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The Impact of Values as Heuristics on Social Cognition

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Abstract

Stereotypes, and other forms of heuristics, are used in our everyday lives to assist our brains absorb information. An argument is made here to show that values can act as a form of heuristics and affect implicit attitudes. Drawing on research regarding implicit attitudes, heuristics, and values, we believe that values, such as equality, can act as a heuristic and consequently alter implicit attitudes on race. In this experiment, participants were primed with equality, intuition, or a stereotype inhibition prompt and ran through the affect misattribution procedure (AMP). Contrary to the hypothesized expectation, the results showed that participants in the equality condition rated pictographs preceding African-American faces as less pleasant compared to Caucasian faces. It is discussed whether these findings represent the results of moral licensing: participants who were instructed to think about the value of equality might have felt less of a need to regulate their bias in the AMP. This study displays the variety of ways heuristics affect decision-making.

Keywords: social cognition, values, heuristics, stereotyping, implicit attitudes

Introduction

Heuristics and Stereotyping in a Complex Environment

In everyday life, our brains retain and process a vast amount of stimuli. We must filter and make sense of the information we are exposed to in order properly function in our environment. If we attempt to analyze, process, and retain all that we observe, we would experience an overload. In order to continue effectively making decisions and appropriately behave, we must use shortcuts. These shortcuts work by finding patterns, relying on previous experiences, and gathering general knowledge structures that represent the world. This process helps with decisions, judgments, and reasoning. This is helpful in many real-world situations, where we may not have a large amount of time to assess a situation and must act fast. These shortcuts are known as heuristics.

Heuristics, a form of decision-making, are commonly relied upon mental shortcuts to help make decisions. When in an ambiguous situation, it is easier to make decisions by focusing on some information, while leaving other information out. As Fiske and Taylor (2007) explain, "When people are encoding external stimuli, they do not attend evenly to all aspects of their environment. They watch some things closely and ignore others altogether." (p. 52) It is these heuristics that guide us to choose what information should be focused on and what information could be ignored. There are a vast number of heuristics; the most common heuristics are anchoring, the representativity heuristic, and availability heuristics. For example, people might use heuristics when asked to estimate the divorce rate in the country. By using the availability heuristic, an individual may answer the question by thinking of all the couples they know who are divorced, taking the information that is readily available to them personally to come to a

judgment. Heuristics are used to make sense of a complex situation to guide us in our decision-making (Critcher & Rosenzweig, 2013; Hassin, 2013).

In certain contexts, values can also be used as shortcuts to guide behavior, as heuristics do. They rely on what we know about the world, which guides our behavior in complex moral environments. Values effectively assist in making decisions in a moral domain. Heuristics and values both guide our behavior in ambiguous, complex situations by finding patterns in the world based on previous experience.

Social cognition studies how heuristics develop and how they can be cued differently depending on various factors. This study examines how values, such as equality, can act as heuristics by analyzing implicit racial attitudes when cued to act on values or heuristics.

Definition of Stereotypes and The Link to Heuristics

Stereotypes can also be seen as a form of heuristics. Stereotypes are defined as "qualities perceived to be associated with particular groups or categories of people" (Schneider, 2005). Stereotypes are the mind's way of finding and applying patterns in everyday life. We retain patterns that we observe, and by applying those patterns in other situations; we create shortcuts for ourselves. Stereotyping is one way mental shortcuts are used: we perceive qualities that are repeatedly associated with particular groups and then apply those qualities to other members of the same group at later times. In this way, stereotypes function like heuristics.

Stereotypes are often based on our past experiences and can be helpful to us, like other forms of heuristics. Yet one problem with stereotypes is that we may overgeneralize and disregard important information. Most commonly, groups that are stereotyped are groups based on their minority status, such as race, religion, or sexual orientation. In this way, stereotypes are

potentially harmful in social situations, causing inaccurate evaluations, negative or positive, of a person or situation that does not deserve such appraisal. Stereotypes are often a factor in underlying prejudice and discrimination (Feather & McKee, 2008).

Stereotypes stem from attitudes we hold and there are two distinct types of attitudes: implicit attitudes and explicit attitudes. Both are potentially harmful, but this study concentrates on implicit attitudes. Explicit attitudes are those that individuals often will consciously and openly admit, whereas implicit attitudes are those that are generally unconscious and not accessible. People can only access explicit attitudes, as these are obvious in our minds. It is the implicit attitudes that we cannot access consciously; they come into our minds and consciousness in an effortless manner. The following is an explanation of how attitudes, especially implicit attitudes, are the result of decision-making when we are in a situation that does not allow for us to use higher mental processes.

Dual Process Perspectives on Social Cognition

Dual process approaches state that an assessment can be made in two different ways: information is either processed in a slow, effortful way or in a quick, effortless way. There are a number of dual-process theories in the literature, such as dual-system model (Kruglanski & Gigerenzer, 2011), the two-system view (Kahneman, 2003), the reflective-impulsive model (Strack & Deutsch, 2004), and the heuristic-systematic model (Eagly & Chaiken, 1993). As all dual process models explain, intuitive judgments are a form of heuristics: they are quick, emotionally driven, associative, and error-prone. In contrast, deliberate judgments are slow, rule-based, analytic, and rational. There is an abundance of literature supporting these two

dichotomous pathways, despite using varying language (e.g., Eagly & Chaiken, 1993; Kahneman, 2003; Kruglanski & Gigerenzer, 2011; Strack & Deutsch, 2004).

