than static facial expressions

(Lander, Christie, & Bruce, 1999; Ambadar, Schooler, & Cohen, 2005; Sedda, Manfredi, Parente, & Bottini, 2010; Chiller-Glaus, Schwaninger, Hofer, Kleiner, & Knappmeyer, 2011; Sze, Goodkind, Gyurak & Levenson, 2012). However, this effect has been shown to vary by emotion (Krendl & Ambady, 2010; Martinez, Falvello, Aviezer & Todorov, 2016). In a study by Martinez et al. (2016), different emotions were found to be accurately perceived with as little as 250 ms of exposure. The accuracy ratings continued to improve until two seconds of exposure. In older adults, research has shown a degree of cognitive decline affects the ability to correctly identify the negative emotion anger (Krendl & Ambady, 2010). However, when comparing older adult's accuracy rates using static and dynamic images, results indicated that motion in dynamic images may facilitate accurate perception of emotion (Krendl & Ambady 2010; Sedda, Manfredi, Parente, & Bottini, 2010; Maguinness & Newell, 2014). For example, Maguinness and Newell (2014) use a series of smiling and scowling dynamic and static stimuli to assess the role of motion in emotion identification. The researchers also incorporated the age of the participant as a variable by sampling both young and older adults. In each trial, participants were asked to memorize a different static or dynamic stimulus and later identify it from several options in the same or a novel orientation (e.g., head on, facing left, facing right). The researchers reported significant improvement in accuracy when the stimuli were learned in motion and maintained the same position.

Non-Dynamic Advantage. Human beings create inferences based on only a few moments of perception (Willis & Todorov, 2006; Todorov, Pakrashi & Oosterhof, 2009). Given this, and the lack of research on the subject, the current line of questioning is very important in further understanding the role of dynamic information on perceptual

inferences. Various studies have reported inconsistencies in the existence of a dynamic advantage (Kamachi et al., 2001; Fiorentini & Viviani, 2011; Maguinness & Newell, 2014). For example, Fiorentini and Viviani (2011) investigated whether a dynamic advantage existed for graded blends (morphed) of facial expressions. The researchers created stimuli that expressed one of several emotions (i.e., anger, disgust, fear, happiness, sadness, surprise) and asked participants to identify which of two emotions had been depicted (i.e., fear-anger, fear-sadness, happiness-sadness, happiness-disgust, anger-disgust, fear-surprise). The only pairing that was accurately identified more frequently from dynamic stimuli was anger-fear. However, no statistical significance was reported in support of the dynamic advantage. Thus, the researchers were unable to conclude that dynamic information provided any advantage for emotion identification accuracy tasks. In a similar study, Kamachi et al. (2001) investigated the influence of the speed with which dynamic facial expressions unfold on emotion identification. The authors' findings suggest better recognition of sadness using slow sequences, anger from medium-speed sequences, and happiness and surprise from fast sequences. However, the dynamic advantage was only observed when these speeds were applied, and all other comparisons were not significant. Therefore, a dynamic advantage appears to be inconsistent as it only appears under very specific conditions.

According to the U.S Census bureau (2018), by the year 2035, the population of older adults, age 65 and up, will exceed the number of children 18 years old and younger. Previous literature has shown that older adults differ both in their use of stereotypes (Hoessler & Chasteen, 2008) and the accuracy in which they perceive emotions (Krendl & Ambady, 2010). Given the rising population of older adults and the lack of research

investigating a decline in emotion identification, a better understanding of the relationship between pervasive stereotypes and emotion identification is needed. As such, the current study used both static and dynamic facial expressions to determine if a dynamic advantage occurs in older adult populations. Additionally, the susceptibility to the Halo Effect was also assessed in older adults. Based on previous literature, two hypotheses emerged. First, older adults would be more accurate in identifying facial expressions when viewing dynamic facial expressions than static facial expressions. Second, participants exposed to the dynamic stimuli would experience greater levels of the Halo Effect, with the greatest levels in the smiling facial expression condition.

CHAPTER III

METHOD

Participants

This study initially gathered a sample of 254 participants however, due to an error in the age question, data from 54 participants were excluded. As such, the current study utilized the data from 200 participants of any gender or ethnicity between the ages of 55 and 85 years old, recruited through Amazon's Mechanical Turk (MTurk). Participants were primarily female (64%), between the ages of 61-65 (25%), educated with some college (38%), white (92%), married (49%), and used Mturk an average of 10 or more times a week (80%). Each participant was reimbursed monetarily for his or her participation. This sample (N = 200) was used to explore Hypothesis 1. This sample size was estimated based on previous research (Nisbett & Wilson, 1977; Zebrowitz & Franklin, 2014) and an a priori effect size estimation from the program G*Power (Faul, Erdfelder, Lang & Buchner, 2007). In order to explore Hypothesis 2 a screening process was used to identify and exclude data on a case by case basis if the target emotion was not correctly identified. For example, a participant that correctly identified the scowling FE as angry would only have the data from their angry condition used. If a participant correctly identified more target emotions, then the data associated with all correct responses was used. This screening processes resulted in a reduced sample size (n = 139) and as such, the estimated sample size was not met for Hypothesis 2. Participants in this sample were primarily female (66%), fell in the age group of 61-65, educated with some college (36%), white (93%), married (49%), and used MTurk an average of 10 or more times a week (81%). Prior to participant recruitment, Human Subjects Review Committee (HSRC) permission was obtained.

Measures/Materials

This study used an emotion identification Likert-type question to assess emotion accuracy. The measurements used to assess the traits associated with the Halo Effect were the Self-Assessment Manakin and four social perception questions (e.g., attractiveness, honesty, pleasing to look at, and threatening). Each of these scales have been used to identify the influence of the Halo Effect in previous studies (Backs, Silva & Han, 2005; Morris, 1995; Radeke & Stahelski, under review). All of the questions, including those listed previously, the demographic questions, the informed consent, the debriefing, and all stimuli (Dynamic FACES database; Holland, Ebner, Lin, & Samanez-Larkin, 2018) were built within the Qualtrics survey platform.

