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"…BLESS HER LITTLE HEART!"

THE CULTURE OF HONOR AND EMOTION RECOGNITION

by

FORREST RACKHAM

(Under the Direction of Amy Hackney)

ABSTRACT

Some researchers assert that cultural display rules may explain differences in perceiving emotions (Matsumoto, Yoo, & Chung, 2010). The current study examined the display rule of masking within the Southern culture of honor. It was hypothesized that masking within the culture of honor negatively affects emotion perception sensitivity, particularly in the speed and accuracy of recognizing anger. Southern undergraduate students were primed with the culture of honor and then presented with the Emotional Expression Multimorph Task. Participants chose one of the six emotions (i.e., sad, happy, surprise, fear, disgust, or anger). It was hypothesized participants in the masking and masking/culture of honor prime groups would take significantly longer recognizing emotions than the mimicking/culture of honor prime and mimicking (control) groups. Results indicated an effect of masking on emotion perception, $F(1, 77) = 4.16$, $p = .04$, partial $\eta^2 = .05$, supporting the hypothesis that participants who mask would take significantly longer than the participants who do not mask to correctly identify emotions. The main effect of the culture of honor prime was not significant. Participants were

significantly slower at perceiving anger when compared to happiness and surprise. This study further substantiates masking as a display rule and its effects on facial feedback. It was not determined that the culture of honor affects emotion recognition through the mechanism of masking. Future research studies could use more ecologically generalizable variables to determine if masking occurs within the culture of honor.

INDEX WORDS: emotion recognition, emotion perception, culture of honor, masking, display rules, Southern

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"…BLESS HER LITTLE HEART!"

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FORREST RACKHAM

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DEDICATION

This dissertation is dedicated first and foremost to my wife, Sonya Rackham, who has had to sacrifice many long years in order for her husband to complete his schooling and provide for his family. She has given many years of desktop dinners, experienced many companionless nights, and travelled countless miles on vacation by herself and the children in order for me to complete my schooling. I cannot begin to thank her enough. My world would not be complete without my children, Ivory Virginia, Locke Mitchell Ahmed, and Gemma Margaret. They bring joy and happiness to my life. This is also dedicated to my parents, Kevin and Karen Rackham, and brother and sisters who continue to believe in me and love me.

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CHAPTER I

INTRODUCTION

Statement of the Problem

Emotions are experienced in almost all situations. Emotions shape the canvas of life and personal experience. Among the varieties and hues of emotion, there are some basic emotions that are universal (Ekman, 1989; Ekman & Friesen, 1971; Matsumoto, 1992). These emotions—happiness, anger, sadness, surprise, disgust, fear, and contempt (Ekman, 1992; Ekman, 1999; Ekman, 2003; Levenson, Ekman, Heider, & Friesen, 1992)—influence other people (Blairy et al., 1999; Hess & Blairy, 2001; Lundqvist & Dimberg, 1995; Wicker et al., 2003; Wild, Erb, & Bartels, 2001). They help people know whether to approach or avoid other people (Adams, Ambady, Macrae & Kleck, 2006; Ekman, 2003; Marsh, Ambady, & Kleck, 2005). For example, sadness can engender sympathy from others (Ekman, 2003, pp. 88) and fear can engender fear and/or anger in others and signal danger (Adolphs, Russel, & Tranel, 1999; Ekman, 2003; Morris et al., 1996).

Anger also appears to signal different messages and engenders different emotions in people (Ekman, 2003). Anger can engender anger or fear (Adolphs, Russel, & Tranel, 1999; Ekman, 2003; Morris et al., 1996) and can signal possible violence (Ekman, 2003). In fact, anger has been predictive of domestic violence (Cascardi, Vivian, & Meyer, 1991; Dobash & Dobash, 1984), child abuse (Kolko, 1996; Peterson, Ewigman, & Vandiver, 1994; Rodriguez & Green, 1997), road rage and automobile accidents

(Deffenbacher, Huff, Lynch, Oetting, & Salvatore, 2000; Deffenbacher, Lynch, Filetti, Dahlen, Oetting, 2003) and murder (Nisbett & Cohen, 1996; U.S. Department of Justice, 2009).

With anger being predictive of possible legal and physical ramifications it is especially important to recognize this emotion in others (Cohen, Vandello, Puente, & Rantilla, 1999). The problem is that some societies or cultures encourage its members to display other emotions rather than their felt emotion of anger (Diefendorff & Greguras, 2008; Diefendorff, Moreheart, & Gabriel, 2010; Kraut & Johnston, 1979; Matsumoto, 2006; Underwood, Coie, & Herbsman, 1992; Zaalberg, Manstead, & Fischer, 2004). This is an example of a phenomenon known as masking, the process of controlling one's own emotions to convey socially appropriate messages. The consequence of masking is that it may make it more difficult for others to recognize another person's expressed emotion (Diefendorff & Greguras, 2008; Diefendorff, Moreheart, & Gabriel, 2010; Kraut & Johnston, 1979; Matsumoto, 2006; Underwood et al., 1992; Zaalberg et al., 2004). And, if a person has difficulty recognizing another person's expressed emotion such as anger, fear, or disgust, it becomes more difficult for an individual to disrupt displays of anger from escalating into violence—and possibly death.

A culture of honor (Nisbett & Cohen, 1996) is one such culture that encourages the expression of politeness to protect against possible violence and retaliation (Cohen, Vandello, Puente, & Rantilla, 1999). Yet cultures which espouse honor report more occurrences of violence and homicide than other cultures (Brown, Osterman, & Barnes, 2009; Cohen, 1998; Cohen, 2009; Cohen & Nisbett, 1994; Harinck, Beersma, Hoorne, & Ghauharali, 2008; IJzerman, van Dijk, & Gallucci, 2003; Nisbett & Cohen, 1996;

Rodriguez Mosquera, Manstead, & Fischer, 2002; Shackelford, 2005; Vandello & Cohen, 2003; Vandello, Cohen, & Ransom, 2008). Research has found that when compared to people outside the culture of honor, people within the culture of honor have difficulty and are slower at recognizing anger and aggressive cues from other in-group members (Cohen et al., 1999). Masking may be the mechanism that diminishes the ability to correctly recognize and identify anger, fear, or disgust for those who are in the culture of honor.

Purpose of the Study

The goal of this study is to examine experimentally induced masking within the context of the culture of honor and its effect upon the speed and accuracy of correctly identifying another person's emotion. In other words we will be exploring how masking and the culture of honor affects an individual's ability to correctly identify six basic emotions, or a person's perception sensitivity.

CHAPTER II

LITERATURE REVIEW

Evolutionary and Biological Basis to Emotion

Many researchers argue for the universality of emotions (Ekman, 1989; Ekman & Friesen, 1971; Matsumoto, 1992), emphasizing that evolution has helped create similar emotional palettes across the cultural landscapes. Other researchers, though, do not agree upon the universality of these emotions, calling into question theory (Ortony & Turner, 1990), methodology (Russell, 1994), and how emotion is expressed across cultures (Russell, 1995). Regardless, most researchers agree upon six to seven basic emotions shared by all cultures: happiness, anger, sadness, surprise, disgust, fear, and contempt (Ekman, 1992; Ekman, 1999; Ekman, 2003; Levenson, Ekman, Heider, & Friesen, 1992). Despite agreement, some researchers argue that surprise cannot be classified as an emotion (Shaver, Schwartz, Kirson, & O'Connor, 1987). However, Ekman (2003) argues that surprise can be pleasurable and unpleasurable, dependent on context and individual preference, and displays distinct characteristics, qualities shared by other emotions. Other research indicates that additional emotions such as pride (Lewis, 2000; Tracy & Robins, 2007; Tracy & Robins, 2008) and shame (Dougherty, Bartlett, & Izard, 1974; Keltner, 1995; Lewis, 2000) should be included in the universal palette.

Differences and suggested inclusions aside, emotions are theorized to be evolutionary (Ekman, 1992; Izard, 1994; Matsumoto & Willingham, 2009) and have evolved to allow us to adapt to our environmental surroundings (Izard, 2007). As early as

Darwin (Darwin, 1872; 1998), it was theorized that the environment requires a response from the organism and that emotions help to fill that response (Ekman, 2003). Emotions have developed into complex systems comprised of behaviors and thoughts (Elliot & Greenber, 2007; Greenberg, 2004; Levenson et al., 1992; Rosenberg et al., 2001), and physiological and experiential components (Elliot & Greenberg, 2007; Greenberg, 2004; Gross & Levenson, 1993, 1997; Levenson et al., 1992) to serve as warning mechanisms in cases of danger and assist the organism in mate selection. Additionally, emotions have been found to be necessary for physiological regulation (Gottman & Declaire, 1997) and interpersonal communication (Ekman, 1992; Elliot & Greenberg, 2007; Greenberg, 2004). Nowhere are emotions more important than in communicating safety and danger. Emotions are adaptive because they encourage approach and avoidance behaviors from the organism (Chen & Bargh, 1999; Davidson, Ekman, Saron, Senulis, & Friesen, 1990). For example, fear inducing situations signal to the organism that he or she should withdraw and avoid a possible threat (Alexopoulos & Ric, 2007). Likewise, anger is thought to be an approach emotion that encourages the organism to eliminate a possible threat (Adams & Kleck, 2003; Harmon-Jones & Allen, 1998).

How Emotions Influence Other People

Emotions also transmit the likelihood of approach and avoidance from others (Adams, Ambady, Macrae & Kleck, 2006; Ekman, 2003; Marsh, Ambady, & Kleck, 2005), sometimes in unsurprising and surprising ways. Facial expressions that express angry gazes encourage avoidance from others and fearful gazes, contrary to popular thought, encourage approach from others (Adams et al., 2006; Marsh et al., 2005; Marsh, Adams, & Kleck, 2005). Fearful gazes may encourage approach because they are judged

as "rounder, kinder, warmer, more submissive, and more babyish than anger expressions" (Marsh, Adams, & Kleck, 2005, p. 122). The ability to decipher the meaning of these nonverbal cues (particularly facial expressions of emotion) has been positively related with "empathy, affiliation, extraversion, dominance, conscientiousness, openness, tolerance for ambiguity, need to belong, better personal relationships, and internal locus of control [and…] negatively related to neuroticism, shyness, depression, and an insecure attachment style" (Hall, 2010, p. 420). In short, the ability to decipher the meaning of nonverbal cues is related to effective interpersonal relationships (Davis & Krauss, 1997; Hall, 2010; Hall, Andrzejewski, & Yopchick, 2009) and intrapersonal health. Therefore, those individuals who have difficulty deciphering the meaning of nonverbal cues would also have less than effective or possibly damaging interpersonal relationships.

Physiological and Automatic Basis to Emotional Perception

The ability to decipher the meaning of other people's emotions appears to be physiologically based. In fact, the ability to recognize different emotions has been found to be located among different neural pathways (Murphy, Nimmo-Smith, & Lawrence, 2003). The neural pathway for fear is generated from the amygdala to the right orbitofrontal cortex (Adolphs, 2002). The neural pathway for anger is generated in the left inferior frontal lobe, posterior left temporal lobe of the left hemisphere, posterior gyrus cinguli of the right hemisphere (Sprengelmeye, Rausch, Eysel, & Przuntek, 1998), and right amygdala (Ewbank et al., 2009). Knowing these neural pathways has allowed researchers to study neuronal activation in these areas even when fearful stimuli are back masked (e.g., a presentation of a fearful expression for 33 milliseconds immediately followed by a presentation of a neutral facial expression for 167 milliseconds) (Whalen et

al., 1998). That the amygdala activates even when back masked indicates that a good portion of recognizing emotion is physiological and automatic. Some emotions appear to be easier to recognize than other emotions. For example, people are able to recognize angry faces faster than happy faces (Fox et al., 2000; Öhman, Lundqvist, & Esteves, 2001). Despite the physiological basis of emotion recognition, perceiving emotions is not always automatic (Edelstei & Gillath, 2008; Fenske & Eastwood, 2003; Horstmann, Borgstedt, & Heumann, 2006). Indeed, perceiving other people's emotions can be compromised by cognitive load (Edelstei & Gillath, 2008) and an individual's conflicting emotions (Fenske & Eastwood, 2003; Horstmann et al., 2006), the latter of which will be more deeply explored.