Using the logic of the heuristic-systematic model in particular, when someone uses heuristics to make a decision, they make the decision quickly, emotionally, and automatically (Eagly & Chaiken, 1993) resulting in judgement, that may not be as accurate as one would hope. Because monitoring is low when following heuristics, accuracy is sacrificed. It should also be noted that although heuristics are error-prone, it does not mean heuristics processing is always inaccurate. Regardless, when compared to systematic processing, heuristics and intuitive judgments are much more likely to be erroneous.

Knowing how error-prone the heuristic pathway can be, it seems as though the systematic pathway is the preferred method of processing. However, the heuristic pathway is typically activated before we are conscious of the options before us. We believe that in an ambiguous situation, it is plausible to switch from the intuitive pathway to the logical pathway, but believe it would be effortful and will take more time to process.

A typical setting where the heuristics pathway is taken is an ambiguous situation; one where the individual is under mental stress, confusion, or under cognitive load (Van Knippenberg, Dijksterhuis, & Vermeulen, 1999). Stereotypes are a common pathway to making a decision when an individual is under mental stress (Mendes & Koslov, 2013; Stewart, Weeks, & Lupfer, 2013; Van Knippenberg, Dijksterhuis, & Vermeulen, 1999).

Characteristics of Stereotypes: Automatic, Accessible, and Learned

Literature supports the idea that heuristics are automatic and accessible (Fiske & Taylor, 2007). Since stereotypes are a form of heuristics, they possess those same functions, as well as being a learned process. Stereotypes are automatic, accessible, and learned.

Automatic

The automaticity of the stereotyping process is a well-established aspect of heuristics; in fact, it has been shown that the process behind many of our behaviors and attitudes are automatic (Bargh, Chen, & Burrows, 1996; Devine, 1989; Lapsley & Hill, 2008; Monteith, Ashburn-Nardo, Voils, & Czopp, 2002). Little effort is required for an attitude or behavior to become activated in our mind once a link is made. The perception of a situation is connected to the behavior and attitude that follow it, and this link will continue to strengthen the process and potentially become automatic. In terms of stereotyping, this could mean that once a perception of a group of people has been created, an individual may behave in a certain way toward that group. This link, if cued and acted on enough times, could become automatic. It is been determined that the process of cueing attitudes are automatic, which includes social behavior (Bargh, Chen, & Burrows, 1996; Monteith, Ashburn-Nardo, Voils, & Czopp, 2002).

When a process is automatic, a decision is made without contemplative thought. It was not a conscious assessment that was made and this process acts in ways beyond our consciousness. When participants were told about a person and a crime they had committed, they recommended harsher punishment for stereotypic offenses (Bodenhausen & Wyer, 1985). This means that when they believed that the crime was stereotypic for the person's ethnicity, they believed the person should be punished even more than someone who committed the same crime but was of a different ethnicity. However, the participants were not explicit about their decisions

– they did not believe ethnicity played a role in their decision. This supports that heuristics and the process of stereotyping are automatic because they were not explicit about these thoughts. They did not consciously make these connections or admit to these opinions. The process that leads to actions based on implicit attitudes is automatic. Further research on this topic consistently supports this idea (Correll, Park, Judd, & Wittenbrink, 2002). In this experiment, participants acted on their automatic stereotypic attitudes. Stereotyping, just like other forms of heuristics, involves a process that is automatic, which people act on in ambiguous situations.

Accessible

Stereotypes are often used due to their accessibility. Literature supports the idea that some stereotypes and the attitudes themselves are accessible, and those stereotypes will be more likely to be acted upon (Devine, 1989; Huntsinger, 2013; Huntsinger, Sinclair, Dunn, & Clore, 2010; Lapsley & Hill, 2008; Sechrist & Stangor, 2001).

Once a stereotype has been made that connects a group of people to a behavior (i.e.: a stereotype), the stereotype is easily activated (Devine, 1989; Lapsley & Hill, 2008). This stereotype is highly accessible and will commonly be relied upon in the future. The accessibility of stereotype activation is beyond our consciousness: in an experiment by Devine (1989), participants accessed and applied previously primed stereotypes without conscious awareness of doing so. The stereotype was easily accessible, and required no thoughts.

According to literature, thoughts and attitudes that are highly accessible are those that best predict behavior (Sechrist & Stangor, 2001). The notions that are highly accessible are those that are acted upon, which is extremely relevant to stereotypes. If an individual holds harmful stereotypes as accessible, they will unfortunately be activated and can be acted on.

A distinction should be made between automaticity and accessibility. In terms of stereotyping, automaticity refers to the process of stereotyping. The accessibility refers to the stereotype or attitude that is held. These characteristics are two specific and different characteristics of stereotypes.

Learned

Before acting on a stereotype, we must some how have the idea in our mind. The best explanation for this is through observational learning. As Bandura (1986) demonstrated, observational learning is a strong predictor in how we engage in social situations and how we develop what we believe is socially acceptable behavior. This is generally how children learn to act in daily situations and is important in the social development of children. This theory of observational learning can be applied to heuristics and stereotyping as well. Based on social learning theory, stereotypes and other forms of heuristics seem to be learned through observations. These multitudes of observations influence our decision-making and help us form the heuristics we rely on.