Facial Images of Emotion. Three static and three dynamic images of a 70-year-old Caucasian male face from the Dynamic FACES database (used with permission; Holland, Ebner, Lin, & Samanez-Larkin, 2018), were used to portray three different emotions (e.g., Happy, Angry, and Neutral). Both sets were comprised of posed rather than spontaneous stimuli. In both stimulus conditions (static and dynamic), one image depicted a smiling, one image scowling, and one image neutral facial expression from the same actor. Each photograph was orientated head on and only included the full head and shoulders of the model. Participants were asked to select the emotion that coincided with the expression from a list of options (emotion accuracy question; angry, disgusted, fearful, happy, sad, surprised, and neutral). The dynamic and static images of each of the three facial expressions (Dynamic FACES database; Holland, Ebner, Lin, & Samanez-Larkin, 2018) accompanied each question set excluding the demographics section.

Dynamic stimuli. The dynamic stimuli were considered morphing stimuli. For the purposes of this study, morphing stimuli were defined as those that change as one image is superimposed onto another. For the current study this occurred as the dynamic stimuli changed, over two seconds, from a neutral expression into the target expression. Within the two second change each target expression unfolded at a rate of 30 frames per second (FPS) (Holland, Ebner, Lin, & Samanez-Larkin, 2018). The change began within one second of playing the video and concluded after one second of presenting the target expressions climax. Participants were instructed to view each of the stimuli for approximately three seconds before moving on; however, the stimuli were played in a continuous loop.

Static stimuli. To control for possible confounds from different faces, all of the images in the static condition were freeze-frames of the dynamic facial expressions at their climax. Therefore, each participant saw the same three models across dynamic or static conditions of emotion, in a randomized order.

Self-Assessment Manikin. The Self-Assessment Manikin (SAM) was developed to measure participant's perceptions of images on the constructs of arousal, dominance and pleasure (positiveness) (Bradley & Lang, 1994). The assessment includes three separate scales measuring arousal, pleasure, and dominance using a 9-point Likert scale. See Appendix A for examples of the SAM scale figures. The arousal construct is measured using a scale using excited/calm terminology that ranges from 1 (wide-eyed excited figure) to 9 (lethargic, calm figure). The pleasure measurement ranges from 1 (smiling face, positive) to 9 (frowning face, negative). Unlike the other two displays, the dominance measurement changes in size not in expression. The dominance measurement

ranges from 1 (small figure, submissive) to 9 (large figure, dominant). Each of these questions were presented in a random order. The SAM was accompanied by either the dynamic or static set of facial expressions (smile, scowl, neutral).

Social Perception Questions. Participants responded to four questions pertaining to social perceptions using a 7-point Likert scale: 1) "How displeasing or pleasing is the face in this image to look at", ranging from 1 (extremely displeasing) to 7 (extremely pleasing), 2) "How non-threatening or threatening is the face in the image", ranging from 1 (extremely non-threatening) to 7 (extremely threatening), 3) "How unattractive or attractive is the face in the image", ranging from 1 (extremely unattractive) to 7 (extremely attractive), and 4) "How dishonest or honest is the face in the image", ranging from 1 (extremely dishonest) to 7 (extremely honest). Each of these questions were presented in a random order. The social perception questions were accompanied by either the dynamic or the static set of facial expressions (smile, scowl, neutral)

Procedure

Participants began the study by answering several demographic questions pertaining to their age, ethnicity, and gender. Once complete, they were randomly assigned to either the dynamic or the static condition. Participants assigned to the dynamic condition were presented with all facial expressions of emotion as dynamic images. Participants assigned to the static condition were presented all facial expressions of emotions as static images.

Immediately following assignment to the dynamic or static condition, participants were presented with one facial expression (neutral, smiling, or scowling) that played for approximately two seconds. The participants were then instructed to answer the three

SAM questions (randomized), the four social perception questions (randomized) and the emotion identification question after viewing each stimulus for at least three seconds. The stimulus (dynamic or static) remained on screen while the participant answered each of the question blocks (e.g., SAM, social perception, emotion identification).

Design

Hypothesis 1: older adults will be more accurate in identifying facial expressions when viewing dynamic facial expressions than static facial expressions. Because of the nature of the data, a chi square test of independence was performed to investigate the relationship of emotion identification accuracy and stimulus type (between-subjects dynamic vs static).

Hypothesis 2: participants exposed to the dynamic stimuli would experience greater levels of the Halo Effect, with the greatest levels in the smiling facial expression condition. A mixed MANOVA, Stimulus Type (between-subjects variable; dynamic and static) x facial expression (within-subjects variable; angry, happy, and neutral) was used to investigate the relationship between the SAM measurements and each of the independent variables (IVs), and a mixed MANOVA was used to examine the relationship between the randomly presented social perception questions within each emotion.

CHAPTER IV

RESULTS

Hypothesis 1

Emotion Identification. It was hypothesized that older adults would be more accurate in identifying facial expressions when viewing dynamic facial expressions than static facial expressions. For the purposes of this study, the accurate responses included selecting angry for the scowling facial expressions (FE), happy for the smiling FE, and neutral for the neutral FE across dynamic and static conditions.

A Chi square analysis was conducted to compare accuracy ratings between stimulus types (between-subjects; dynamic vs static). Data were separated into correct and incorrect response sets across FE. A Bonferoni Correction was applied to all of the analyses, except the pairwise comparisons, creating a new $\alpha = .0028$. As a result, the difference between the dynamic and static response sets were statistically significant for the scowling, $X^2(1) = 10.40$, $p = .001$, and the smiling conditions, $X^2\ (1) = 18.94$, $p < .001$. In all conditions except the neutral condition, participants were more accurate in identifying the static FE than the dynamic FE. The results did not support the hypothesis, participants were more accurate when identifying the static facial expression for scowl and smile than their dynamic counter parts. See Table 1 for accuracy results.

Table 1

Facial Expression Accuracy Results from Static and Dynamic Groups (Stimulus Type)

FE	Dynamic Percent	Static Percent
Scowling	59	80
Smiling	78	98

Note. FE = Facial Expression

Table 1 Cont.