Emotion Contagion, Embodied Cognition, and Facial Feedback

It is important to understand the mechanisms of how one perceives other people's emotions. On a rudimentary level, just simply seeing a facial expression of emotion causes an emotional reaction (Wicker et al., 2003; Wild, Erb, & Bartels, 2001), can change the emotional state (Blairy et al., 1999; Hess & Blairy, 2001; Lundqvist & Dimberg, 1995; Wild et al., 2001), and can generate empathy of the person perceiving a particular emotion (Hatfield, Rapson, & Le, 2008). In some studies, researchers have found that viewing facial expressions of emotion elicits similar facial expressions in the participants (Blairy et al., 1999; Dimberg & Thunberg, 1998; Dimberg, Thunberg, & Elmehed, 2000; Hess & Blairy, 2001; Lundqvist & Dimberg, 1995; Sloan, Bradley, Dimoulas, & Lang, 2002; Weyers, Muhlberger, Hefele, & Pauli, 2006; Wild, et al., 2001). To pinpoint how similar these facial expressions are, researchers have found that participants experience emotion-specific facial electromyographical (EMG) changes

when exposed to photos of emotionally expressive faces (Dimberg & Thunberg, 1998; Dimberg et al., 2000; Lundqvist, 1995; Lundqvist & Dimberg 1995). In effect, they found that electrical impulses created by facial musculature movements corresponded with the emotions expressed on the photos. These facial expressions are difficult to suppress when viewing photos of emotionally expressive faces (Dimberg et al., 2002; Kappas, Bherer, & Thierault, 2000). This whole process of emotional change due to viewing another person's facial expression of emotion is known as emotion contagion (Wild et al., 2001) and can best be explained under the umbrella of embodied cognition and the facial feedback hypothesis.

Embodied cognition.

Within the umbrella of embodied cognition, a growing number of researchers are studying emotions (Alam, Barrett, Hodapp, & Arndt, 2008; Davis, Senghas, Brandt, & Ochsner, 2010; Havas, Glenberg, Gutowski, Lucarelli, & Davidson, 2010; Keysers & Gazzola, 2006; Niedenthal, 2007; Preston & de Waal, 2002). The premise behind embodied cognition and emotion is that one's interpretation of other people's emotions is highly dependent upon how one experiences it in his or her body and how one experiences it in his or her body colors one's interpretation of other people's emotion (Niedenthal, 2007). This reciprocal process takes place within the interchange of perceptions, physiological changes, and neuronal activations (Niedenthal, 2007). Stated differently, when someone experiences an emotion in the presence of situational factors, context, physiological responses, and facial movements, those emotions are wired with those facial movements. Therefore, seeing another person's facial expression of emotion also produces a physiological response and minute facial movements in that person. In

the parlance of mirror neuron research, perceivers experience another person's emotion as if it is their own (Keysers and Gazzola, 2006). Other researchers explain it this way:

> Upon perceiving the facial expression of the object, the subject automatically retrieves visual and somatic information that can be used to understand the state of the other, or constructs somatosensory representation on-line to simulate the state of the target (Preston & de Waal, 2002, p. 14).

It is suggested that this process of experiencing another person's emotion is through subconscious mimicry in the facial feedback hypothesis (Bailey & Henry, 2009).

Facial feedback.

The facial feedback hypothesis, first suggested by Darwin (1872; 1998), purports that physiological changes, particularly the facial musculature, directly impacts emotions. As stated previously, activating certain facial musculature groups increases the likelihood that one will experience an emotion. Then, experiencing an emotion increases the likelihood that facial musculature groups will be activated, creating a positive feedback loop (McIntosh, 1996; Rutlege & Hupka, 1985). There are two versions of the facial feedback hypothesis. The first one, referred to as the weak version (Bush, Barr, McHugo, & Lanzetta, 1989; Laird, 1974; Laird, 1984), posits that currently felt emotions are amplified by facial musculature contractions. For example, contracting muscles around the cheeks in an upward motion helps to generate a smile. Research indicates that those who pose a more genuine smile are more likely to feel an increase in feelings of happiness compared to those who pose a fake smile (Soussignan, 2002; Strack, Martin, & Stepper, 1988). Likewise, when people pose a disgusted face—characterized by wrinkling of the nose and raised cheeks and upper lip—they tend to rate noxious smells

with more disgust than those who do not pose (Kraut, 1982). Finally, those who purse

their lips, tighten their jaws, and glare, report anger intensification more than those who

did not pose an angry expression (Rutledge & Hupka, 1985). Through these experiments

and others there appears to be continued support for the weak version of the facial

feedback hypothesis.

The other version, referred to as the strong version, has begun to be researched

more recently (Duclos & Laird, 2001; Ekman, 2003; Hess, Kappas, McHugo, Lanzetta, &

Kleck, 1992; Levenson, Ekman, & Friesen, 1990; Levenson, Ekman, & Friesen, 1990;

Levenson et al., 1992). This version asserts that simply by posing certain facial

configurations a physiological response can become activated and people will report

feeling a particular emotion (Duclos & Laird, 2001; Ekman, 2003; Hess et al., 1992;

Levenson et al., 1990; Levenson et al., 1992).

However, early researchers begged the question of whether facial musculature

movements actually produced an emotion or if it was situational factors such as

becoming aware that a particular pose was linked with happiness or through self-

attribution (e.g., "I am smiling. Therefore, I must be happy.") (Laird, 1974; Strack et al.,

1988). To test whether participants were genuinely experiencing more positive emotions

or were identifying an emotion based upon self-attribution Strack and colleagues (1988)

conducted a study. They asked participants to hold a pen between their teeth, their lips, or

non-dominant hand while they filled out questionnaires. Among the questionnaires was a

set of cartoons that participants were to rate on a likert-type scale from "*not at all funny*

(0) to *very funny* (9)" (Strack et al., 1988, pp. 770-771). Results indicated that those who

held the pen between their teeth (the posed smile) rated the cartoons more positively than

those who held the pen between their lips (the posed frown) (Strack et al., 1988). These results have been replicated and continue to receive validation (Soussignan, 2002).

Furthermore, there continues to be research investigating other emotions and their posed correlates (Duncan & Laird, 1977; Duclos, Laird, Schneider, Sexter, Stern & Van Lighten, 1989; Hess et al., 1992; Kleinke, Peterson, & Rutledge, 1998; Laird, Cuniff, Sheehan, Shulman, & Strum, 1989). It appears that posing facial configurations associated with emotions elicits defined emotional experiences. These include: happiness, anger, disgust, contempt, sadness, and surprise (Duncan & Laird, 1977; Duclos et al., 1989; Hess et al., 1992; Kleinke et al., 1998; Laird et al., 1989). In producing these facial configurations, mimicry may be the mechanism that elicits these defined emotions.

Mimicry.

Mimicry is an autoresponse mechanism that contributes to the facial feedback hypothesis (Bailey & Henry, 2009; Bailey, Henry, & Nangle, 2009; Bourgeois & Hess, 2008; Dimberg & Thunberg, 1998; Dimberg et al., 2002; Sato & Yoshikawa, 2007; Stel & Knippenberg, 2008). Similar to embodied cognition, when people view other people's facial expressions of emotion, they experience a physiological response and neuronal activation. Then the neuronal activation contracts the corresponding facial expressions of the viewers within milliseconds and below conscious awareness. Simply stated, people subconsciously mirror other people's emotions. These automatic facial responses are difficult to suppress (Dimberg et al., 2002; Kappas et al., 2000) and can be modulated by attitudes (Likowski, Mühlberger, Seibt, Pauli, & Weyers, 2008). For corroborative evidence, several studies have recorded specific facial EMG changes when exposed to

facial expressions of emotion (Bailey & Henry, 2009; Bailey et al., 2009; Bourgeois & Hess, 2008; Dimberg & Thunberg, 1998; Dimberg et al., 2002; Hess & Blairy, 2001).

Evidence against mimicry.

Despite the overwhelming evidence of mimicry possibly being the mechanism for the facial feedback hypothesis, recent research indicates that mimicry may not be needed to recognize and empathize with other people's emotions (Bogart & Matsumoto, 2010). According to this research, people with Moebius Syndrome (congenital face paralysis) were just as likely to recognize other people's emotions as people without Moebius Syndrome (Bogart & Matsumoto, 2010). According to Chartrand (as cited in Carey, 2010, April 6), people with Moebius Syndrome may have learned how to compensate and use other means to recognize emotions. In possible support of this statement, other researchers (Pistoia et al., 2010) have studied a group of people who have noncongenital facial paralysis. These people suffer from locked-in syndrome (LIS), which is severe facial paralysis due to lesioning in the ventral pons (Pistoia et al., 2010). The study found that people with LIS demonstrated difficulties in recognizing negative emotions such as disgust, fear, anger, and sadness when compared to people without LIS (Pistoia et al., 2010). There was no difference between groups in recognizing happiness or surprise (Pistoia et al., 2010). This indicates that people with noncongenital paralysis may, in fact, use mimicry to understand other people's emotions and that this mechanism may be disrupted if they experience noncongenital facial paralysis or LIS.

Additional evidence for mimicry.

Facial paralysis aside, there is a larger group of people who demonstrably have difficulty recognizing other people's emotions. In general, people with autism have

difficulty recognizing emotions in others (Bal et al., 2010; Kuusikko et al., 2009; Phillip et al., 2010; Rump, Giovanelli, Minshew, & Strauss, 2009). It has been theorized that people with autism may have an inability or difficulty mimicking other people's facial expressions. And, that difficulty may explain why people with autism have a difficulty empathizing with others. In a recent research study (Hermans, van Wingen, Bos, Putnam, & van Honk, 2009), researchers found that people's ability to spontaneously mimic other's emotions was dependent upon gender and autistic traits. Women with the least amount of autistic traits more easily produced facial expressions consistent with identifiable emotions (Hermans et al., 2009). This study illustrates another point; there is possibly a continuum on which emotion is able to be perceived. Knowing how impaired emotional perception affects interpersonal communication also illustrates the utility of mimicry in emotional perception.

The Effects of Impaired Emotion Perception

Being able to perceive other people's emotions assists in regulating our own emotions (Salovey & Mayer, 1990). Additionally, a person's perception ability is related to recognition of specific emotional expressions, such as being able to differentiate between anger and fear (Kohler, Tuner, & Stolar, 2004). Moreover, this ability to perceive emotions allows individuals to feel empathy toward another person (Mayer, DiPaolo, & Salovey, 1990) and encourages different responses, depending on the emotion (Keltner & Ekman, 2000).