Another way to think about how we come to possess our stereotypes is associative learning. Associative learning explains that specific features associated with stereotypes might form further biases. Pelley, Cavlini, Spears, Reimers, et al., (2010, p. 139) provide a clear description of associative learning: “Specifically, we might be more likely to develop stereotypes regarding a feature (e.g., gender) that has in the past been found to be predictive of behavioral or physical properties, than one (e.g., eye color) that has been less predictive.” By forming these associations between specific features and behavior, people feel they can predict behavior, which can encourage stereotypes.

If stereotypes are automatic and hard to control, how can we combat them? Is it possible to unlearn them? Such a process would be immensely effortful and difficult. One approach to deter stereotyping would be to guide people to use their values. Values can lead people to think in a more balanced and positive way. Regardless of an individual's background or ideologies, most values focus on humanity in a harmonious manner. Leading people to guide their decisions based on their values can discourage the process of stereotyping, and potentially counter stereotyping altogether. Importantly, values share some cognitive processing characteristics with heuristics and might therefore be an alternative even when cognitive resources are restricted.

Values can act as Heuristics

Heuristics are tactics that help us guide behavior in new or ambiguous situations. Heuristics can lead us astray, either due to their quick, error-prone nature or in situations regarding negative stereotypes (in the context of this study, negative stereotypes refers to racial generalizations). This begs the question, how can we side step this process in favor of a more accurate and virtuous approach? Not much literature has been dedicated to explore the possibility that our value systems might be able to substitute heuristics. The following is a case showing that values are also automatic, accessible, and learned. This illuminates how they might guide us in ambiguous situations without the amount of error of heuristics and, more specifically, how values can counteract stereotyping.

Definition of Values

The definition of values varies depending on the source. Most literature agrees that values contain five elements: "… (a) concepts or beliefs, (b) about desirable end states or behaviors, (c)

that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance" (Schwartz & Bilsky, 1987).

Characteristics of Values: Automatic, Accessible, and Learned

The definition used for values possesses similarities to heuristics in various ways. The three main attributes that heuristics share with values are that they are automatic, accessible, and learned.

Automatic

Like the process of relying on heuristics, the process of relying on values is automatic. As discussed in the dual-system model, there are two approaches to making a decision: reasoning or intuition (Kruglanski & Gigerenzer, 2011). Reasoning, or deliberate judgment, takes time, effort, and logic. It is less prone to errors and is emotionless. The process of heuristics, or intuitive judgment, is quick, effortless, and automatic. It is more prone to errors and uses emotion. Each has advantages as well as disadvantages. Between the two pathways, literature suggests that values act more in line with the heuristic or intuitive judgment (Schwartz, 1996). One reason for this is because of the automaticity of values. Values do not require contemplation or attention; a person's value system is embedded into their mindset.

Values are acted upon in a quick, automatic manner. Values are deeply embedded into our minds, making the process of relying on values automatic (Tobler, Kalis, & Kalenscher, 2008). When in an ambiguous situation, values guide behavior without thought and assist in decision-making. Values can influence our actions, behaviors, and attitudes in subtle ways and can go unnoticed in certain instances. They are always present but not always obvious. Values influence our lives, but much of that influence is an undetected and an automatic process.

Accessible

Like stereotypes, values are commonly relied upon due to their accessible nature. Literature supports the notion that values are highly accessible (Huntsinger, Sinclair, Dunn, & Clore, 2010; Lapsley & Hill, 2008; Sagiv, Sverdlik, & Schwartz, 2011; Wigboldus, Sherman, Franzese, & Van Knippenberg, 2004).

Values, similar to morals or egalitarian ideas, have been shown to be highly accessible (Huntsinger, Sinclair, Dunn, & Clore, 2010). Literature argues that morals and egalitarian mindsets are not controlled, but are activated quickly and effortlessly due to their highly accessible nature. These accessible thoughts have been consistently shown to affect behavior and judgments (Huntsinger, Sinclair, Dunn, & Clore, 2010; Sechrist & Stangor, 2001).

One way we see the accessibility of values is that values are not situation-specific (Sagiv, Sverdlik, & Schwartz, 2011). Unlike attitudes or goals, values remain consistent regardless of the situation. They persist and can be strengthened temporarily in particular situations. Sagiv, Sverdlik, and Schwartz (2011) found that "accessible values influence behavior by directing attention to certain features of the situation, leading to actions that promote goal attainment" (p. 76). Values that are highly accessible (in this case, temporarily due to the measures in the study) can contribute to behavior and perhaps reduce stereotyping.

Learned

Like stereotypes, values are learned. Values are learned through observations, just like heuristics (McKee & Feather, 2008; Tobler, Kalis, & Kalenscher, 2008). Values are not instinctual or embedded in our minds at birth; they are cultured through observing others and the world around us. Everyone's value system is different, whether studying values cross-culturally

or not: values are not the same in everyone. This is because values are a learned function (Tobler, Kalis, & Kalenscher, 2008). We learn which values are important and socially applicable in a particular lifestyle through observing others. We can learn from others' mistakes and successes in regards to values and adapt to construct our own personal value system. Some people have tendencies to explicitly state their values, showing that they prioritize one value over others. When people explicitly state their values, or even if they are not explicitly stated, other people can observe this behavior and learn from it. Just like many other forms of behavior, humans learn what to do and how to act via observational learning (Tobler, Kalis, & Kalenscher, 2008). This is how we learn heuristics and values. We examine the world and people around us to create our own value system from our observations.

