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Do Spontaneous Trait Inferences Influence Behavioral Intentions?

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Abstract

Character traits are spontaneously inferred from observing people's behavior. This inference process is called a spontaneous trait inference. Although spontaneous trait inference effects are robust and well replicated, little research has examined what perceivers do with the inferences they make. A pilot study and two experiments examined whether spontaneous trait inferences led to differences in two behavioral intentions: friending and aggression. The savings in relearning paradigm was used to measure spontaneous trait inferences. Participants were exposed to trait implying descriptions or neutral descriptions of targets. After a filler task, participants completed a social media friending questionnaire and a modified voodoo doll task. They then learned target-trait pairings, completed a filler task, and completed a cued recall measure for the target-trait pairings. Spontaneous trait inferences were found across all experiments. Participants recalled implied traits more than control traits. As predicted, there was consistent support that spontaneous trait inferences led to differences in behavioral intentions. When participants made positive trait inferences, they were more likely to friend those targets on social media (Pilot Study & Experiment 1). Participants were also less likely to friend targets they made negative trait inferences of (Experiment 2). When participants made negative trait inferences, they were more likely to aggress toward those targets by administering "bad shots of karma" in a modified voodoo doll task (all experiments), especially when those targets performed behaviors directed toward the perceiver (Experiment 2). Implications of these results are discussed in the context of stereotype formation and extensions to discrimination.

Keywords: spontaneous trait inference, behavioral intentions, savings in relearning

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

Imagine you are a college freshman and attending your first class. In the middle of the lecture, your professor asks you to pair up with a partner for an activity. When you look around the room, you spot someone in front of you playing games on their laptop and another person annotating what appears to be their detailed notes of the professor's lecture. You infer that one student is distracted and the other is attentive, and you quickly choose to partner up with the attentive classmate. Although it may be an obvious choice, little research has examined how spontaneous trait inferences, such as assuming the gamer is distracted, influence our subsequent behavior.

Recently, Jim Uleman—one of the pioneering spontaneous trait inference researchers—stated "spontaneous inferences seem not to be for doing anything; they simply occur unintentionally and without the perceiver's awareness" (Uleman, 2022, pg 3). Although spontaneous trait inferences may occur without awareness, this does not mean that they simply exist; they have the potential to function like other types of spontaneous heuristics that influence our behavior (e.g. stereotypes). In this dissertation, I investigated if or how spontaneous trait inferences influence subsequent behavioral decisions.

SPONTANEOUS TRAIT INFERENCES

Spontaneous trait inferences (STIs) occur when we spontaneously and unintentionally infer character traits about others based on their behavior (Carlston & Skowronski, 1994; Todorov & Uleman, 2002; Uleman et al, 1996; Winter & Uleman, 1984). In the example above, two STIs were made: the gamer being inferred as distracted and the notetaker being inferred as attentive. Winter and Uleman (1984) first measured STIs in an experiment where participants were presented with trait implying descriptions. Later, participants were shown a trait cue,

semantic cue, or no cue and were asked to recall the sentence that aligned with the cue. Results showed that participants recalled the sentences the most when presented with a trait cue. For example, participants were shown the sentence "The librarian carries the old woman's groceries across the street". The trait cue that aligned with this sentence was "helpful" and the semantic cue that aligned with this sentence was "books". Both words serve as a memory retrieval cue for the behavior because the librarian's behavior was helpful and books are associated with librarians. However, trait cues, like "helpful", served as stronger retrieval cues, indicating that participants formed a spontaneous trait inference about the librarian. Since this seminal work, researchers have developed different methodologies to measure STIs. One of the most reliable methods to examine STIs is the savings in relearning paradigm (Bott et al., 2021).

Carlston and Skowronski (1994) were the first to implement a savings in relearning paradigm to measure STIs. The savings in relearning paradigm is based on Ebbinghaus' (1885/1964) principles that state learning requires repeated exposure and practice. Ebbinghaus demonstrated this by having participants learn word pairs to a specific degree of accuracy. After a period of time, participants were exposed to the word pairs again and were asked to relearn the provided information. Ebbinghaus' results showed that participants demonstrated a savings effect by taking less trials to relearn the word pairs during subsequent relearning sessions. Carlston and Skowronski (1994) modified Ebbinhaus' methodologies to measure the spontaneity of trait inferences in a series of experiments. Participants were first exposed to target-behavior pairings. Critical behaviors implied character traits about the person (e.g. "Joe watched Netflix instead of working on the project due at midnight" implies Joe is "lazy"). After the exposure phase, participants completed a confusion task in an attempt to cloud any explicit memory for the behaviors presented during the exposure phase. Next, participants completed a learning phase