For example, when a person expresses happiness, the cheeks are pulled up, eyebrows are pulled down in the outer corners, a fold of skin is gathered under the eye, and crow's feet are formed (Kohler et al., 2004; Ekman, 2003; Ekman & Davidson,

1993). Smiling is generally associated with attractiveness and kindness (Otta, Abrosio, & Hoshino, 1996) and encourages other people to smile and approach people who are smiling. People who suffer from depression are less likely to recognize expressions of happiness (Flanagan, White, & Carter, 2011; Naranjo et al., 2011; Surguladze, Young, Senior, Brebion, Travis, & Phillips, 2004), which means that people who suffer from depression are less likely to smile in return and approach another smiling person. In fact, research indicates that women with postpartum depression are less likely to recognize expressions of happiness than nonpostpartum depressed women (Flanagan, White, & Carter, 2011), which means that women with postpartum depression are less likely to benefit from another person's smile.

When a person expresses sadness, both the upper and lower eyelids droop, the inner corners of the eyebrows are pulled up and in, the outer corners of the mouth are pulled downward, and (in some cases) the chin is pulled up upward (Chiba, 1985; Ekman, 2003; Kohler et al., 2004). Recognition of this expression usually stimulates attention, caretaking, and sympathy (Burgeois & Hess, 2008; Ekman, 2003). People who do not recognize this expression may fail to offer sympathy, support, or caregiving (Ekman, 2003).

When a person expresses fear, the eyebrows are raised and brought together, the top and bottom eyelids are tensed and pulled open, the jaw is dropped slightly, and the lips are spread horizontally (Ekman, 2003; Kohler et al., 2004). This expression signifies an immediate and possible threat (Adolphs, Russel, & Tranel, 1999; Calder et al., 1996; Morris et al., 1996) and may also be related to approach (Marsh, Adams, & Kleck, 2005; Marsh et al., 2005), but research is more inconclusive than sadness.

When a person expresses anger, eyebrows are pulled down and together, the top and bottom eyes are tensed and pulled open, lips are pursed and tightened, and jaws are clenched (Ekman, 2003; Kohler et al., 2004). Anger usually evokes facial and physiological characteristics of fear (Esteves, Dimberg, & Ohman, 1994) and often signals threat toward the perceiver (Bourgeois & Hess, 2008). Anger can be affiliative when expressed toward a shared out-group member (Bourgeois & Hess, 2008). Those who perceive anger also experience physiological responses (Ekman, Levenson, & Friesen, 1983) such as increased blood pressure (Roberts & Weerts, 1982). Research indicates that anger may be more difficult to recognize or "decode" than other emotions (Hess, Phillippot, & Blairy, 1998). Therefore, those who have difficulty recognizing angry expressions of emotion may miss on cues of aggression and/or danger. These people would be less likely to avoid situations that include violence.

Factors That Inhibit Perception of Emotion

As was demonstrated with people who have autistic traits (Bal et al., 2010; Kuusikko et al., 2009; Phillip et al., 2010; Rump et al., 2009), individuals differ in abilities of recognizing emotions (Bennett, & Hejmadi, 2005; O'Sullivan, 2007; Rozin, Taylor, Ross,). These abilities appear to be associated with gender (Hall & Matsumoto, 2004; Hampson, van Anders, & Mullin, 2006; Thayer & Johnson, 2000), age (Calder et al., 2003; Orgeta & Phillips, 2008), medically based procedures and ailments (Adam, Barrett, Hodapp, & Arndt, 2008; Davis, Senghas, Brandt, & Ochsner, 2010; Havas, Glenberg, Gutowski, Lucarelli, & Davidson, 2010; Pistoia et al., 2010), psychopathology (Lynch et al., 2006; Montagne, Schutters, Westenberg, van Honk, Kessels, & de haan,

2006; Wagner, Roemer, Orsillo, & Litz, 2003), and culture (Elfenbein & Ambady, 2003; Matsumoto & Ekman, 1989).

Gender.

Research indicates that gender is associated with people's abilities to recognize and perceive emotion (Hall & Matsumoto, 2004; Hampson, van Anders, & Mullin, 2006; Thayer & Johnson, 2000). Generally speaking, both males and females are faster at recognizing anger in males and happiness in females (Becker, Kenrick, Neuberg, Blackwell, & Smith, 2007). Overall, though, females appear to perform better at recognizing positive and negative emotions (Hall & Matsumoto, 2004; Hampson et al., 2006) than males and this advantage seems to begin in childhood and continue well into adolescence (McClure, 2000). This may occur because females react more strongly to emotionally presented stimuli than males (Lundqvist, 1995). Males, though, are better at identifying specific emotions such as anger (Wagner, MacDonald, & Manstead, 1986), particularly anger presented by other male faces (Rotter & Rotter, 1988).

Age.

As males and females age, it appears that perceptions of emotions become less sensitive. It appears that older adults are significantly less sensitive to emotional facial cues than younger adults (Calder et al., 2003; Orgeta & Phillips, 2008). These results seem to be covaried with age-related cognitive deficits (Orgeta & Phillips, 2008). More particularly, older adults experience deficits in recognizing anger (Bailey, Henry, & Nangle, 2009; Calder et al., 2003) and fear (Bailey, Henry, & Nangle, 2009; Calder et al., 2003). This may be due to the fact that older adults also report being happier than

younger adults and concentrate on more positive than negative emotions and experiences (Gilbert, 2006).

Medical procedure and facial paralysis.

As age increases, so do hospital visits. Hospital visits, though, do not affect people's abilities to recognize emotions. Instead, medical/physiological ailments or procedures diminish one's ability to recognize emotion. One biologically based ailment has already been identified: locked-in syndrome (LIS) (Pistoia et al., 2010). LIS is facial paralysis due to lesioning of the ventral pons. People with LIS demonstrated more difficulty recognizing negative emotions such as fear, anger, and sadness than a normative control sample (Pistoia et al., 2010). However, there were no differences between the samples in the perception of disgust (Pistoia et al., 2010).

Another medical procedure that has received much media attention recently has been botulinum toxin, commonly referred to as Botox. As the search for youthfulness has increased, many people (notably celebrities) have turned to Botox. This chemical poison paralyzes the area in which it is injected. Those who have received Botox also receive a dampening of emotional experience (Alam, Barrett, Hodapp, & Arndt, 2008; Davis, Senghas, Brandt, and Ochsner, 2010; Hennenlotter et al., 2009; Neal & Chartrand, 2011). Additionally, without receiving facial feedback, these individuals take significantly longer recognizing negative emotions in language (Havas et al., 2010) and in other people's facial expressions (Davis, Senghas, Brandt, & Ochsner, 2010; Neal & Chartrand, 2011). Researchers are just starting to understand how Botox affects people's emotional recognition. Continued research may substantiate the facial feedback hypothesis and Botox's dampening effect upon emotion recognition.

Mental disorders and psychopathology.

Similar to medical illnesses and treatments, certain mental disorders, illnesses, and psychopathology also affect emotion recognition (Blair, Colledge, Murray, and Mitchell, 2001; Blair et al., 2001; Bland, Williams, Scharer, & Manning, 2004; Chen et al., 2005; Corcoran, Woody, & Tolin, 2008; Davis & Gibson, 2000; Domes et al., 2008; Hermans, Wingen, Bos, Putnam, & van Honk, 2009; Lynch et al., 2006; Melfsen, Osterlow, & Florin, 2000; Montagne et al., 2006; Renneberg, Heyn, Gebhard, & Bachmann, 2005; Surcinelli, Codispoti, Montebarocci, Rossi, & Baldaro, 2006; Wagner et al., 2003; Wagner & Linehan, 1999). These disorders and personality traits include: borderline personality disorder (Bland, Williams, Scharer, & Manning, 2004; Renneberg, Heyn, Gebhard, & Bachmann, 2005), bipolar disorder (Chen et al., 2005), post-traumatic stress disorder (Wagner et al., 2003), social anxiety (Melfsen, Osterlow, & Florin, 2000; Montagne et al., 2006), obsessive-compulsive disorder (Corcoran, Woody, & Tolin, 2008), autism spectrum disorders (Hermans, Wingen, Bos, Putnam, & van Honk, 2009), paranoid schizophrenia (Davis & Gibson, 2000), and trait anxiety (Surcinelli, Codispoti, Montebarocci, Rossi, & Baldaro, 2006). Even though most of the disorders affect emotion recognition in general, some disorders or traits selectively affect recognition of emotions. For example, as symptoms of obsessive-compulsive disorder become more severe, recognition of disgust becomes less likely (Corcoran, Woody, & Tolin, 2008). Researchers are still unsure about the cause of these results, but suggest that being highly sensitive toward contamination may cause people with OCD symptoms to be less sensitive toward expressions of disgust (Corcoran, Woody, & Tolin, 2008). Compared to control groups, people with generalized social anxiety disorder were less likely to

recognize negative emotions such as anger, sadness, disgust, and fear (Montagne et al., 2006). Likewise, compared to control groups, children with psychopathy were less likely to recognize fearful (Blair et al., 2001) and sad expressions (Blair, Colledge, Murray, and Mitchell, 2001). People with borderline personality disorder, however, are faster at recognizing anger, happiness (Lynch et al., 2006), and fear (Wagner & Linehan, 1999) but also identify neutral stimuli as anger (Domes et al., 2008). In general, mental disorders, illnesses, and psychopathy impair emotional perception. However, in the case of borderline personality disorder, some disorders appear to create hypersensitivity, even providing false positives.

   Culture.

   Finally, one of the most encompassing factors that may impair emotional perception is culture. It has been generally recognized and established that the basic emotions of happiness, sadness, anger, contempt, disgust, surprise and fear are universally recognized across cultures (Ekman, 1989; Matsumoto, 1992). There has also been an argument for including pride as a basic emotion (Ekman, 2003; Lewis, 2000; Tracy and Robins, 2008), which has even been recognized in isolated cultures (Ekman & Friesen, 1971). Even if basic emotions are universally recognized, the culture one belongs to influences accuracy (Matsumoto, Kasri, & Kooken, 1999; Thibault, Bourgeois, & Hess, 2006) and the judgment of emotional intensity (Ekman et al., 1987; Matsumoto, 1989). Some researchers argue that it is easier to recognize emotions of an in-group member rather than an out-group member (Elfenbein & Ambady, 2002). They define in-group members as individuals from the same culture (Elfenbein & Ambady, 2002; Matsumoto, Olide, & Willingham, 2009), not necessarily delineated by country

borders or boundaries (Matsumoto & Hwang, 2010). Recent research indicates that there are no differences between in-group and out-group members in ability of recognizing spontaneous emotions (Matsumoto, Olide, & Willingham, 2009) but there may be differences in posed emotions. Regardless, Dailey and colleagues (2010) suggest that culture influences emotion perception to the degree that a person has exposed himself or herself to facial expressions across cultures. The factor that may influence people's abilities to correctly perceive emotions is display rules.

Display rules.

Display rules dictate when and how people should express emotions within a culture (Ekman & Friesen, 1975; Matsumoto et al., 2005). For example, it is acceptable for females but not males to cry in Western cultures (Plutchik, 2003). The first study to validate display rules was conducted by Friesen (1972). In this classic study, American and Japanese college students were videotaped while they watched neutral and gory films. When they were watching the neutral film, they did not exhibit many facial expressions of emotion. However, when watching the gory film, they exhibited facial expressions of fear and disgust. This was true only when alone. When the experimenter walked into the room, American students continued to display their facial expression of emotion but the Japanese students began to display facial expressions consistent with happiness. They were smiling. The experimenter's presence activated their norm of deference toward authority figures. This indicates that culture does not influence the feeling of these particular emotions. Culture influences the expression of emotion (Fok et al., 2008).