Facial Expression Accuracy Results from Static and Dynamic Groups (Stimulus Type)

FE	Dynamic Percent	Static Percent
Neutral	63	51

Note. FE = Facial Expression

Hypothesis 2

It was hypothesized that participants exposed to the dynamic stimuli would experience greater levels of the Halo Effect with the greatest levels in the smiling facial expression condition. In the analysis of Hypothesis 2, participants were screened on a case by case basis and only correct responses to the target emotion question were analyzed. For example, a participant that correctly identified the scowling FE as angry would only have the data from their angry condition used. If a participant correctly identified more target emotions, then the data associated with all correct responses was used.

SAM. To investigate the occurrence of the Halo Effect in an older population and the possible influence of Stimulus Type (static vs dynamic) on trait perception, two measures of traits were used. The first of these measures, the SAM, was analyzed using a 2 (between-subjects; dynamic vs. static) x 3 (within-subjects; scowl, smile, neutral facial expressions) mixed MANOVA with a Huynh-Feldt degrees of freedom (df) correction. As sphericity was only violated for the analysis of the positive/ negative scale, the df correction will only be applied to those results. A significant multivariate main effect of FE, $F(3, 64) = 58.78$, $p < .001$, $\eta^2 = .846$, was observed. However, neither a significant main effect of Stimulus Type $F(3, 67) = 1.28$, $p = .289$, $\eta^2 = .054$, nor an interaction of FE and Stimulus Type $F(6, 64) = .76$, $p = .601$, $\eta^2 = .067$, were observed. To further

counter for an inflated rate of Type I error a separate Bonferoni correction changed the α = .002. This correction was used for all the pairwise comparisons within the analysis of the SAM.

Positive/Negative. A significant main effect of FE was reported $F(1.48, 102.50) = 263.75$, $p < .001$, $\eta^2 = .793$. Pairwise comparisons showed a significant difference in positivity between the scowling and the smiling FEs (*MD* =5.93, *SD* = 2.80, $p < .001$); the scowling and neutral FEs (*MD* = 2.76, *SD* = 1.68, $p < .001$); and the neutral and smiling FEs (*MD* = 3.17, *SD* = 1.99, $p < .001$). Overall, participants rated the smiling FE as the most positive (M = 2.15, SD = 2.01) and the scowling as the most negative FE (*M* = 8.071, *SD* = 1.48). The main effect of Stimulus Type, $F(1, 69) = 1.46$, $p = .130$, $\eta^2 = .009$ and an interaction of FE and Stimulus Type, $F(1.49, 102.50) = 1.55$, $p = .221$, $\eta^2 = .022$, were not significant.

Subordinate/Dominance. A significant main effect of FE, $F(2, 138) = 23.11$, $p < .001$, $\eta^2 = .251$, was observed. Pairwise comparisons showed a significant difference in dominance between the scowling and smiling FE (*MD* = 1.59, *SD* = 2.06, $p < .001$) and the scowling and neutral FE (*MD* = 1.23, *SD* = 2.12, $p < .001$). Participants rated the Scowling FE as the most dominant (*M* = 7.07, *SD* = 1.63) and smiling as the most submissive (*M* = 5.49, *SD* = 1.60). Comparisons between smiling and neutral FE were not significant. Additionally, the main effect of Stimulus Type $F(1, 69) = .940$, $p = .336$, $\eta^2 = .013$, and the interaction between Stimulus Type and FE were not significant, $F(2, 138) = 1.18$, $p = .221$, $\eta^2 = .022$.

Excited/ Calm. A significant main effect of FE, $F(2, 138) = 36.00$, $p < .001$, $\eta^2 = .343$ was observed. Pairwise comparisons showed a significant difference between

neutral and scowling (*MD* = 2.66, *SD* = 2.44, $p < .001$), and neutral and smiling FE (*MD* = 1.82, *SD* = 2.70, $p < .001$). Participants rated the scowling FE as the most excited (*M* = 3.96, *SE* = 1.79) and the neutral FE as the calmest (*M* = 6.62, *SD* = 1.74). The differences between smiling and scowling were not significant. Stimulus Type, $F(1, 69) = 2.35$, $p = .130$, $\eta^2 = .033$, and the interaction between FE and Stimuli Type, $F(2, 138) = .051$, $p = .95$, $\eta^2 = .001$, were also not significant.

Exploratory Analysis

Social Perception. To overcome violations of normality as assessed by Shapiro-Wilk's test of normality ($p < .001$), the combination of the four social perception dependent variables into one social perception variable was explored. In order to determine the relationship between these variables, the combined SP scores were calculated by reverse scoring the threat variable, combining the attractive, honest, and pleasing scores across FE, and then averaging the combined variables. For example, the combined attractiveness score was created by summing perceptions of attractiveness on the scowling, smiling, and neutral facial expressions and then averaging the summed score (see Table 2). A Pearson correlation between each individual variable and between each variable and the combined variable of social perception was conducted.

Table 2

Combined Correlations[a]

	Attractiveness	Threat	Honesty	Pleasure	Combined SP Score[b]
Attractiveness	1				
Threat	.255*	1			
Honesty	.448*	.131	1		
Pleasure	.731*	.191	.444*	1	
Combined SP Score[b]	.842*	.573*	.683*	.798*	1

*Indicates a significant difference at α =.002
[a] All social perception dependent variables were combined across facial expressions.
[b] Attractiveness, honesty, pleasure, and threat combined.

Results from the Pearson correlations report significant positive relationships between nearly all of the combined social perception scores. However, the threat measure did not yield a significant relationship between honesty, $r(139) = .131$, $p = .28$, nor pleasure, $r(139) = .191$, $p = .11$. Based on these exploratory results, the social perception variables were recoded into two variables; 1) combined social perception (attractiveness, honesty, and pleasing to look at) and 2) threat.