Learned values play a role in prejudice. Stereotyping may often lead to prejudice, which McKee and Feather (2008) believe is learned: "Prejudice has deep roots in social learning, family and group dynamics, self-interest, social identification, and in structural variables within a society. Prejudice is also linked to the value systems that people develop in the course of their lives." (2008, p.88) Like stereotypes, values are learned.

Values and Heuristics in Social Cognition

After reviewing the concept and functions of values, values fit more in line with the intuitive pathways, just as heuristics do. They are both automatic, accessible, and learned. The intuitive pathway uses mental shortcuts to use as little energy as possible while still making a relatively accurate decision. This is a feature that both heuristics and values posses. The decision-making research also states that the intuitive pathway is emotional, as opposed to the neutral state of reasoning (Kruglanski & Gigerenzer, 2011). Values and heuristics are both

emotional, especially when they are explicit or able to be explicitly stated (Schwartz, Cieciuch, Vecchione, Davidov, et al., 2012). They assess situational factors and guide personal actions depending on the circumstantial context. When doing so, emotions can interfere with intuitive processes. Values and heuristics are both much more in line with the intuitive pathways than the reasoning pathway of the common two-system model of decision-making.

While values and heuristics function similarly, are they both effortless? They may be automatic, accessible, and learned, but what about the amount of energy that goes into using values? Yet while values can be automatic and accessible, they are more salient than heuristics. If we try to make values even more salient, is that effortful? When acting upon values to guide behavior, are we using more effort than we do when obeying our heuristics? Activating values may be effortless, but what about acting upon them? Values may potentially trigger a different outcome than heuristics and perhaps this reflects the amount of mental effort acting on them requires. Values and heuristics could possess different manners of processing information, but is that due to a difference in the level of effort? This is a question the literature has yet to answer.

Values Cued as Heuristics

Overall, values possess many of the same features as heuristics. Due to the similarities between their functioning, perhaps values can substitute for heuristics in ambiguous situations. The theory in question is testing this idea: if values and heuristics function in a similar way and possess many of the same qualities, how can values act as heuristics? If cued properly, how can values interfere with our intuitive heuristics? Instead, how can we use values to guide in our decision-making?

Yet unlike heuristics, values possess specific motivational goals. Research has even established exactly what these goals may be: "The evidence clearly supports the existence of the seven basic motivational domains [of values] we tested: enjoyment, achievement, restrictive conformity, security, pro-social, maturity, and self-direction." (Schwartz & Bilsky, 1987) Values have motivational domains, or goals, that are the driving force of the value. This may create some concern for the proposed theory regarding values acting as heuristics. Values are distinct from heuristics in that heuristics do not possess goals other than to guide everyday life processes, such as decision-making. This is unlike values, which possess social motivations or interactions. Research focuses on the goals behind values and the categorization of these goals (Schwartz & Bilsky, 1987; Schwartz, 1996; Schwartz, Cieciuch, Vecchione, Davidov, et al., 2012). Values consist of motivational goals, which can help categorize values. According to Schwartz (1996) there are ten motivational types of values: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. Each of these motivational categories possesses values. For example, the motivational goal *universalism* is defined by the values of broadmindedness, wisdom, social justice, equality, a world at peace, and unity with nature, among others.

These diverse goals are not something that heuristics also possess. The goals of values are different, where the goals for heuristics are all the same underlying goal, which is to assist in decision-making in an effortless manner. The motivation behind values and heuristics are different, while the process and end result seems to be similar.

Although there are differences between heuristics and values, they are more similar than they are different. Furthermore, they share another function. Researchers believe that values are "grounded in one or more of three universal requirements of human existence with which people

must cope: needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare needs of groups" (Schwartz, et al., 2012). When thinking critically about heuristics, we see that heuristics act in some of these ways as well. Heuristics guide us in social situations, help us with knowledge about the world, and guide in everyday life. In accordance with the Schwartz theory of values, heuristics act in these ways as well, which helps draw the conclusion that heuristics and values are distinct yet similar. As the research questions states, how can we cue values to interfere and replace existing heuristics?

Little research has been conducted to test this idea. Despite the small amount of literature on this topic, there is support for this idea (Lapsley & Hill, 2008; Huntsinger, Sinclair, Dunn, & Clore, 2010). Lapsley and Hill (2008) researched morals as heuristics and reported "individuals who display extraordinary moral commitments rarely report engaging in an extensive, decision-making process. Instead, they 'just knew' what was required of them, automatically as it were, without controlled processing, without the experience of filtering the decision through an explicit decision-making calculus." (Lapsley & Hill, 2008, p. 323) These findings support that morals, and perhaps even values, can be used to hinder intuitive heuristics that can be harmful.