First coined by Ekman and Friesen (1969), display rules fall along five categories in which they are manipulated (Ekman & Friesen, 1969; 2003). These include: no inhibition, deamplifying, amplifying, neutralizing, qualifying, and masking (Ekman & Friesen, 1969; 2003). No inhibition is when an individual reveals his or her emotion without censoring his or her expression. Deamplifying is when an individual reveals his or her emotion with less intensity than what he or she feels. Amplifying is when an individual reveals his or her emotion with more intensity than what he or she feels. Neutralizing is when an individual reveals nothing about what he or she feels. Qualifying is when an individual reveals his or her emotion but smiles to qualify what he or she feels. Masking is when an individual displays a different but socially acceptable emotion in order to hide how he or she truly feels. These forms of modulation have been validated in real world application studies (Ekman & Rosenberg, 1998).

Mimicry and masking.

Just as modulating emotions varies across situations (Matsumoto, Yoo, Hirayam, & Petrova, 2005) so, too, does mimicry (Hess & Bourgeois, 2010). It also appears that any manipulation of one's ability to mimic also decreases one's ability to recognize another person's emotions. It has been found that blocking or suppressing mimicry impairs recognition of different emotions (Oberman, Winkielman, & Ramachandran, 2007). There is probably no stronger example of blocking or suppressing an emotion than through masking. Masking is the displaying of other emotions besides what is being felt (Matsumoto et al., 1998). People learn to mask in ages as young as four years old (Cole, 1986), in the presence of authority figures (Underwood et al., 1992) and even

mask their emotions when a stranger tells an inappropriate, "not funny joke" (Zaalberg, Manstead, & Fischer, 2004, p. 191).

Even though people learn to mask at early ages, there are differences across and between cultures about when people mask. In general, in-group members tend to mask their negative emotions such as anger, contempt, and disgust toward other in-group members (Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998). The differences become apparent within a collectivistic versus an individualistic society. Collectivists, because of social cohesion, find it more permissible to show angry expressions with out-group members but not so much with in-group members (Matsumoto, Yoo, & Chung, 2010). Individualists, because of more availability of and less attachment to in-groups, find it less permissible to share angry expressions with out-group members and, compared to collectivists, share relatively more angry expressions with in-group members (Matsumoto, Yoo, & Chung, 2010). Additionally, people from less urban, smaller communities mask more often than people from urban communities (Matsumoto, Willingham, & Olide, 2009). Alternatively, people from more urban, larger communities tend to express and deamplify negative emotions more often than people from rural communities (Matsumoto, Willingham, & Olide, 2009). Masking also occurs in communities or work places where there is low solidarity and higher relative power targets (Diefendorff, Morehart, & Allison, 2010; Matsumoto, 1991; Ravid, Rafaeli, & Grandey, 2010). So, for those smaller, rural communities, where there are higher relative power targets, masking is more likely to occur.

Like suppression of mimicry, masking influences other people's abilities and time it takes to recognize anger (Matsumoto, Yoo, & Chung, 2010). According to embodied

cognition and facial feedback research, masking may make it difficult to recognize other people's emotions because it may block specific muscle groups from activating specific emotions (Davis, Senghas, & Ochsner, 2009). Masking and its effects upon emotional recognition reveal that "countries [or cultures] that endorse masking of anger [are] also less accurate in recognizing angry expressions" (Matsumoto, Yoo, & Chung, 2010, p. 133) of others. Matsumoto and colleagues who have studied emotion and culture go on to say:

> Unfortunately, there is paucity of cross-cultural research examining actual behaviors in general and in relation to elicited emotions such as anger. Thus, the theoretical framework we have presented in this section must remain speculative until future research can substantiate and/or revise the framework. Such studies are sure to provide additional insights into the complex interplay between biologically based emotions such as anger with culturally based scripts in producing behavior role performances (Matsumoto, Yoo, & Chung, 2010, pp. 133-134).

Anger and the Culture of Honor

Culturally speaking, nowhere has anger been studied more than within the culture of honor (Brown, Osterman, & Barnes, 2009; Cohen, 1998; Cohen, 2009; Cohen & Nisbett, 1994; Harinck, Beersma, Hoorne, & Ghauharali, 2008; IJzerman, van Dijk, & Gallucci, 2003; Nisbett & Cohen, 1996; Rodriguez Mosquera, Manstead, & Fischer, 2002; Shackelford, 2005; Timmerman, 2007; Vandello & Cohen, 2003; Vandello, Cohen, & Ransom, 2008).

Theorized and experimentally validated (Cohen & Nisbett, 1996; Nisbett, 1993), the culture of honor has been found within countries ranging from Mexico and Costa Rica (Figueredo, Tal, McNeil, & Guillén, 2004), Brazil (Vandello & Cohen, 2008), Turkey (Harinck, Beersma, Hoorne, & Ghauharali, 2008; Rodriguez Mosquera, Fischer, Manstead, & Zaalberg, 2008), Morocco, (Rodriguez Mosquera, et al., 2008), the Netherlands (IJzerman, van Dijk, & Gallucci, 2007), Spain (Rodriguez Mosquera, Manstead, & Fischer, 2002), and the Southern regions of the United States (Cohen & Nisbett, 1996; Nisbett, 1993; Timmerman, 2007). The culture of honor is constructed around the premise that violence is acceptable and encouraged in cases of dishonor (Cohen & Nisbett, 1994), particularly in herding societies (Cohen & Nisbett, 1996; Nisbett, 1993; Figueredo, Tal, McNeil, & Guillen, 2004) where there was a weak law enforcement and legal system (Cohen & Nisbett, 1996; Nisbett, 1993). Herding societies are punctuated with nomadic lifestyles and tenuous land and property ownership (Cohen & Nisbett, 2004; Fiske, 2004; Nisbett, 1993). These factors, plus the week law enforcement and legal system combine to create a wellspring of violence (Cohen & Nisbett, 1996; Nisbett, 1993). The culture of honor is associated with family honor (Rodriguez Mosquera, Manstead, & Fischer, 2002), respect and shame (Harinck, Beersma, Hoorne, & Ghauharali, 2008; Rodriguez Mosquera et al., 2008), revenge (Brown et al., 2009; Figueredo, Tal, McNeil, & Guillén, 2004; Harinck, Beersma, Hoorne, & Ghauharali, 2008), collectivism (Cohen, 2009; Vandello & Cohen, 1999), corporeal punishment (Cohen & Nisbett, 1994), norms toward defending honor (Cohen & Nisbett, 1994), and masculinity and female fidelity roles (Vandello & Cohen, 2008). Factors, such as being more collectivistic (Cohen, 2009; Vandello & Cohen, 1999), made

up of less urban, smaller (rural) communities (Nisbett& Cohen, 1996) and weaker law enforcement and legal system—which leads to more uncertain relative power targets— than the North, lead one to believe that the Southern culture of honor is similar to other cultures that purportedly use masking. Similarities between the culture of honor and other cultures include being characterized as being collectivistic (Matsumoto, Yoo, & Chung, 2010), less urban, smaller communities (Matsumoto, Willingham, & Olide, 2009), and having high relative power targets (Diefendorff, Morehart, & Allison, 2010; Matsumoto, 1991; Ravid, Rafaeli, & Grandey, 2010).

Despite mounting evidence supporting the culture of honor, Chu and associates (2000), contest the genesis of the culture of honor within the Southern United States, asserting that herding cultures are not associated with increased violence. When these researchers controlled for temperature, rurality, and socioeconomic status, they found that there was a weak correlation between the culture of honor and violence/homicide (Chu, Rivera, & Loftin, 2000). They also explain that white poverty explains more of the homicide variance (Chu et al., 2000) than any other factor. Despite such claims, Chu and associates (2000) note that the culture of honor and its relationship with violence is a prominent feature of many different societies. Regardless of whether or not the culture of honor is tied with herding societies, recent research (Brown, Osterman, & Barnes, 2009; Cohen, 2009) indicates that the culture of honor is a more stable factor than socio-economic status, temperature, and rurality in relationship with violence.

Factors That Maintain the Culture of Honor

Still, Chu and associates (2000) raise an important point. If the culture of honor began in herding societies, how is the culture of honor currently maintained in the Southern United States? Many people within the South no longer herd.

In the Southern culture of honor, Southerners hold to a set of beliefs, ideals, and cognitions about the appropriate use of violence (Nisbett, 1993). In the context of these beliefs, laws and court proceedings condone violence more in Southern states than in Northern states, especially in cases of protection, female fidelity, and property (Nisbett & Cohen, 1996; Vandello & Cohen, 2003).

Beliefs, ideals, and cognitions about the appropriateness of violence are perpetuated through socialization. Like other cultures, socialization begins at a young age (Brown, Osterman, & Barnes, 2009). Physical punishment toward children is viewed more acceptable among Southerners than among non-Southerners (Cohen & Nisbett, 1996; Nisbett, 1993). Even children in elementary and high school begin to identify with the culture of honor (Brown, Osterman, & Barnes, 2009). Anecdotally, teenagers are encouraged to maintain an air of toughness, to act with violence and without thought when slighted or dishonored (Nisbett, 1989).

Along with socialization, the culture of honor is maintained through institutions such as the legal system (e.g., lax gun control laws and lower sentencing for homicides due to self-defense or honor) (Cohen, 1996), media outlets (e.g., non-stigmatization of violent crimes related to honor) (Cohen & Nisbett, 1997), norms of protecting social worth in low-status societies (Henry, 2009), protection and violent responses to insults (Nisbett, 1993), and a misperception that peers endorse more violence and aggression

than the individual, allowing the individual to feel justified in attacking another person (Vandello, Cohen, & Ransom, 2008). Finally, Cohen and colleagues (1999) have found that norms for politeness help to maintain and perpetuate violence within the culture of honor.

The culture of honor and masking.

Seeking to understand how politeness and aggression share a reciprocal relationship, Cohen and his colleagues (1999) hypothesized that due to an "undercurrent of violence" (p. 258), Southerners encourage an overabundance of politeness and hospitality as norms. These norms are put into place to stifle possible misunderstandings and potential violence (Cohen et al., 1999). They assert that cultures that emphasize politeness as a means to avoid conflict do not equip individuals with rituals to signal their anger (Cohen et al., 1999). Instead, these individuals learn to mask their underlying emotions until it becomes too late and they aggress in a more violent manner (Cohen et al., 1999).

Results of their study confirmed their hypotheses. Northerners, defined as white males from Northern Illinois, signaled increasing amounts of hostility as they were insulted but relented when insults continued (Cohen et al., 1999). Alternatively, Southerners, defined as white males "who had spent one-third of their lives in the South or Southern Illinois," (Cohen et al., 1999, p. 261) did not signal increasing amounts of hostility, presenting "a polite face." The reason for including Southern Illinois as part of the south was because the researchers noted that the region's cultural viewpoints, meal choices, immigration patterns, and traditions are consistent with Southern viewpoints, meal choices, immigration patterns, traditions, etc (Cohen et al., 1999). The South was

also comprised of "Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia" (Cohen et al., 1999, p. 261). For this study, hostility was defined as anger-minus-amusement displays of emotion (Cohen et al., 1999). Meaning, observers gave scores according to expressions of anger minus expressions of amusement as participants were insulted. Over a longer period of time, Southerners displayed outbursts of hostility and violence at more intense levels than Northerners, including two occurrences of physical altercations (Cohen et al., 1999).

As a continuation of this study, Cohen and colleagues (1999) conducted a study examining whether or not Southerners had more difficulty recognizing signals of hostility compared to Northerners. Participants viewed video segments of the previous study, including the videos containing the physical altercations. The videos were stopped before displaying the physical altercations (Cohen et al., 1999). Once again, hostility was defined as anger-minus-amusement displays of emotion (Cohen et al., 1999). Participants rated the video segments using the anger-minus-amusements scores. Results indicated that Southerners were less likely than Northerners to recognize signals of hostility (Cohen et al., 1999). In other words, Southerners also lacked the resources to recognize expressions of anger because they are not taught the cues that signal anger.