A mixed 2 (dynamic vs. static) x 3 (scowl, smile, neutral facial expressions) MANOVA with a Huynh-Feldt degrees of freedom (df) correction was used to investigate the relationship between the combined social perception (SP) variable, the threat variable, stimulus type, and facial expressions. However, because the combined SP variable was the only one to violate sphericity, the df correction was only applied to that analysis. To adjust for increased chances of Type I error, a Bonferoni correction for all pairwise comparisons was utilized to create a new α = .006. The results indicate a significant main effect of FE, $F(4, 66) = 100.74$, $p < .001$, $\eta^2 = .859$ and an interaction between FE and Stimulus Type, $F(2, 138) = 7.31$, $p = .001$, $\eta^2 = .096$. A significant main effect of Stimulus Type, $F(2, 68) = 1.60$, $p = .21$, $\eta^2 = .045$, was not observed.

Combined Social Perception (attractiveness, honesty, and pleasing to look at). A significant main effect of FE was observed, $F(1.69, 130.27) = 205.19$, $p < .001$, $\eta^2 = .75$. Pairwise comparisons indicated that smiling was perceived as more positive than scowling (*MD* = 2.12, *SD* = 1.03, $p < .001$), and neutral was perceived as more positive than scowling FE (*MD* = 1.05, *SD* = 1.03, $p < .001$). Additionally, smiling was perceived

as more positive than neutral FE (*MD* = 1.07, *SD* = .66, *p* < .001). The main effect of Stimulus Type, *F*(1, 69) = .031, *p* = .861, η^2 = .000, and interaction of FE and Stimulus Type, *F*(1.69, 116.64) = 1.63, *p* = .204, η^2 = .023, were not significant.

Threat. Results indicate a significant main effect of FE, *F*(2, 138) = 194.67, *p* < .001, η^2 = .738. Smiling was rated as less threatening than scowling (*MD* = 3.03, *SD* = 1.52, *p* < .001), neutral was rated as less threatening than scowling (*MD* =1.66, *SD* = 1.16, p < .001) and more threatening than smiling (*MD* = 1.369, *SD* = 1.28, p < .001)

The interaction of FE and Stimulus Type was significant, *F*(2, 138) = 7.32, *p* = .001, η^2 = .096. As can be seen in Table 3, static smiling was perceived as less threatening than static and dynamic scowling (p < .001) and less threatening than static neutral. Whereas, dynamic smiling was less threatening than dynamic and static scowling, and dynamic and static neutral FE. Additionally, static neutral was less threatening than dynamic and static scowling. Participants therefore rated the static smiling FE as the least threatening (M =6.47, SD = 1.32) and the static scowling FE as the most threatening (*M* = 2.82, *SD* = 1.37, *p* < .001). The main effect of Stimulus Type, *F*(1, 69) = 3.19, *p* = .078, η^2 = .044, was not significant.

Table 3

Comparison of Threat Scores, Mean(SD)

	Dynamic	Static
Smile	5.53(1.45)[b,c]	6.45(1.37) [a,b,c]
Neutral	4.56(1.30)	4.67(1.18) [d]
Scowl	3.094(1.51)	2.82(1.37) [d]

[a] Indicates sig. difference between dynamic and static facial expression (*p* < .05)

[b] Indicates sig. difference between smile and neutral facial expression ($p < .05$)

[c] Indicates sig. difference between smile and scowl facial expression ($p < .05$)

[d] Indicates sig. difference between scowl and neutral facial expression ($p < .05$)

The SAM and social perception results indicate significant differences across the FE on all of the individual measures (positive/negative, subordinate/dominant, excited/calm, threat, and combined Social Perception score). Pairwise comparisons indicate significant differences between all facial expressions and, as a part of the interaction, between Stimulus Types. However, because the reported differences suggest more positive trait attributions for static conditions, Hypothesis 2 was not supported.

CHAPTER V

DISCUSSION

Hypothesis 1

The current research expands on scientific understandings of perceptions made from dynamic stimuli and the Halo Effect in select older adult populations. Although previous literature has shown morphing stimuli to be effective in creating a dynamic advantage in emotion identification (Holland, Ebner, Lin, & Samanez-Larkin, 2018), a dynamic advantage was not observed for any of the facial expressions in the current study. The absence of a dynamic advantage may be due to the morphing stimuli that were used as dynamic stimuli in the current study and suggests that a dynamic advantage may not exist for older adults making perceptions from morphing stimuli. In a similar study, Fiorentini and Viviani (2011) use similar morphing stimuli and failed to observe a dynamic advantage. The lack of dynamic advantage may be due to the artificialness of the stimuli's transition from neutral to the target facial expression. Alternatively, because of the length of the morphing stimuli's transition, participants may have decided on an emotion before the stimuli completely transitioned (Willis & Todorov, 2006). Previous research has reported that accurate emotion identification can occur at a minimum of 250 MS and the current studies morphing stimuli transition over two seconds (Martinez et al., 2016). Therefore, participants may have seen the neutral facial expression and identified the emotion before the stimuli fully transitioned to the target emotion. It could be then that the perceptions made from such stimuli are contingent upon a measure of artificialness or the amount of time the starting expression is visible.

Hypothesis 2

Similar to previous literature, the Halo Effect was observed across smiling facial expression regardless of stimulus type. Participants attributed the highest ratings of positivity and the lowest in dominance to the smiling facial expression compared to the scowling and neutral facial expressions. This finding is not surprising given that previous literature has discussed submissiveness as the more positive of the measures (Bradley & Lang, 1994). Additionally, participants rated the smiling facial expression as the most positive via the combined Social Perception score. Interestingly, participants reported that the dynamic scowling facial expression was the most aroused of the three facial expressions via the excited/calm scale. According to Thorndike (1920), excitement is considered a positive measure within the Halo Effect. This is another finding that has not previously been observed in literature and is quite curious. Examples of excitement often involve some kind of motion (i.e., a child jumping up and down) and because the dynamic stimuli utilize motion, it is possible that perception of excitement may have been influenced by said motion. According to Ekman and Friesen (1978), a sincere smile utilizes the movement of four muscle groups or action units (AUs) while scowling FE require the movement of five AUs. It may be possible that participants observed greater levels of movement in a transition from a neutral to a scowling rather than the transition from a neutral to smiling facial expression and rated the scowling facial expression as more excited. As trait perception from dynamic stimuli is a limited field of work, there does not appear to be any previous literature that utilizes both dynamic stimuli and the trait measure excitement. Therefore, while fascinating, the lack of literature in this area makes it difficult to interpret these results (Knutson, 1996; Zebrowitz, Hall, Murphy, &

Rhodes, 2002; Montepare & Dobish, 2003; Willis & Todorov, 2006; Todorov, Baron, & Oosterhof, 2008; Todorov, Pakrashi, & Oosterhof, 2009; Senft, Chentsova-Dutton, & Patten, 2016).