Other research has been conducted on this topic, and more relevant to this study, this research used egalitarian values. Huntsinger, Sinclair, Dunn, and Clore (2010) reported in their findings "As predicted, when an egalitarian goal was made accessible, participants in positive moods displayed less stereotype activation than those in negative moods." (Huntsinger, Sinclair, Dunn, & Clore, 2010, p. 568) Although researchers here factored mood into their analysis, their results were impressive and can be useful for the purposes of the study presented here.

In this study, the goal is to prime heuristics or values to examine a potential influence they might have on implicit racial attitudes. Racial attitudes are susceptible to priming, as seen in previous research; although constructed with different designs, various studies have tested theories of priming effects on attitudes towards race (Abraham & Appiah, 2006; Verhaeghen, Aikman, & Gulick, 2011). These theories showed that priming altered perceptions of racial groups, most commonly in a negative way. Priming caused participants to think upon different associations for the racial groups, which changed their evaluations and perceptions of the groups. This same concept and theory is looked at further in this study.

The use of priming is important to this theory in two ways. First, by priming values, we examine how they interfere with intuitive heuristics to hopefully deter reporting of negative implicit attitudes. Second, by priming the inhibition of stereotyping in a control condition, we observe the dual process model pathways in action. It may be possible to shift from the heuristic pathway to the systematic pathway when primed accordingly. Using stereotypes should be quick and effortless, but if someone is specifically primed to inhibit the use of stereotypes, the time they take to assess a situation should take much longer.

To first examine this topic, a pilot study explored explicit stereotyping with a priming task of values, heuristics, and a control. The pilot study was conducted to assist us in furthering our knowledge of how values can act as heuristics in regarding explicit stereotyping. Participants were primed with a control, intuition, or values (such as equality). Following the paradigm of Esses and Zanna (1995), participants then listed their explicit feelings toward three ethnic groups: American, Chinese, and Arabic. They also assigned a valence rating to their assessment and wrote how generalizable the traits were. Mental exhaustion was assessed at the end of the study. The results of the pilot study show that while being primed with values does not

encourage less stereotyping, it does support treating all groups the same, when compared to the intuition or control conditions. Those who were primed with values did not distinguish between the three groups, but instead stereotyped them all similarly. Participants from the intuition and control conditions made larger distinctions between the three ethnic groups. Mental exhaustion was not found to have a significant effect.

This current study used a priming task of values, intuition, and a control, as the independent variable, and the dependent variable are the implicit attitudes participants report toward African-American and Caucasian males. This will be done by using the affect misattribution procedure (AMP). The AMP was created by Payne, Cheng, Govorun, and Stewart (2005) to measure implicit attitudes toward a particular group. The task has been shown to be reliable and valid in measuring implicit attitudes (Payne & Lundberg, 2014). The task functions by asking participants to view photos of real-life people and then Chinese pictographs. The two types of photos alternate throughout the entire task. Participants are asked to rate the pleasantness of the Chinese pictographs, but their ratings actually reflect their implicit attitudes toward the people in the pictures. For this study, race will be the topic of interest and, therefore, participants will view photos of African-American males and Caucasian males. Even though participants will be explicitly asked to rate the pleasantness of the Chinese pictographs, the paradigm has been show to tap into participants' implicit attitudes about the people in the photos.

Hypothesis 1: It is expected that participants will report generally more positive implicit attitudes in the AMP task when they have been primed with equality, compared to the intuition and stereotype inhibition conditions. This would support the theory that priming values will interfere with intuitive heuristics and reduce negative implicit attitudes.

Hypothesis 2: It is also expected that participants in the stereotype inhibition condition will have a higher reaction time to answer the questions in the AMP, compared to those in the equality or intuition conditions. This would support the theory that when we are facing a situation that can either follow the heuristic pathway or the systematic pathway, it is possible to shift from the heuristics pathway to the systematic pathway, but it is effortful and will take more time to process.

Method

The study was a 2 (AMP racial group: African-American, Caucasian) x 3 (mindset prime: equality, intuition, stereotype inhibition) mixed model design. Priming was a task that was varied between participants and AMP racial group was a task that was varied within participants.

The independent variables for this study were the priming condition. The conditions were evenly distributed and randomly assigned. The priming task across all three conditions was the same, but the participants wrote about a different topic in each condition. Participants answered the following question: “Here is a list of words. Please choose one of the words that in your opinion can be used best as a synonym for [equality/intuition/internet] and discuss why.” They were given a list of words that were similar to the priming word. These specific words in the list have been tested in the pilot study. Participants were given space to explain their answer.

The dependent variable for this study was the participants’ report of stereotyping through an implicit measure using the AMP. Participants were asked to rate the “visual pleasantness” of Chinese pictographs on a Likert scale of 1 (unpleasant) – 7 (pleasant). These pictures were shown on the computer screen for .5 of a second. In between the Chinese pictographs, real life photos of men (African-American and Caucasian) appeared. Participants were explicitly told to

ignore those photos and to only rate the pleasantness of the Chinese pictographs. They viewed approximately 60 photos of men. Experimenters calculated two averages for each participant's score: one for their ratings after seeing an African-American face and one for their ratings after seeing a Caucasian face. The researchers then compared the means using a mixed model ANOVA. The dependent variables will be affected by the independent variable (priming condition), which are shown via the mean ratings. Also, the computer timed how long it took the participants to answer the questions. After the AMP, participants answered a survey asking about their level of mental exhaustion.