It appears, though, that anger is not the only emotional expression that people within the culture of honor have difficulty recognizing. People from honor societies are also less likely to recognize fearful and sad facial expressions (IJzerman, van Dijk, & Gallucci, 2007). Southerners also see less anger or hostility than Northerners (Cohen, Vandello, Puente, & Rantilla, 1999). Other research indicates that people within the

culture of honor are more likely than people outside the culture of honor to engage in future aggression and are less likely to recognize expressions of happiness when dishonored or primed with an insult (Cohen, Nisbett, Bowdle, & Schwarz, 1996).

To date, researchers have identified some factors that inhibit emotion perception sensitivity within culture such as in-groups versus out-groups. Research concerning emotion and culture has focused primarily on display rules. Little research has focused on masking anger and its effect upon emotion perception. Matsumoto and colleagues (2010) have suggested cultures that mask anger are generally less accurate at correctly recognizing specific emotions. However, there is a lack of research directly studying masking anger within or across cultures (Matsumoto, Yoo, & Chang, 2010). The culture of honor, characterized by anger and violence, has been studied to determine how the culture continues to be maintained. Research has focused on socialization (Brown, Osterman, & Barnes, 2009; Cohen & Nisbett, 1996; Nisbett, 1993; Nisbett, 1989), institutions (Cohen, 1996), media outlets (Cohen & Nisbett, 1997); and norms (Cohen et al., 1999; Henry, 2009; Nisbett, 1993; Vandello, Cohen, & Ransom, 2008) to explain how the culture of honor is maintained. Few studies, though, have examined factors at an interpersonal level (Cohen, Vandello, Puente, & Rantilla, 1999). It has been suggested that honor societies may not have the cultural "tool kits" or interpersonal resources to signal and recognize negative expressions of emotion, such as anger, fear, and sadness (Cohen, Vandello, Puente, & Rantilla, 1999). The lack of interpersonal resources to signal and recognize negative emotions may be due to masking. The current study attempted to address gaps in the masking and culture of honor literature. The purpose of

the current study was to examine the effect of the culture of honor and masking on the speed and accuracy of recognizing emotions, particularly anger.

Overview of Current Study

In order to determine whether or not the culture of honor causes masking, which causes a decrease in emotion perception, it was important to determine a causal relationship among these variables. Spencer and colleagues (2005) asserted that it is best to determine a causal link between the mediating variable and the independent variable using an experimental-causal-chain design, particularly when one can manipulate both the mediating and independent variables (See Figure 1.). MacKinnon and Fairchild (2009) suggested using a blockage design, a type of experimental-causal-chain design. A blockage design allows for the mediating variable to be present in one experimental condition but not another experimental condition (MacKinnon & Fairchild, 2009). In effect, the mediator is blocked (See Figure 2.).

To apply a blockage design to this study, we would need the ability to manipulate masking and the culture of honor. The experimental design would need to be set up so that masking and its effects are present in one condition and not in another condition. Furthermore, when masking is blocked, its effects should also be blocked or not present at all. In this blockage design, cause and effect would have to be established by showing that masking influences emotion perception. Second, we would need to show that when masking is not present, there is no influence on emotion perception. Third, we would need to show that the culture of honor (with masking present) influences emotion perception. Fourth, we would need to show that the culture of honor (with masking not present) has minimal to no effect upon emotion perception. If all four conditions are met,

we can infer that masking is a mediator between the culture of honor and emotion

perception. If masking occurs within the culture of honor, which affects emotion

perception, we can infer that the culture of honor causes masking, which affects emotion

perception

Because masking occurs within a social context (Diefendorff & Greguras, 2009;

Keltner, 1995; Matsumoto & Kupperbusch, 2001; Soussignan & Schaal, 1996;

Underwood et al., 1992; Zaalberg et al., 2004) and is difficult to control in more

naturalistic settings, masking would need to be simulated. In order for a simulation of

masking to occur, a person needs to experience a felt emotion other than the expressed

emotion. In other words, there needs to be a contrasted effect between what is felt and

what is expressed. Additionally, a person within the culture of honor is more likely to

express a masked emotion in the presence of other people. Being in the presence of other

people would also cause difficulties measuring what types of emotions were presented to

the subject. Therefore, we will be artificially inducing masking while participants are

shown previously selected stimuli.

This study used a 2 (prime: Culture of Honor vs. none) by 2 (expression of

emotion: mask vs. mimic) blockage design (MacKinnon & Fairchild, 2009). Consistent

with the blockage design (MacKinnon & Fairchild, 2009), participants were randomly

assigned to one of four conditions. In the culture of honor prime/mask (mediating

variable) condition, after being primed with the culture of honor (through the use of

questionnaires and scenarios) (Figueredo, Tal, McNeil, & Guillen, 2004; Rodriguez

Mosquera et al., 2008; Rodriguez Mosquera, Manstead, & Fischer, 2002), participants

were asked to hold a pen in between their teeth to simulate masking. It was expected that

participants within this condition would take significantly longer to correctly recognize the expressed emotion. Participants may perceive an emotion and take longer to recognize an emotion due to the combination of culture of honor norms and the blocking of facial feedback with masking. In the mask/no prime (mediating variable) condition (See Figure 1.), participants were asked to hold a pen in between their teeth to simulate masking while completing the task. Participants in this condition were expected to find it difficult to correctly identify the expression of emotion due to masking. In the mimic/culture of honor condition, participants were primed for the culture of honor but were allowed to mimic the observed facial expressions of emotion. Participants in this condition would not have experienced a decreased ability to correctly identify facial expressions of emotion. Finally, in the mimic/no prime condition, participants were asked to pay close attention to the observed facial expressions of emotion. Because masking usually occurs within a social context (Diefendorff & Greguras, 2009; Keltner, 1995; Matsumoto & Kupperbusch, 2001; Soussignan & Schaal, 1996; Underwood et al., 1992; Zaalberg et al., 2004) and is artificially simulated in this study, asking participants to pay close attention to the observed facial expressions of emotion should automatically lead to mimicking. Due to their ability to mimic unobstructed, people within this condition should not have experienced difficulty correctly identifying facial expressions of emotion.

Defining Variables

   Masking.

   For the purposes of this experiment, masking was defined as holding a pen between the teeth without allowing the lips to touch the pen. This manipulation causes

participants to use the same muscles that are formed when smiling and interrupts the

process of masking but does not produce an emotional state of happiness (Niedenthal,

Brauer, Halberstadt, & Innes-Ker, 2001). This manipulation is also similar to facial

expressions a person who has been insulted within the culture of honor would make:

"smiling to help cover the expression of negative emotions in the mouth area" but not in

the eyes (Ekman and Friesen, 1982, p. 247).

Mimicking.

For the purposes of this experiment, mimicking was defined as one's natural

automatic response when observing an emotion.

Hypotheses

Main Effect of Masking

Hypothesis 1 stated that participants who were randomly assigned to mask would

take significantly longer than participants in the control (mimic) condition at correctly

perceiving and identifying emotions. In other words, it was predicted that masking would

cause a decreased ability to correctly perceive and identify emotions when compared to

those who were allowed to mimic.

Main Effect of the Culture of Honor

Hypothesis 2 stated that participants primed with the culture of honor would not

take significantly longer than participants in the control condition (no prime) at correctly

perceiving and identifying emotions. In other words, there should be no difference in

ability to correctly perceive and identify emotions between those who were primed with

the culture of honor and those who were not primed with the culture of honor. The

reasoning behind this hypothesis is that within the culture of honor, masking is the

mediator of decreased emotion perception sensitivity. Therefore, if masking is isolated out, we should not see a difference between the culture of honor and the control group.

Interaction Effect between Masking and the Culture of Honor

Hypothesis 3 stated that participants in the culture of honor prime/mask condition would take significantly longer than participants in the control condition at correctly perceiving and identifying emotions. In other words, there would be an interactive effect of culture of honor prime and masking in correctly perceiving and identifying emotions. Participants in culture of honor prime condition would take significantly longer correctly perceiving emotions than the no culture of honor prime/mask condition, or no culture of honor prime/mimic condition only when paired with masking. Finally, participants in the control condition would take a significantly shorter amount of time at correctly perceiving and identifying emotions.

Main Effect of Emotion

Hypothesis 4 stated that there would be a difference in participants' abilities to correctly perceive and identify emotions based upon the presented emotion (i.e., sadness, happiness, anger, surprise, fear, and disgust). It was hypothesized that participants would take longer at correctly perceiving and identifying emotions of anger than any other emotion.

Interaction between Experimental Condition and Emotion

Hypothesis 5 stated that participants in the culture of honor prim/mask condition would take significantly longer to correctly identify the emotion of anger than any other participants.

Masking as Mediation

Hypthesis 6 stated that if conditions of hypotheses 1 through 4 were met, it could be inferred that emotion perception sensitivity was dependent upon the mediator of masking. In other words, if the effects of decreased emotion perception are present in the culture of honor prime/mask group but not present in the culture of honor prime/mimic group, we can infer that participants who were primed with the culture of honor, would mask, resulting in decreased emotion perception sensitivity.

CHAPTER III

METHODS

Participants

The current study was approved by the Institutional Review Board of Georgia

Southern University prior to data collection. Participants were drawn from the local

undergraduate student population enrolled in Introduction to Psychology and upper level,

undergraduate psychology courses. They were able to sign up for the experiment through

SONA Systems, supported by the psychology department. Each participant received 1.5

hours of credit for participating in the study and all participant identification was kept

confidential. A total of 111 male (68.8%) and female undergraduate students participated

in the study. After removing data due to missed data, theoretical underpinnings, and

outliers, data analysis was conducted using 81 participants. The demographics for this

sample were 59 male (69.4%) and 26 female participants. The participants' average age

was 19.45 years ($SD = 1.14$) and consisted of 49 participants (57.6%) who identified

themselves as Caucasian, 29 as African-American, 4 as Asian/Pacific Islander, 2 as

Multiracial, and 1 as Latino.

Measures

Research participants completed a *demographic questionnaire* at the end of the

study; gathering information such as birthplace, years lived in the south, state of

residency, age, gender, etc. Included with this questionnaire was a question asking

participants what they thought was being studied.

Research participants completed three questionnaires that have been validated to measure the culture of honor and induce thoughts consistent with being insulted or dishonored (Figueredo et al., 2004; Rodriguez Mosquera et al., 2002; Rodriguez Mosquera et al., 2008). These questionnaires were used to prime participants with the culture of honor. First, the *Culture of Honor Questionnaire* was validated primarily on a Central American population and was tested on populations in Arizona and Spain (Figueredo et al., 2004). The questionnaire was comprised of reciprocity and revenge scales, with an initial correlation of .26, indicating that they are two distinct scales and constructs. The reciprocity scale, though, lacked internal consistency. Therefore, it was useful to use the revenge scale to assist in studying the culture of honor. The revenge scale is comprised of 16 items and asks respondents to evaluate whether another person's actions were justified in different revenge seeking behaviors. The questionnaire uses a 6-point Likert-type scale with +3 indicating that the person "did much less than he/she should have done" in the scenario and a -3 indicating that the person "did much more than he/she should have done" in the scenario. In previous research, the revenge scale demonstrated internal consistency with Cronbach's alphas from .76 to .87 in the U.S.A., Spain, Mexico, and Costa Rica populations (Figueredo et al., 2004). For this study, Cronbach's alpha was .83.