The results of this study lend further support to the pervasiveness of the Halo Effect, even in older adult populations. While the hypothesis was not supported, with regard to the dynamic advantage in emotion recognition and perception of positive traits, the results of this study lend further support to the pervasiveness of the Halo Effect in an older adult population.

Limitations and Future Research

This study reports several findings that may be due to violations of normality. However, previous literature has shown to MANOVAs to be robust against violations of normality (Ito, 1980). Because of this, the researcher is confident that this violation did not affect the interpretability of the results.

Several limitations pertain to the design elements of the study. One such element is the kind of dynamic stimulus used. As previously cited research suggests, a dynamic advantage may not be possible because of morphing stimuli compared to short videos of actors changing facial expressions. Future research should direct efforts to examine the differences between classically used dynamic stimuli (e.g., short videos of actors changing facial expressions) and modern morphing stimuli's accuracy of perceptions (e.g., emotion identification, trait perceptions) and perceived artificialness of stimuli.

Alternatively, the use of a repeated measures design may have limited the findings of the study through carryover effects. Throughout the procedures, participants were exposed to nine stimuli over a short duration of time. As such, it is possible that

perceptions made about a previous facial expression were carried over into the perception of the next stimulus. To reduce the likelihood of carryover effects occurring, future research should remove the repeated measures aspect of the design thereby only exposing participants to the same expression throughout their proceedings.

Additionally, this study focused on comparing static and dynamic presentations of older adult male facial expressions using only an older adult population, while previous literature has also compared older adults and other age groups to one another (Zebrowitz & Franklin, 2014; Sze, Goodkind, Gyurak, & Levenson, 2012; Holland, Ebner, Lin, & Samanez-Larkin, 2018). As such, future research should also include a younger adult sample and both gendered stimuli to compare any differences in emotion identification accuracy that may be found between age groups and genders.

An additional limitation was the use of an online MTurk sample, which reduced the generalizability of the results. It would appear that the majority of the collected sample was white, female, and frequently participated in surveys on MTurk. As a result, these results may only represent a very narrow portion of the US population. Similar research that incorporated broader age, gender, and more ethnically diverse sample reported a significant dynamic advantage (Sze, Goodkind, Gyurak, & Levenson, 2012). To determine if demographics other than age (i.e., gender, ethnicity, Socio-economic status) contributed to a dynamic or static advantage in emotion identification, future research should focus on a more representative sample, one that more broadly represents the target population with regard to gender, ethnicity, socio-economic status and education.

Conclusion

Overall, it would appear that the type of dynamic stimulus used may influence perceptions. Contrary to Hypothesis 1, when shown dynamic morphing stimuli and static stimuli, older adults appear to be better at identifying emotions from the static stimuli. Specifically, older adults were the most accurate at identifying static smiling FE or a happy emotion, and the least accurate when identifying neutral FE or neutral emotion. Hypothesis 2 was also not supported as dynamic stimuli do not appear to influence the Halo Effect. Older adults rated both dynamic and static stimuli with high levels of positive traits without consistent significant differences between dynamic and static conditions across trait measures (i.e., SAM, Social Perception). Older adults also attribute dynamic scowling stimuli as the most excited of the conditions.

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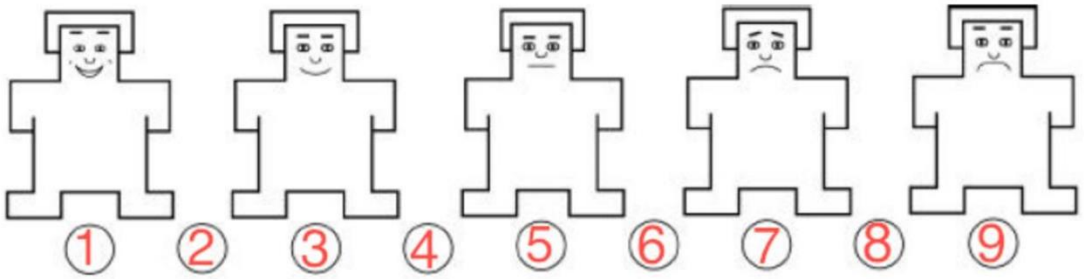
APPENDIX A