Participant data was collected from an online data collection website named MTURK. The total number of participants that began the online survey was 166, but 52 were eliminated from the data. The most common reason for exclusion was incompletion (31 participants), followed by excluding African-Americans (17 participants), and one outlier. African-Americans were excluded from the data as one of the interests of the study was how participants may perceive African-Americans. The ethnicity breakdown was as follows: 101 Caucasian, 17 African-American, 8 Asian, 4 Hispanic, 2 American Indian, 1 other, and 33 missing. The age range was 19-71. Participant sex was not recorded.

Results

An analysis of variance (ANOVA) was run to compare the AMP scores in regards to the priming condition (equality, intuition, stereotype inhibition). A 2 (race) x 3 (priming) repeated measures ANOVA was conducted to see if values versus intuition versus stereotype inhibition would affect bias of pleasantness ratings in different ways.

First, the analysis revealed a significant main effect for the within factor of race: $F(1, 109) = 15.33$, $p = .001$, indicating that participants rated the pictographs preceding the Caucasian faces (M = 4.21, SD = .54) as more pleasant than the pictographs preceding the African-American faces (M = 3.98, SD = .79) regardless of priming**.**

Second, there was no main effect for the between factor of priming: $F(2, 109) = 2.95$, $p = .057$, indicating that participants did not rate the pictographs preceding the faces significantly different, regardless of skin color, depending on the priming: equality condition (M = 3.92, SD = .59), intuition condition (M = 4.12, SD = .56), or stereotype inhibition condition (M = 4.25, SD = .59).

The results showed a significant interaction between the factors of priming and race, $F(2, 109) = 3.98$, $p = .02$. To further examine this interaction, planned contrasts were conducted using the Bonferroni correction to compare the ratings of the pictographs preceding the African-American and Caucasian faces within the priming. This planned contrast shows that the pictographs preceding the African-American faces were rated as significantly less positive in the equality condition: (M = 3.69, SD = .82), $t(109) = 4.37$, $p < .001$ compared to the rating of the pictographs preceding the Caucasian faces (M = 4.15, SD = .59). This was not the case for the intuition condition: (M = 4.08, SD = .73), $t(109) = 0.82$, $p = .41$, compared to pictographs preceding the Caucasian faces (M = 4.17, SD = .48), or the stereotype inhibition condition: (M = 4.17, SD = .75), $t(109) = 1.54$, $p = .13$ compared to pictographs preceding the Caucasian faces (M = 4.33, SD = .53). These results can be seen in Figure 1.

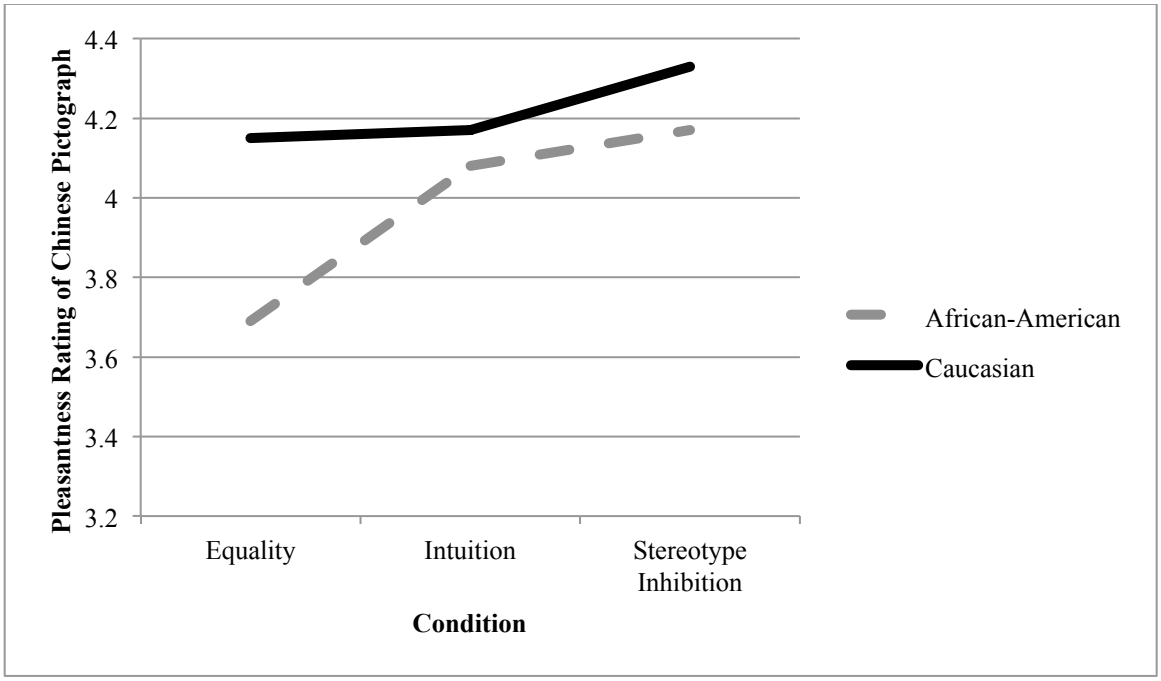

Figure 1. Interaction between the factors of priming and race.