The second questionnaire, the *Honour Concerns Questionnaire* (Rodriguez Mosquera et al., 2002) is comprised of 4 scales, concerns for family honor, integrity, masculine honor, and feminine honor. Their internal consistency ranges from .70 to more than .80 (Rodriguez Mosquera et al., 2002). For this study, Cronbach's alpha was .94. Participants were instructed to imagine how their self-esteem would be negatively

affected by another person's actions, particularly if someone slighted their reputations. Participants rate 28 imagined scenarios on a 7-point Likert-type scale, ranging from 0 to 6 (0 = not at all and 6 = very much). Participants scoring high on the concern for family honor scale indicate more intense emotions of anger and shame accompanied with the threat to family honor vignette. Participants scoring high on the scale and vignette indicate higher culture of honor endorsement.

The third questionnaire, a shorter *Honour Value scale* (Rodriguez Mosquera et al., 2008), contained 5 items asking participants how much they value positive evaluation and respect from others. This scale is measured on a 5-point Likert-type scale ranging from 1 to 5 (1 = not at all and 5 = extremely important) (Rodriguez Mosquera et al., 2008). For this study, Cronbach's alpha was .78.

Cronbach's alpha for all items combined across the three questionnaires was .91. Therefore, we decided to average the 3 scales together. The combined average scale was used for participants who were primed with the culture of honor. We expected that the completion of these measures would not activate the same levels of the culture of honor across all participants. Instead, we predicted that some participants primed with the culture of honor would indicate a high endorsement of this cultural norm and some participants primed with the culture of honor would indicate a low endorsement of this cultural norm. We expected that this differential level of endorsement would affect emotion detection. Specifically, we predicted that high culture of honor endorsers would take significantly longer correctly perceiving expressions of anger than low culture of honor endorsers. For more information on the culture of honor scales, see Table 1 (Appendix B)

Before beginning the questionnaires, all participants were given the following instructions as a cover story:

Due to the short length of the experiment, another researcher has asked that you complete another set of questionnaires focusing on how you might respond in different situations or to how much you agree with another person's actions. Please take your time as you answer all of the questions.

The *Emotional Expression Multimorph Task (EEMT)* (Blair et al., 2001) is a tool that measures the speed and accuracy with which participants recognize emotions. The video sequences in this task were created utilizing the Pictures of Facial Affect (POFA) (Ekman & Friesen, 1976), which have been empirically validated as full expressions of emotions (Ekman & Friesen, 1976) and have been adapted from a morphing technique created by Perrett, May, and Yoshikawa (1994). The sequences were comprised of the six emotional expressions (i.e., sad, anger, happy, surprise, fear, and disgust). These sequences begin with neutral expressions of emotion and continue to morph into 100% expressed emotions, posed equally by males and females from different cultural backgrounds. Sequences are randomized across participants.

Before beginning the task, all participants were given the following instructions:

On the computer screen you will be presented with a series of faces. At the beginning of each sequence, you will see a face with a neutral or blank facial expression. You will see the facial expression change until it reveals an emotion of happiness, sadness, anger, disgust, surprise, or fear. You are to click on the emotion button that best corresponds with the presented emotion. Remember that this is a timed task. So, please click on the correct emotion as soon as possible.

However, you will be able to change your mind throughout the sequence as much as you want. Once the picture has completed its sequence, you will be asked to make your final decision.

The measure on this performance was the reaction time it took for the participant to recognize and correctly identify the emotion. Their first decision was recorded as well as their final decision. Their first decision was used to determine the participant's emotional sensitivity, testing for response bias which may cause some participants to respond without actually identifying the facial expression of emotion. Finally, the participants overall accuracy was measured by allowing them to make a final decision.

Procedures

At the beginning of the experiment, all participants were provided with written informed consent. Afterward, participants were asked to sit in front of the computer and listen or follow the instructions on the computer screen. For the priming conditions, participants completed the culture of honor questionnaires on the computer before the participating in the Emotional Expression Multimorph Task (EEMT). Participants were informed that due to the brevity of the experiment another researcher asked that participants fill out questionnaires regarding their attitudes toward different thoughts and reactions toward other people. After completing the questionnaires, the students were asked to participate in the EEMT, following the instructions as indicated above. Immediately following these instructions, the participants received a set of instructions based upon their random assignment (culture of honor prime/mask; culture of honor prime/mimic, no culture of honor prime/mask no culture of honor prime/mimic).

Masking instructions.

Participants randomized to the mask and mask/culture of honor prime conditions received the following instructions:

As you complete the following task, we would ask that you place this pen in your mouth, holding it in between your teeth, making sure that you do not touch the pen with your lips. We are testing to see if this distraction task affects the amount of time it takes for you to recognize the correct emotion. You will be given an opportunity in between sequences to reposition the pen if you become tired. The pen will be yours to keep in appreciation for your participation in this study. I will demonstrate to ensure that you are holding the pen in your mouth correctly. I will check every once in a while to make sure that you are holding the pen correctly.

Mimicking instructions.

Participants randomized to the mimic and mimic/culture of honor prime received the following instructions.

As you complete the following task, we would ask that you pay attention as much as possible. You will be given an opportunity in between sequences to relax if you become tired.

Each participant was presented with four trials of each of the six emotions, equaling 24 trials. These trials were counterbalanced to account for order effects. Each multimorph trial began with a neutral face (0% emotional expression) and morphed until it reached a full expression (100% emotional expression) of sadness, happiness, anger, fear, surprise, or disgust. Each trial took approximately 20 seconds to complete its morphing sequence. The multimorph trial was presented uninterrupted and was in full

view of the participant until the participant made his or her final decision. Participants

were able to click on any of the six desired emotion buttons. Participants were also able

to change their mind and click on any of the other emotion buttons as the sequence

progressed. Finally, once the participant made his or her final decision, the image

disappeared and was replaced by a blank screen. If needed, the blank screen allowed the

participant to reposition the pen in their teeth. Immediately following the EEMT,

participants in priming conditions completed the culture of honor questionnaires on the

computer. All participants completed the demographics before debriefing. Finally,

participants were debriefed about the true nature of the study and allowed to ask

questions regarding the experiment.

Data Analysis

      This study was a 2 (emotional expression: mask vs. mimic) X 2 (Prime: Culture

of Honor prime vs. no prime) X 6 (emotion) mixed design with repeated measures on the

last factor. The dependent variable was the reaction time correctly identifying an emotion

(sensitivity to emotional expressions). The experimental conditions consisted of four

groups (culture of honor prime/mask; culture of honor prime/mimic, no culture of honor

prime/mask no culture of honor prime/mimic). The within subjects variable was a

repeated measure that consisted of six levels of emotion (sadness, happiness, anger, fear,

surprise, and disgust). Each emotion was presented on four occasions, yielding a total of

24 trials.

Results were examined for distribution normality (skewness and kurtosis). Next, data were analyzed using a 2 X 2 X 6 (sadness, happiness, anger, fear, surprise, and disgust) repeated measures mixed ANOVA, examining univariate comparisons of emotions to determine if masking influenced participants recognition accuracy and speed of anger .

CHAPTER IV

RESULTS

Normality of Distribution

Before completing the primary analysis, data was examined for missing data, theoretical underpinnings, and distribution normality. First, 22 participants were removed because the experimental program terminated before these participants could complete the study. Second, 5 participants were removed because they were transplants from Northern States and did not live in the South more than six years (Cohen, Nisbett, Bowdle, & Schwarz, 1996). Third, the dependent variables (e.g., the six emotions and sensitivity to emotional expressions) were examined for distribution normality.

Examining distribution normality included, identifying outliers, examining skewness and kurtosis, transforming data, and examining transformed data for skewness and kurtosis. First, four extreme outliers were identified. Three participants took considerable amounts of time correctly identifying the emotions (some taking an additional 40 seconds after the full expression was presented). One of these outliers was in the no prime/mimic group. Two of these outliers were in the no prime/mask group. The final outlier was eliminated due to identifying the emotions too quickly, more than half the time using a response set. This participant was from the no prime/mimic group. Excluding these data points, provided 81 participants for further analysis. Examining skewness and kurtosis revealed that data on four of the six emotions were moderately

positively skewed. Data were square root transformed. The revised distributions

improved in size and shape and were within considerable limits.

Gender Covariate

Because previous research indicates there is a relationship between emotion

perception and gender (Hall & Matsumoto, 2004; Hampson, van Anders, & Mullin, 2006;

Thayer & Johnson, 2000) with females generally performing better than males (Hall &

Matsumoto, 2004; Hampson et al., 2006), gender was examined to determine if there was

a difference among this sample. Furthermore, even though previous research theoretically

centers on the male Culture of Honor, recent research has begun to identify females' roles

in the culture of honor (Nisbett & Cohen, 1996; Vandello & Cohen, 2003; Vandello,

Cohen, Grandon, & Franiuk, 2009). Therefore, independent samples *t* tests were initiated.

No significant differences were found between males and females on emotion perception,

$t(79) = -0.25$, $p = .80$. Due to this result, females were not eliminated from the primary

analysis and gender was not controlled for as a covariate.

Even though there were no differences found between males and females on

emotion perception we decided to analyze the data more in depth. Previous research

shows that males and females are faster at recognizing anger in males and happiness in

females (Becker, Kenrick, Neuberg, Blackwell, & Smith, 2007) and males are better than

females at identifying anger presented by other male faces (Rotter & Rotter, 1988).

Therefore, it would stand to reason that there may be an interaction between the

participant's gender and the stimulus gender.

We conducted a 2 (gender: male vs. female) X 12 (stimuli gender) repeated-

measures analysis of variance to examine the effect of the stimuli gender on the

participant's ability to correctly perceive emotions. We anticipated results consistent with previous research: that males will be quicker than females at identifying anger in other males and that females will be quicker than males at identifying happiness in females. There was a significant multivariate effect, $F(1, 80) = 13.94$, $p < .001$, partial $\eta^2 = .69$. There was a main effect for stimuli gender $F(11, 80) = 12.78$, $p < .001$, partial $\eta^2 = .14$, but not for participant gender $F(1, 80) = .001$, $p = .97$, partial $\eta^2 = .00$. There was, however, an interaction effect $F(1, 80) = 1.92$, $p = .033$, partial $\eta^2 = .02$. Further analysis using independent samples t-tests was utilized to examine differences between the six emotions and gender. Of all the emotions, it took males ($M = 17108.5$, $SD = 9966.49$) significantly longer than females ($M = 12692.30$, $SD = 5012.78$) to correctly identify disgust in female stimuli, $t(79) = 2.02$, $p = .047$. These findings add more understanding to what type of emotions across genders may cause difficulties at correctly perceiving emotions.

Race Covariate

Because previous research indicates that the culture of honor among African Americans is not isolated to one geographical area (Nisbett & Cohen, 1996; Shackelford, 2005), data was analyzed with independent samples *t* tests to ensure there were no significant differences between Caucasian and African-Americans on emotion perception. No significant differences were found between Caucasian ($M = 15524.38$, $SD = 3461.24$) and African-Americans ($M = 15465.52$, $SD = 4660.07$), $t(73) = -0.29$, $p = .77$. Due to this result, African-Americans were not eliminated from the primary analysis and race was not controlled for as a covariate.