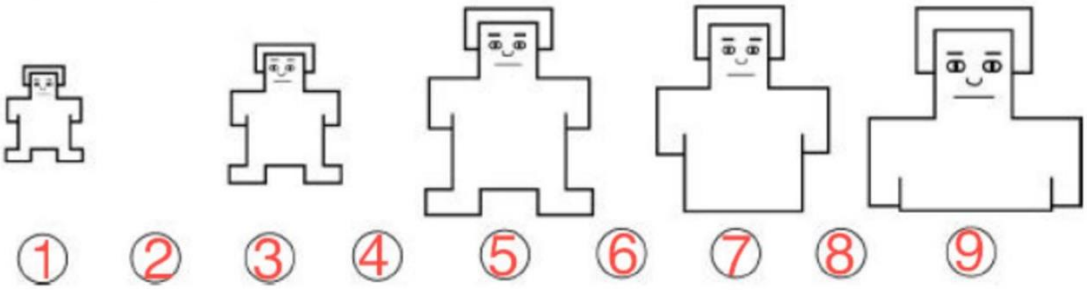
Self-Assessment Manikin Scales

SAM Pleasure Scale



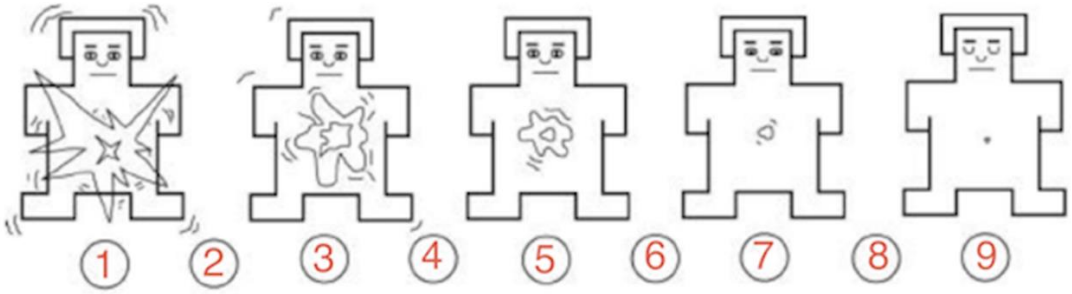
Using the numbers that correspond to the faces above, indicate how positive (1) or negative (9) this person is by selecting 1 through 9 below.

SAM Dominance Scale



Using the numbers that correspond to the faces above, indicate how subordinate (1) or dominant (9) the person is by selecting 1 through 9 below.

SAM Arousal Scale



APPENDIX B
Questionnaire

A Book and its Cover 1189

Start of Block: Informed Consent

IC

Welcome and on behalf of the research team thank you for participating in this study!

What you should know about this study:

· You are being asked to join a research study.
· This information page explains the research study and your part in the study.
· Please read it carefully and take as much time as you need.
· For the purposes of this study your IP addresses will be collected to ensure that no one participates more than once. These IP addresses will not be used for any other purposes.
· You are a volunteer. If you do join the study and change your mind later, you may quit at any time without fear of penalty or loss of benefits.

Why is this research being done?

This research is being done to determine if the type of information presented affects the activation of stereotypes derived from facial expressions of emotion.

What will happen if you join this study?

You will be asked to view several facial expressions and answer several questions about the facial expression. These questions will pertain to specific inferences you have made from viewing the facial expression, and which emotion is being presented.

What are the risks or discomforts of the study?

There are no anticipated risks or discomforts associated with this study.

Are there benefits to being in the study?

There are no anticipated direct benefits from participation in this study. However, anticipated indirect benefits include advancing scientists' understanding of emotion recognition and stereotypes. Specifically, this research will provide more insight into how emotion recognition and stereotype processes change with age.

What are your options if you do not want to be in the study or leave the study early?

You do not have to join this study. You can agree to be in the study now and change your mind later. If you wish to stop at any time, you may do so by exiting the study. Leaving this study early will not affect your level of financial compensation.

What information about you will be kept private and what information may be given out?

For the purposes of this study personal identifiers such as name, IP addresses, or email address will not be kept. Any and all information that is collected through the study will be kept confidential in a secure password protected survey site. Only the principal investigator, Jonathan Ojeda and the faculty mentor, Dr. Mary Radeke, will have access to this data. None of your personal information (name or email address) will be linked to your responses on this study.

What else should you know about the study?

This study has been reviewed by the Central Washington University Human Subject Review Council. (HSRC) is made up of faculty from many different departments, ethicists, nurses, scientists, non-scientists and people from the local community. The HSRC's purpose is to review human research studies and to protect the rights and welfare of the people participating in those studies. You may contact the HSRC if you have questions about your rights as a participant or if you think you have not been treated fairly. The HSRC office number is (509) 963-3115.

If you have any questions pertaining to this study please contact the principal investigator, Jonathan Ojeda at ojedaj@cwu.edu, or the faculty mentor, Dr. Mary Radeke at radekem@cwu.edu.

If you understand the information above and would still like to participate in the study please click "agree". If you do not want to participate please click "disagree" and you will be taken to the end of the questionnaire.

- ○ Agree (1)
- ○ Disagree (2)

End of Block: Informed Consent

Start of Block: Demographics

Gen What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Other (3)
- ○ I choose not to answer (4)

Display This Question:

If Gen = Other

GenO Please specify what gender you are

_____

AGE2 What is your age?

- ○ 55-60 (1)
- ○ 61-65 (2)
- ○ 66-70 (3)
- ○ 70-75 (4)
- ○ 76-80 (5)
- ○ 81-85 (6)
- ○ 85+ (7)

Education What is your level of education

- ○ High School Diploma (1)
- ○ GED (2)
- ○ Some College (3)
- ○ Bachelors Degree (4)
- ○ Masters Degree (5)
- ○ PhD/MD (6)
- ○ Other Professional Degree (7)

Display This Question:

If Education = PhD/MD

Other ED Please specify what other degree you hold.

_____

Race What race are you?

- ○ Black or African American (1)
- ○ White (not Hispanic or Latino) (2)
- ○ Asian (3)
- ○ Latino or Hispanic (4)
- ○ American Indian, Alaska Native, or Canadian first peoples (5)
- ○ Native Hawaiian or Other Pacific Islander (6)
- ○ I choose not to answer (7)
- ○ Other (8)

Display This Question:

If Race = American Indian, Alaska Native, or Canadian first peoples

RaceO Please specify what race you are.

_____

Q76 What is your marital status?

- ○ Married (1)
- ○ Widowed (2)
- ○ Divorced (3)
- ○ Separated (4)
- ○ Never married (5)

Q77 On average, how many surveys do you take on Mturk a week?

- 0 (1)
- 1-3 (2)
- 4-6 (3)
- 6-9 (4)
- 10+ (5)

End of Block: Demographics

Start of Block: Dynamic Images (Social Perception) A

StimDA
Please review the image for three seconds before moving on to the first question.

DASPA How unattractive or attractive is the face in the image?

- Extremely Unattractive (1)
- Very Unattractive (2)
- Unattractive (3)
- Neutral (4)
- Attractive (5)
- Very Attractive (6)
- Extremely Attractive (7)

DASPT How non-threatening or threatening is the face in the image?