A 2 (race) x 3 (priming) repeated measures ANOVA was conducted on the amount of time that passed before participants made a decision on rating the pictographs preceding the faces. There were no significant main effects, for the factors of race and priming: F (2, 110) = 2.17, p = .12. Participants took a similar amount of time to rate the pictographs preceding the African-American faces (M = 2.02, SD = .90) as Caucasian faces (M = 1.99, SD = .75). However, participants in the intuition condition took longer to make a decision (M = 2.19, SD = .91) than participants in the equality condition (M = 1.82, SD = .67) or the stereotype inhibition condition (M = 1.99, SD = .78), regardless of the ethnicity of the face. The interaction, however, was also non-significant: F (2, 110) = 2.25, p = .11.

Mental exhaustion was assessed with a one-way ANOVA to test if the mental exhaustion of participants varied by priming. The results were not significant: F (2, 110) = .327, p = .72. Mental exhaustion was the highest in the stereotype inhibition condition (M = 3.69, SD = 1.20),

followed by the intuition condition (M = 3.49, SD = 1.22), then the equality condition (M = 3.47, SD = 1.40).

Discussion

This study was conducted to test how values could act as heuristics and affect social cognition. The results show that values do, in fact, interfere with the use of heuristics but not in the predicted manner. Also, the results show that using values to interfere with heuristics does not slow down social cognition, which was predicted.

The first hypothesis stated that participants in either the intuition or stereotype inhibition condition would rate the pictographs before the African-Americans faces in the AMP as less pleasant than those in the equality condition. This hypothesis was not supported, as participants in the equality condition significantly rated the pictographs before the African-American faces as less pleasant than in the other conditions. This means they acted in the opposite way that was initially predicted.

The second hypothesis stated that that participants in the stereotype inhibition condition will have a higher reaction time to answer the questions in the AMP, compared to those in the equality or intuition conditions. In this regard, there were no significant results, however, the reaction times are the highest in the intuition condition. Participants in the intuition condition took longer to make a decision than participants in the other conditions, regardless of the ethnicity of the face. This trend was not in the predicted direction.

Values are similar to heuristics in that they both are automatic, unconscious, and learned. This was the basis for the present study and hypothesis. Our results are not consistent with the expectations derived from previous research and theory (Correll, Park, Judd, & Wittenbrink,

2002, Devine, 1989; Lapsley & Hill, 2008, Monteith, Ashburn-Nardo, Voils, & Czopp, 2002, Pelley, Cavlini, Spears, Reimers, et al., 2010). Participants who were exposed to the equality priming should have rated the pictographs before the African-American faces as more pleasant (due to the learned quality of values) and they should have reacted slower if they were exposed to the stereotype inhibition priming (due to the automatic and unconscious nature of values). While the present study does not contradict previous research, it did not display the application of values as a heuristic, neither in the way they scored in the AMP nor in their reaction times.

Limitations and Potential Explanations

There are potential explanations for the unexpected results in the data. While the AMP measures implicit attitudes, it is possible that participants were able to decipher the meaning behind the test. Participants may know what the AMP measures regardless of it being implicit, as this has been shown in previous research (Bar-Anan, & Nosek, 2012). To some degree, people attempt to regulate their bias and if they are aware of the meaning behind the test or if they believe they know what the test may be measuring, they may not feel the need to regulate their bias. In this study, participants were asked what they believed the meaning of the test to be and many of them wrote answers showing that, to a certain extent, they understood the true meaning of the AMP. One participant wrote, “Im not sure but probably something about race”, while another wrote, “Whether or not the ethnicities of the people in the pictures inluenced [sic] whether I thought the Chinese symbols were negative or positive.” Many participants wrote they “had no idea” what the meaning of the study was, but there were some participants who were able to decipher the meaning behind the test. It is possible they then regulated their biases and their knowledge of the study affected their choices in the study. Participants may have been consciously choosing answers based on what they thought the experimenter wanted them to say

or choose. This knowledge of the study could have affected their results and was not a true test of implicit attitudes.

Limitation: Priming

Since the AMP has generally been found to be reliable and a steady indicator of bias (Payne, Cheng, Govorun, & Stewart, 2005), the inconsistencies in the results with the hypothesis most likely lie with the priming aspect of the study. Equality was the value of interest, but has been shown to be subject to moral disagreement. Rai and Fiske (2011) define equality as a moral motive. They explain that there are four moral motives: unity, hierarchy, proportionality, and equality. Despite the universality of moral motives, the activation and the implementation of these moral motives are subject to cultural ideologies and individual differences. According to Rai and Fiske (2011), any action, even violence, can be construed as morally correct depending on social constructs. One example is honor killings: in certain cultures and in the proper context, murdering a family member is found to be acceptable by the group as a whole. This is an example of moral disagreement – values, such as equality, may be perceived differently in various societies and may require diverse modes of activation. While the present study only examined participants within the United States, it is possible participants' backgrounds were subject to moral disagreement, which means that the idea of equality as a value was not interpreted the same way across participants. People of diverse backgrounds may decipher the meaning of a word, in this case equality, differently. This may lead their interpretation of the word to affect their understanding and social cognition, which may lead them to process the priming prompt differently.