Differences in Emotion Perception Sensitivity

A 2 (emotional expression: mask vs. mimic X 2 (Prime: Culture of Honor prime vs. no prime) X 6 (emotion) repeated-measures mixed design analysis of variance was conducted to examine the effects of masking and the Culture of Honor on reaction time of correctly identifying an emotion (sensitivity to emotional expressions). Analysis indicated a significant multivariate effect, $F(4, 77) = 32.31$, $p < .001$, partial $\eta^2 = .68$. There was also a significant main effect for emotional expression, $F(1, 77) = 4.16$, $p = .045$, partial $\eta^2 = .05$. Between-groups comparisons for emotional expression revealed that the mask group ($M = 15964.32$, $SD = 3840.07$) were significantly slower than the mimic group ($M = 14415.15$, $SD = 3731.87$) at correctly identifying emotions, $t(79) = 3.86$, $p = .05$. There was not a significant main effect of prime, $F(1, 77) = .189$, $p = .66$, partial $\eta^2 = .002$. The prime group ($M = 15071.92$, $SD = 4067.67$) and no prime group ($M = 15560$ $SD = 3686.39$) were of nearly equivalent speed in correctly identifying emotions. The emotional expression X prime interaction was also not significant, $F(1, 77) = 2.66$, $p = .107$, partial $\eta^2 = .03$. For more information, see Table 2 (Appendix B).

One reason why there may not have been an interaction between the culture of honor and masking could be due to individual differences among the participants and their views toward the culture of honor. To examine these differences we separated participants among low and high culture of honor endorsers, using the culture of honor scales previously mentioned. We hypothesized that participants who were primed and who scored high on the culture of honor scales would take significantly longer than participants who were primed and who scored low on the culture of honor scales at correctly identify the correct emotions. The dependent measure was reaction time in

milliseconds. We conducted a one way ANOVA to test this hypothesis with an independent variable of culture of honor endorsement (high vs. low vs. no prime groups). Analysis indicated a significant effect, $F(2, 78) = 6.19$, $p = .003$, partial $\eta^2 = .14$, such that low culture of honor endorsers (M = 19965.77, $SD = 4716.44$) took significantly longer than high culture of honor endorsers (M = 14588.91, $SD = 4352.02$) and those who were not primed with the culture of honor (M = 15741.32, $SD = 5362.9$).

Next, the main effect of the emotion on emotion perception was examined. Analysis indicated that there was a significant main effect for emotion, $F(5, 77) = 33.37$, $p < .001$, partial $\eta^2 = .30$. Further analysis using independent samples t-tests was utilized to examine differences between emotional perception of anger and other emotions. It took significantly longer for participants to recognize anger ($M = 16451.77$, $SD = 5299.61$) only when compared to happy ($M = 11460.63$, $SD = 5473.89$), $t(80) = -5.89$, $p < .001$, and surprise ($M = 14280.82$, $SD = 5376.69$), $t(80) = -2.73$, $p = .011$, but not when compared to sad ($M = 15995.39$, $SD = 5368.09$), fear ($M = 16800.34$, $SD = 4382.27$), or disgust ($M = 16682.50$, $SD = 4585.88$), all p's > .05. For comparisons between other emotions, refer to Table 3 (Appendix B).

Finally, the interaction between experimental conditions and emotion was examined to determine what emotions contributed to difficulties in correctly perceiving and identifying emotions across conditions. The emotion expression X prime X emotion was not significant, $F(5, 77) = 1.10$, $p = .36$, partial $\eta^2 = .014$. No further analysis could be made to determine difficulties in correctly perceiving and identifying emotions across conditions.

CHAPTER V

DISCUSSION

Our overall first hypothesis was that participants who mask will take significantly longer than participants in the control (mimic) condition at correctly perceiving and identifying emotions. In other words, masking causes a decreased ability to correctly perceive and identify emotions when compared to those who are allowed to mimic. Our hypothesis was supported. This finding is in agreement with previous research that indicates that those who mimic are better at perceiving emotions than those who do not mimic (Oberman, Winkielman, & Ramachandran, 2007). When analyzing differences between anger and other emotions, it took participants significantly longer to recognize anger when compared to happy and surprise, but not when compared to sad, fear, or disgust. This is consistent with the facial feedback hypothesis in that a participant would take longer recognizing emotions of anger than surprise and happiness. This is particularly true because participants were simulating masking with a happy expression in this experiment. Therefore, participants are more likely to recognize happiness faster than anger.

This result is in contrast to previous findings that people are able to recognize angry faces faster than happy faces (Fox et al., 2000; Öhman, Lundqvist, & Esteves, 2001). The difference between this and previous findings are that participants in this study were required to perceive the emotion in isolation from other present emotions. Other research studies have required participants to perceive emotions in the context of

other presented emotions or neutral stimuli (Fox et al., 2000; Öhman, Lundqvist, & Esteves, 2001). Plus, stimuli from some other studies have used cartoon or hand drawn stimuli to measure emotion perception (Fox et al., 2000; Öhman, Lundqvist, & Esteves, 2001). The stimuli in this study were of black-and-white pictures of human faces and not cartoon or hand drawn stimuli. Furthermore, characteristics consistent with angry faces and happy faces are not as simplistic in design and vary across different people in this study when compared to the previous two studies.

It was expected that when the Culture of Honor was parsed out that we would not see any difference in emotion perception sensitivity when compared to the control group (mimicking/no culture of honor prime). The reasoning behind this hypothesis was that within the culture of honor, masking was the mediator of decreased emotion perception sensitivity. Therefore, if masking was isolated out, we should not see a difference between the culture of honor and the control group. This hypothesis was supported. Therefore, we could conclude that the culture of honor does not directly affect emotion perception sensitivity.

The overall hypothesis that participants who are primed with the culture of honor, engage in masking, which decreases emotion perception sensitivity was examined. This hypothesis was contingent on the results that (1) there was a significant difference between masking and mimicking, (2) there was not a significant difference between the culture of honor prime and no prime, and (3) there was an interaction effect between the culture of honor prime and masking, so that when masking was blocked (via mimicking) the culture of honor was not related to a decrease in emotion perception. In other words, when masking was not blocked, the culture of honor was related to a decrease in emotion

perception equal to or greater than when masking was present without the culture of honor. Therefore, a decrease of emotion perception sensitivity is dependent on the mediator of masking. Condition one and two were met. However, condition three was not met. Therefore, according to this analysis, the hypothesis that participants who are primed with the culture of honor engage in masking, which decreases emotion perception sensitivity, was not supported.

One reason why there may have not been an interaction between the culture of honor and masking may be that the stimuli to prime the culture of honor may have not been strong enough. For example, in other studies, participants are randomly assigned to be insulted or not insulted (e.g., calling the other person a name or bumping into the participant and calling that person a name) (Cohen, Vandello, Puente, & Rantilla, 1999; IJzerman, van Dijk, & Gallucci, 2007). A stronger stimuli such as those presented in previous studies, would be more likely to prime the culture of honor.

The exploratory hypothesis—that high culture of honor endorsers would take significantly longer than low culture of honor endorsers at correctly perceiving emotions—was not supported. In fact, those low culture of honor endorsers took significantly longer than any other group. These results are consistent with other priming research (Beilock, Rydell, & McConnell, 2007; Briñol, Petty, & Wheeler, 2006; Lisjak, Molden, & Lee, 2012; Thomson, Patel, Platek, & Shackelford, 2007). Research (Beilock et al., 2007; Briñol et al., 2006; Lisjak et al., 2012; Thomson et al., 2007) indicates when primed with material that is inconsistent with our self-concept or explicit worldviews, people are slower performing tasks that require focused attention and response. Therefore, it is likely that low culture of honor endorsers took significantly longer than

high culture of honor endorsers because the questionnaires presented material that was inconsistent with low culture of honor endorsers' self concept or worldview. These results shed further light on the questionnaires that were used as culture of honor primes. Furthermore, this may explain why there may have not been an interaction between the culture of honor and masking.

Emotion was analyzed to determine if the emotion that was displayed influenced participants' abilities to recognize a particular emotion. Across conditions it was found that emotion did affect participants' abilities to recognize distinct emotions. In particular, it was found that happiness was most easily recognized and identified. Our hypothesis that it would take participants longer to recognize anger than any other emotion was partially supported. It took participants significantly longer to recognize and identify anger than happiness and surprise but not for sadness, fear, and disgust. The reason that there were no significant differences between the latter emotions and anger may be that sadness, fear, disgust, and anger are often attributed as negative emotions. Additionally, males and females are able to recognize happiness faster than any other emotion (Becker, Kenrick, Neuberg, Blackwell, & Smith, 2007; Hall & Matsumoto, 2004; Hampson et al., 2006). This, though, does not necessarily answer the reason why participants were able to recognize surprise faster than anger. Researchers Safdar et al. (2009) point out that happiness and surprise generally fall under the rubric of positive emotions, while the other four fall under negative emotions. Additionally, these positive emotions are more acceptable to display (Safdar et al., 2009) and, therefore, may be more easily recognized and identified.

Gender was analyzed to determine if there were differences between groups on emotion perception as other research indicates (Hall & Matsumoto, 2004; Hampson, van Anders, & Mullin, 2006; Thayer & Johnson, 2000). This study was not able to support this finding. The reason why there may have not been a difference between genders was because Southern females may also be susceptible to effects of the culture of honor (Nisbett & Cohen, 1996; Vandello & Cohen, 2003; Vandello, Cohen, Grandon, & Franiuk, 2009). Because there appeared to be no difference in perceiving emotions across gender, it may strengthen the argument that there may be a Southern female culture of honor but may be displayed in different ways (e.g., teaching norms, verbal aggressiveness).

Race was also analyzed because some people may argue that African-Americans do not have a culture of honor and, therefore, would not have the same problems with emotion perception as Caucasians. However, research implies that African-Americans may have a culture of honor, which is not geographically isolated (Nisbett & Cohen, 1996; Shackelford, 2005). Because there were no significant differences between groups, African-Americans were not eliminated. Also, the fact that there were no differences between groups may support the hypothesis that African Americans do have a culture of honor.

The results of the current study do not support the hypothesis that masking is the mechanism that contributes to decreased ability to recognize anger in the Southern culture of honor. Therefore, there may be another mechanism that contributes to difficulties accurately recognizing angry expressions. Even though there was not support for masking within this culture, the overall finding was that masking did decrease

people's ability to recognize emotions. This also further substantiates the facial feedback hypothesis, which states that in order to accurately recognize and identify an emotion in another person, that emotion needs to be physically embodied. Therefore, masking could be an additional factor that diminishes people's abilities to empathize with another individual. If an individual has a difficulty empathizing with another individual it could also contribute to breakdown in communication. Communication breakdown could also lead to misunderstandings and inappropriate expressions of anger.

Limitations and Future Directions

Limitations usually occur when a great amount of data has to be sacrificed due to software limitations and mishaps. A great limitation to this study was missing data on account of the software randomly crashing and failing to collect data. Due to those missing data points, a great deal of the data (nearly 20%) was eliminated from the analysis. Eliminating data due to missing data points also decreases the power of the study, leading to a possible type II error of falsely accepting the null hypothesis.

A second limitation was in the distribution of the sample. On each individual level of the six distinct emotions, most of the data were moderately skewed. After transforming the data both by square root and log transformations, we determined to use the square root transformation because log transformation of the data led to a violation of equality of covariance matrices and sphericity. Even though square root transformations led the data to be within normal limits, most of the six distinct emotions were slightly to moderately, positively skewed.

Due to the amount of missing data and slightly to moderately, positively skewed data, it could be argued that a different statistical test should have been used to examine

the repeated measures data. In fact, recent research (Gueorguteva & Krystal, 2004; Judd, Westfall, & Kenny, 2012) indicates that using repeated measures mixed-models approach for studies with missing data and moderately skewed data is more precise than using the repeated measures ANOVA. This form of data analysis is able to take into account correlations among repeated measures and is able to fit data better. If reanalyzing this data we have decided it would be better to use this approach for data analysis.