- ○ Extremely Non-threatening (1)
- ○ Very Non-threatening (2)
- ○ Non-threatening (3)
- ○ Neutral (4)
- ○ Threatening (5)
- ○ Very Threatening (6)
- ○ Extremely Threatening (7)

DASPH How dishonest or honest is the face in the image?

- ○ Extremely Dishonest (1)
- ○ Very Dishonest (2)
- ○ Dishonest (3)
- ○ Neutral (4)
- ○ Honest (5)
- ○ Very Honest (6)
- ○ Extremely Honest (7)

DASPP How displeasing or pleasing is the face in the image to look at?

- Extremely Displeasing (1)
- Very Displeasing (2)
- Displeasing (3)
- Neutral (4)
- Pleasing (5)
- Very Pleasing (6)
- Extremely Pleasing (7)

End of Block: Dynamic Images (Social Perception) A

Start of Block: Dynamic Image (Emotion) A

EI
What emotion does the image display?

- Angry (1)
- Disgust (2)
- Fear (3)
- Happy (4)
- Neutral (5)
- Sad (6)
- Surprise (7)

End of Block: Dynamic Image (Emotion) A

Start of Block: Dynamic Image (SAM) A

DASAMP/E

Using the numbers that correspond to the faces above, indicate how positive (1) or negative (9) this person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

DASAMS/D

Using the numbers that correspond to the faces above, indicate how subordinate (1) or dominant (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

DASAME/C

Using the numbers that correspond to the faces above, indicate how excited (1) or calm (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

End of Block: Dynamic Image (SAM) A

Start of Block: Dynamic Images (Social Perception) H

StimDH
Please review the image for three seconds before moving on.

DHSPA How unattractive or attractive is the face in the image?

- ○ Extremely Unattractive (1)
- ○ Very Unattractive (2)
- ○ Unattractive (3)
- ○ Neutral (4)
- ○ Attractive (5)
- ○ Very Attractive (6)
- ○ Extremely Attractive (7)

DHSPT How non-threatening or threatening is the face in the image?

- ○ Extremely Non-threatening (1)
- ○ Very Non-threatening (2)
- ○ Non-threatening (3)
- ○ Neutral (4)
- ○ Threatening (5)
- ○ Very Threatening (6)
- ○ Extremely Threatening (7)

DHSPH How dishonest or honest is the face in the image?

- ○ Extremely Dishonest (1)
- ○ Very Dishonest (2)
- ○ Dishonest (3)
- ○ Neutral (4)
- ○ Honest (5)
- ○ Very Honest (6)
- ○ Extremely Honest (7)

DHSPP How displeasing or pleasing is the face in the image to look at?

- ○ Extremely Displeasing (1)
- ○ Very Displeasing (2)
- ○ Displeasing (3)
- ○ Neutral (4)
- ○ Pleasing (5)
- ○ Very Pleasing (6)
- ○ Extremely Pleasing (7)

End of Block: Dynamic Images (Social Perception) H

Start of Block: Dynamic Image (Emotion) H

DEH
What emotion does the image display?

- ○ Angry (1)
- ○ Disgust (2)
- ○ Fear (3)
- ○ Happy (4)
- ○ Neutral (5)
- ○ Sad (6)
- ○ Surprise (7)

End of Block: Dynamic Image (Emotion) H

Start of Block: Dynamic Image (SAM) H

DHSAMP/N

Using the numbers that correspond to the faces above, indicate how positive (1) or negative (9) this person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

DHSAMS/D

Using the numbers that correspond to the faces above, indicate how subordinate (1) or dominant (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

DHSAME/C

Using the numbers that correspond to the faces above, indicate how excited (1) or calm (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

End of Block: Dynamic Image (SAM) H

Start of Block: Dynamic Images (Social Perception) N

Q31

Please review the image for three seconds before moving on to the first question.

Q32 How unattractive or attractive is the face in the image?

- Extremely Unattractive (1)
- Very Unattractive (2)
- Unattractive (3)
- Neutral (4)
- Attractive (5)
- Very Attractive (6)
- Extremely Attractive (7)

Q33 How non-threatening or threatening is the face in the image?

- Extremely Non-threatening (1)
- Very Non-threatening (2)
- Non-threatening (3)
- Neutral (4)
- Threatening (5)
- Very Threatening (6)
- Extremely Threatening (7)

Q34 How dishonest or honest is the face in the image?

- Extremely Dishonest (1)
- Very Dishonest (2)
- Dishonest (3)
- Neutral (4)
- Honest (5)
- Very Honest (6)
- Extremely Honest (7)

Q35 How displeasing or pleasing is the face in the image to look at?

- Extremely Displeasing (1)
- Very Displeasing (2)
- Displeasing (3)
- Neutral (4)
- Pleasing (5)
- Very Pleasing (6)
- Extremely Pleasing (7)

End of Block: Dynamic Images (Social Perception) N

Start of Block: Dynamic Image (Emotion) N

Q71
What emotion does the image display?

- ○ Angry (1)
- ○ Disgust (2)
- ○ Fear (3)
- ○ Happy (4)
- ○ Neutral (5)
- ○ Sad (6)
- ○ Surprise (7)

End of Block: Dynamic Image (Emotion) N

Start of Block: Dynamic Image (SAM) N

DNSAMP/N

Using the numbers that correspond to the faces above, indicate how positive (1) or negative (9) this person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

DNSAMS/D

Using the numbers that correspond to the faces above, indicate how subordinate (1) or dominant (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

DNSAME/C

Using the numbers that correspond to the faces above, indicate how excited (1) or calm (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

End of Block: Dynamic Image (SAM) N

Start of Block: Static Images (Social perception) A

StimSA

Please review the image for three seconds before moving on to the first question.

SSPAA How unattractive or attractive is the face in the image?

- ○ Extremely Unattractive (1)
- ○ Very Unattractive (2)
- ○ Unattractive (3)
- ○ Neutral (4)
- ○ Attractive (5)
- ○ Very Attractive (6)
- ○ Extremely Attractive (7)

SSPTA How non-threatening or threatening is the face in the image?