Another potential issue with the priming of equality as a value was that it was not subtle enough. The prompt may have been too explicit and obvious to participants, affecting their cognitive processes. Blatant priming has been shown to create effects that are very different from subtle priming, occasionally generating the opposite of the desired effect (Higgins, 1996; Lombardi, Higgins, & Bargh, 1987; Martin, 1986; Shih, Ambady, Richeson, Fujita, & Gray, 2002). The blatant transparency of the priming task could have affected the study adversely, causing participants to be triggered by the priming task in an undesired manner and responding to the AMP in a less than virtuous manner.

Potential Explanation: Moral Licensing

The transparency of the priming may have lead participants to rely on moral licensing, which is an alternative explanation for why the participants reacted in this manner. The theory of moral licensing stems from moral cleansing (Brañas-Garza, Bucheli, Espinosa, & García-Muñoz, 2013): Moral cleansing is the attempt to cleanse the self-image because of something they may have previously done that is considered immoral or below typical standards. People explicitly make a decision or act in a way that would be considered unethical or immoral, but then attempt to compensate for those actions by proceeding in an especially moral or ethical manner shortly after. For example, moral cleansing has been observed in a variety of settings, such as organ donations (Tetlock, Kristel, Elson, Green, & Lerner, 2000) and retelling an unethical story (Zhong & Liljenquist, 2006). Moral cleansing demonstrates that when people feel they have acted in an immoral manner, they compensate in their future actions.

The moral licensing framework is an expansion of moral cleansing and explains that moral cleansing is just one aspect of moral reparations. Not only do people compensate their

immoral behavior with moral behavior, but also the reverse is possible, and people unconsciously act immorally after having just acted in a moral way. People let their guard down and do not regulate their biases. It it possible to control and regulate biases (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002; Gonsalkorale, Sherman, & Klauer, 2006; Legault, Green-Demers, Grant, & Chung, 2007), but in instances of moral licensing, people do not attempt to maintain that regulation and they allow their impulsive biases to take control. In the present study, participants compensated their actions, but they did so in the opposite manner of moral cleansing. This is a potential example of moral licensing (Sachdeva, Iliev, & Medin, 2009).

Therefore, moral self-licensing can potentially explain the results of the present study. Participants were primed with values and equality, hence bringing upon ideas of morality and positivity, but instead of continuing in the direction of morality, they unconsciously felt licensed to act immorally. Having elaborated on the value of equality, people might have felt like they fulfilled a high standard of equality already and therefore might not have felt the need to regulate stereotyping tendencies when participating in the AMP. Moral self-licensing and moral cleansing have both been shown to make sense of unpredictable behavior patterns (Branas-Garza, Bucheli, Espinosa, & Garcia-Munoz, 2012).

Further evidence to aid in this speculation of moral licensing is what participants wrote in the priming task of the study. One condition of the priming task asked participants to “choose one of the words that in your opinion can be used best as a synonym for equality and discuss why”. Most people chose the word broad-mindedness and wrote answers such as this: “If you treat people with equality, you are equally helpful to them no matter who they are. Regardless of their background or the differences between you and them, you are kind and helpful to that person as if they were yourself. That is equality.” Answers such as this support the idea of moral

licensing because the participants clearly understood the concept of equality and they value its importance. It sounds as though they believe in equality and broad mindedness, but when they are asked to, in a sense "act" on it in the AMP, they do not. The priming of equality and broad mindedness made them unconsciously feel moral and virtuous, lending an opportunity to bypass the regulation of their biases in the following task.

Theoretical Implications

Research states that in most cases, there is a logical, thoughtful way to interpret situations or there is the use of heuristics (Eagly & Chaiken, 1993; Kahneman, 2003; Kruglanski & Gigerenzer, 2011). Heuristics consist of mental shortcuts and are effortless, unconscious, and automatic. These findings further examined the specific circumstances that heuristics are not only used to make decisions, but how these heuristics can be altered. The theoretical implications of these findings are consistent with inhibiting and altering the use of heuristics. Despite the ingrained nature of heuristics, they are malleable and compliant to their surroundings. While this study did not correctly predict the manner in which priming would affect implicit attitudes, perceptions were still altered, showing that heuristics can be influenced in certain settings. This is consistent with Prati, Vasiljevic, Crisp and Rubini (2015), Hutter, Crisp, Humphreys, Waters, and Moffitt (2009), and Crisp and Turner (2011). These researchers displayed that priming can alter heuristics, just as was found in the present study.

Practical Implications and Conclusions

If social cognition processes such as heuristics can be manipulated, more research must be conducted on the specific circumstances in which this manipulation can happen. There is research supporting our hypothesis, that values will alter the social cognitive processes in a way

that encourages people to rely on heuristics (Correll, Park, Judd, & Wittenbrink, 2002, Devine, 1989; Lapsley & Hill, 2008, Monteith, Ashburn-Nardo, Voils, & Czopp, 2002, Pelley, Cavlini, Spears, Reimers, et al., 2010), but our results suggest an instance of moral licensing. There are no specific frameworks for when one pathway, such as moral licensing, will take precedent over another. This specificity is needed to understand how to reduce stereotyping. If research can identify the circumstances in which social cognitive processes and heuristics can be altered, we can then explore the factors that lead people to rely on stereotypes. Even further, we can examine how values can interfere in these processes. Future directions for research on social cognition and heuristics can hopefully assess the ambiguity.

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