A third limitation occurs when sources of error variance are not easily controlled or examined. In this study, participants were not limited to White, Caucasian/European American males. Instead, other races and genders were included in the study. Reasoning and justification has already been addressed. However, it would be beneficial to measure differences between groups for the endorsement of the culture of honor. Scales were used primarily as a prime but could have been used to determine if there were differences between race and gender. Depending upon endorsement, some people even within the South could be qualitatively different. This difference could have also contributed to the weakening effect of power and may have resulted in accepting the null hypothesis (i.e., masking being a mediator of the culture of honor and emotion perception). Although differences in endorsement of the culture of honor were not examined, emotion perception was examined across race and gender and no differences were found. Therefore, we could conclude that differences were not due to groups and conditions. Even though gender and race (42.4% identified themselves as non-white) were well represented age was not well represented. Other studies indicate that older adults are less accurate at correctly perceiving emotions than younger adults (Calder et al., 2003; Orgeta & Phillips, 2008). Our study primarily gathered information from a younger adult

population and so results may not represent well the whole population. Anecdotally, though, there are often reports of older men and women who engage in violence when insulted. Furthermore, since the culture of honor is generally more pronounce in older adults than in younger adults (Brown, Osterman, & Barnes, 2009), it may stand to reason that any effect that we would have found of the culture of honor could have generalized to older Southerners.

A fourth limitation to this study was that of lacking a manipulation check to ensure mimicking. Other researchers have used EMGs (Bailey & Henry, 2009; Bailey et al., 2009; Bourgeois & Hess, 2008; Dimberg & Thunberg, 1998; Dimberg et al., 2002; Hess & Blairy, 2001) to ensure that participants were mimicking. This study did not use EMGs. Because other research showed that mimicking is an automatic response (Bailey & Henry, 2009; Bailey, Henry, & Nangle, 2009; Bourgeois & Hess, 2008; Dimberg & Thunberg, 1998; Dimberg et al., 2002; Sato & Yoshikawa, 2007; Stel & Knippenberg, 2008) that occurs even when participants are asked to suppress (Dimberg et al., 2002; Kappas et al., 2000), we reasoned that it was unnecessary to have a manipulation check for those participants who were assigned to any mimic condition. It should be noted, though, absent a manipulation check there is a possibility that those who were in the Culture of Honor Prime group had diminished ability to mimic than those in the No Prime group. To be consistent throughout the study, the experimenters who ran the study frequently checked to ensure that all participants were paying attention to the stimuli in the experiment.

A fifth limitation to this study is the translation of experimental data to real world situations. In order to control for many of the factors, they had to be artificially

manipulated. For example, in the real world, people are more likely to witness facial expressions that change faster than 20 seconds. Additionally, facial features are often moving between emotional expressions and not from a neutral facial expression to a full expression of emotion. Likewise, people are more likely to mask when they are put in situations that may cause harm. Being presented to a computer to evaluate emotions in a neutrally emotive experience is not likely to happen in the real world. Also, for ecological validity it would be important to simulate instances of insulting behavior as mentioned previously.

In conclusion, it should be noted that, despite limitations, masking was found to affect people's ability to accurately perceive emotions. This gives further foundation to masking and display rules research. To better understand masking's effects upon emotion perception, it is advisable to apply it in more real world situations (e.g., low dose insults). With low dose insults, it is likely to create the contrast that is needed to better simulate masking. The fact that masking affected emotion perception further validates the facial feedback hypothesis that people are dependent upon facial movement to perceive emotions in other people.

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APPENDIX A

Figure 1: Masking as a Mediating Factor
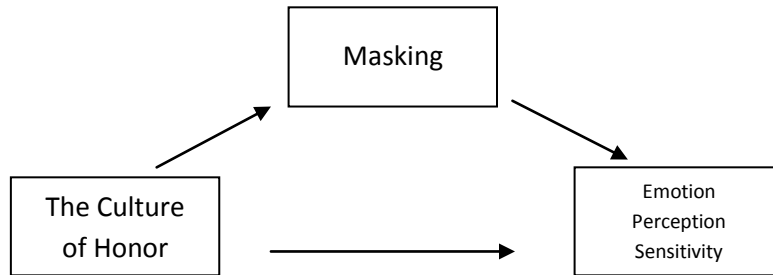
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                        └─────────────┘
                       ↗               ↘
     ┌──────────────┐                   ┌──────────────┐
     │ The Culture  │                   │   Emotion    │
     │  of Honor    │  ───────────────→ │  Perception  │
     └──────────────┘                   │ Sensitivity  │
                                        └──────────────┘
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Figure 2: Blockage Design

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                        ┌─────────────┐
                        │  Mimicking  │
                        └─────────────┘
                       ↗               ╫╫╫╫↘
     ┌──────────────┐                   ┌──────────────┐
     │ The Culture  │                   │   Emotion    │
     │  of Honor    │  ──╫╫╫╫╫╫──────→   │  Perception  │
     └──────────────┘                   │ Sensitivity  │
                                        └──────────────┘
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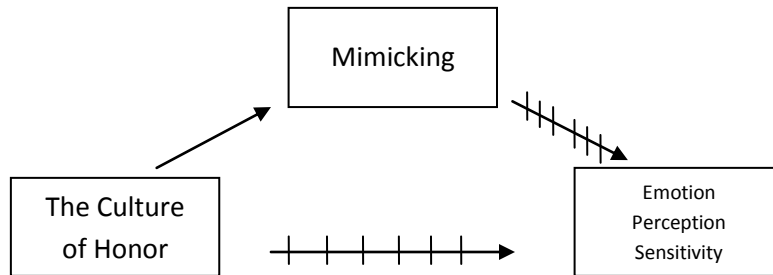
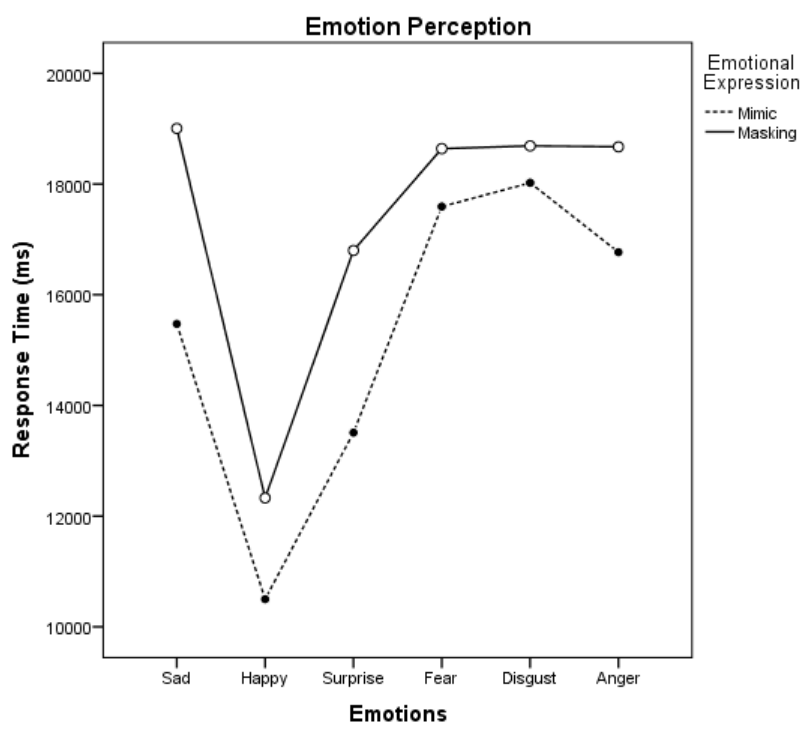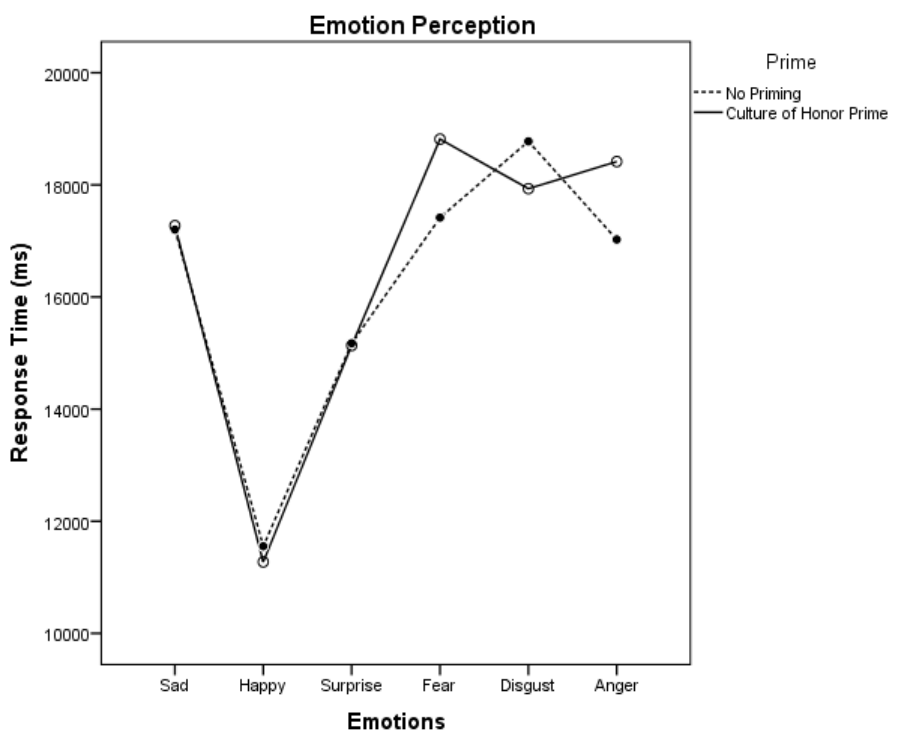Figure 3: Effects of Masking on Emotion Perception

Figure 4: Effects of Culture of Honor on Emotion Perception

APPENDIX B

Table 1

Means and Correlations of Culture of Honor Endorsement

| Scale | Pearson's *r* Values | | | *M* | *SD* |
	COH	HCQ	HVS		
Culture of Honor Questionnaire (COH)	1	.33*	-.16	4.27	.46
Honour Concerns Questionnaire (HCQ)		1	.42	4.27	1.23
Honour Value Scale (HVS)			1	3.97	.72

*p < .05

Table 2
Repeated Measures Analysis of Variance

Effect	*MS*	*df*	*F*	*p*	partial η^2
Emotional Expression	5719.43	1	4.16	.045	.05
Culture of Honor Prime	260.15	1	.189	.66	.002
Expression X Prime	3665.19	1	2.66	.107	.03
Stimuli Emotion	7218.43	5	33.37	.000	.302
Expression X Prime X Emotion	247.58	1	1.79	.34	.015
Error	216.35	77			

Table 3

Mean Differences in Speed of Detection Between Emotions

Emotion	Sad	Happy	Surprise	Fear	Disgust	Anger	*M*	*SD*
Sad	--	4549.95*	1732.89*	902.07	792.38	478.43	16040.74	5287.46
Happy		--	2817.11*	5452.07*	5342.38*	5028.42*	11467.29	5470.47
Surprise			--	2634.96*	2525.27*	2211.31*	14286.04	5373.86
Fear				--	-109.69	423.64	16785.66	4393.09
Disgust					--	313.96	16780.08	4584.63
Anger						--	16409.77	5322.19

*$p < .001$