- ○ Extremely Non-threatening (1)
- ○ Very Non-threatening (2)
- ○ Non-threatening (3)
- ○ Neutral (4)
- ○ Threatening (5)
- ○ Very Threatening (6)
- ○ Extremely Threatening (7)

SSPHA How dishonest or honest is the face in the image?

- ○ Extremely Dishonest (1)
- ○ Very Dishonest (2)
- ○ Dishonest (3)
- ○ Neutral (4)
- ○ Honest (5)
- ○ Very Honest (6)
- ○ Extremely Honest (7)

SSPPA How displeasing or pleasing is the face in the image to look at?

- ○ Extremely Displeasing (1)
- ○ Very Displeasing (2)
- ○ Displeasing (3)
- ○ Neutral (4)
- ○ Pleasing (5)
- ○ Very Pleasing (6)
- ○ Extremely Pleasing (7)

End of Block: Static Images (Social perception) A

Start of Block: Static Image (Emotion) A

Q22

What emotion does the image display?

- ○ Angry (1)
- ○ Disgust (2)
- ○ Fear (3)
- ○ Happy (4)
- ○ Neutral (5)
- ○ Sad (6)
- ○ Surprise (7)

End of Block: Static Image (Emotion) A

Start of Block: Static Image (SAM) A

SASAMP/N

Using the numbers that correspond to the faces above, indicate how positive (1) or negative (9) this person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

SASAMS/D

Using the numbers that correspond to the faces above, indicate how subordinate (1) or dominant (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

SASAME/C

Using the numbers that correspond to the faces above, indicate how excited (1) or calm (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

End of Block: Static Image (SAM) A

Start of Block: Static Images (social perception) H

Q51

Please review the image for three seconds before moving on to the first question.

Q52 How unattractive or attractive is the face in the image?

- Extremely Unattractive (1)
- Very Unattractive (2)
- Unattractive (3)
- Neutral (4)
- Attractive (5)
- Very Attractive (6)
- Extremely Attractive (7)

Q53 How non-threatening or threatening is the face in the image?

- Extremely Non-threatening (1)
- Very Non-threatening (2)
- Non-threatening (3)
- Neutral (4)
- Threatening (5)
- Very Threatening (6)
- Extremely Threatening (7)

Q54 How dishonest or honest is the face in the image?

- Extremely Dishonest (1)
- Very Dishonest (2)
- Dishonest (3)
- Neutral (4)
- Honest (5)
- Very Honest (6)
- Extremely Honest (7)

Q55 How displeasing or pleasing is the face in the image to look at?

- Extremely Displeasing (1)
- Very Displeasing (2)
- Displeasing (3)
- Neutral (4)
- Pleasing (5)
- Very Pleasing (6)
- Extremely Pleasing (7)

End of Block: Static Images (social perception) H

Start of Block: Static Image (Emotion) H

Q61

What emotion does the image display?

- ○ Angry (1)
- ○ Disgust (2)
- ○ Fear (3)
- ○ Happy (4)
- ○ Neutral (5)
- ○ Sad (6)
- ○ Surprise (7)

End of Block: Static Image (Emotion) H

Start of Block: Static Image (SAM) H

SHSAMP/N

Using the numbers that correspond to the faces above, indicate how positive (1) or negative (9) this person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

SHSAMS/D

Using the numbers that correspond to the faces above, indicate how subordinate (1) or dominant (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

SHSAME/C

Using the numbers that correspond to the faces above, indicate how excited (1) or calm (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

End of Block: Static Image (SAM) H

Start of Block: Static Images (social perception) N

Q56

Please review the image for three seconds before moving on to the first question.

Q57 How unattractive or attractive is the face in the image?

- Extremely Unattractive (1)
- Very Unattractive (2)
- Unattractive (3)
- Neutral (4)
- Attractive (5)
- Very Attractive (6)
- Extremely Attractive (7)

Q58 How non-threatening or threatening is the face in the image?

- Extremely Non-threatening (1)
- Very Non-threatening (2)
- Non-threatening (3)
- Neutral (4)
- Threatening (5)
- Very Threatening (6)
- Extremely Threatening (7)

Q59 How dishonest or honest is the face in the image?

- Extremely Dishonest (1)
- Very Dishonest (2)
- Dishonest (3)
- Neutral (4)
- Honest (5)
- Very Honest (6)
- Extremely Honest (7)

Q60 How displeasing or pleasing is the face in the image to look at?

- Extremely Displeasing (1)
- Very Displeasing (2)
- Displeasing (3)
- Neutral (4)
- Pleasing (5)
- Very Pleasing (6)
- Extremely Pleasing (7)

End of Block: Static Images (social perception) N

Start of Block: Static Image (Emotion) N

Q50

What emotion does the image display?

- ○ Angry (1)
- ○ Disgust (2)
- ○ Fear (3)
- ○ Happy (4)
- ○ Neutral (5)
- ○ Sad (6)
- ○ Surprise (7)

End of Block: Static Image (Emotion) N

Start of Block: Static Image (SAM) N

SNSAMP/N

Using the numbers that correspond to the faces above, indicate how positive (1) or negative (9) this person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

SNSAMS/D

Using the numbers that correspond to the faces above, indicate how subordinate (1) or dominant (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

Page Break

SNSAME/C

Using the numbers that correspond to the faces above, indicate how excited (1) or calm (9) the person is by selecting 1 through 9 below.

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)

End of Block: Static Image (SAM) N

Start of Block: Debriefing

DEBREIF

Thank you for completing this study. This study is part of an ongoing effort to further investigate how human beings recognize emotion. As such, the primary aim of this study is to investigate if moving images provide additional information to increase emotion recognition. Additionally, the effect attractiveness may have on emotion recognition is also of interest.

If you have any questions regarding the study or your involvement please feel free to contact Jonathan Ojeda at ojedaj@cwu.edu, or the faculty mentor, Dr. Mary Radeke at radekem@cwu.edu.

For your privacy please completely close your browser after reading this message. Thank you again for your participation.

On the next page you will be given a survey code. Please cut and paste the survey code to MTurk for payment.

End of Block: Debriefing