where they were tasked with memorizing target-trait pairings. In relearning trials, the target-trait pairings were trait words implied by the behaviors shown during the exposure phase (e.g. "Joe-Lazy"). Control trials included novel target-trait pairings. Participants then completed a filler task, followed by a cued recall measure where they were shown the target and were asked to write the trait word presented with the target during the learning phase. Results showed a savings effect where participants recalled more trait words for the targets who were paired with trait implying sentences during the exposure phase. These results demonstrate that participants initially formed STIs about the targets during the exposure phase and the learning phase served as a relearning session for those inferred traits, thus leading to memory advantages in the cued recall measure for the targets they learned about in the exposure phase. The savings in relearning paradigm has since become a popular metric for STIs (e.g. Brown & Bassili, 2002; Crawford et al., 2013) for its high reliability (Bott et al., 2021) and ability to detect STI formation under various instructions (e.g. impression formation, no instruction, familiarization with material; Carlston et al., 1995). Given its reproducibility, the current experiments employed the savings in relearning paradigm to assess the understudied area of whether STIs influence subsequent behaviors.

Although little research has examined whether STIs influence perceiver behavior, there is evidence that illustrates how STIs aid in impression formation. STIs do not simply reflect descriptions of behavior, they are bound to the target who performs the behavior (Todorov & Uleman, 2002; Todorov & Uleman, 2004). Thus, playing videogames during a lecture does not only describe the word "distracted"; the person who is playing the games is thought of as being a distracted person. Olcaysoy Okten and Moskowitz (2020) recently extended trait-target binding findings by examining whether STIs update across time. For their study, participants formed

STIs then came back to the lab after a period of time for an update on the person. During the update period, participants were presented with information that was consistent or contradictory to their initial impression of the person. Results showed that STIs function in an additive manner where contradictory updates led to the formation of new STIs rather than overriding initial impressions. For example, if the gamer later waves at you before the lecture starts you might infer that they are also friendly. The friendly inference you make of the gamer does not erase your initial inference that they are distracted, but instead, helps you form a more holistic representation of the gamer.

Mental representations of people are important for explaining people's behavior. The fundamental attribution error (Ross, 1977), for instance, shows in a well replicable fashion that in Western cultures, dispositional explanations (i.e. trait inferences) are overemphasized in explaining other's behavior while situational factors are underemphasized. Thus, we are more likely to say "Oliver failed the test" because he is "dumb" rather than because he did not have time to study. Research on STIs support these findings. Although STIs co-occur with spontaneous situational inferences (Ham & Vonk, 2003), cultural differences moderate the strength of each inference, where individualistic people form stronger STIs and collectivistic people form stronger spontaneous situational inferences (Na & Kitayama, 2011; Shimizu et al., 2017; Zárate et al., 2001).

STIs are not always formed equally. Individual differences can moderate the strength of STI formation. As mentioned above, culture is one perceiver characteristic that influences the strength of STIs (Na & Kitayama, 2011; Shimizu et al., 2017; Zárate et al., 2001), but other perceiver characteristics should also strengthen STIs. To date, little research has examined how perceiver characteristics outside of culture, influence STIs. One study shows that those high in

need for structure have been shown to form stronger trait inferences relative to those low in need for structure (Moskowitz, 1993). Another shows that people high in aggressive experiences make stronger trait inferences for hostile behaviors (Zelli et al., 1996). Moskowitz (1993) and Zelli et al's (1996) work suggests that perceiver characteristics lead to differences in how mental representations of others are encoded.

One characteristic that might influence the strength of spontaneous trait inferences is how self-relevant information is for perceivers. Perceivers prioritize encoding information that is self-relevant. This bias is referred to as the self-reference effect (Rogers et al., 1977). Rogers et al (1977) were among the first to experimentally examine the self-reference bias by measuring recall for traits under different encoding circumstances. Participants were shown a trait word and were asked to answer different cue questions: whether the font size was larger, the word rhymed with another listed word, the word was a synonym for another word, or the word described them (i.e. self-reference). Results showed that participants had the greatest recall for traits that they said were descriptive of themselves. This was thus, some of the first empirical work to shows that self-relevant information is better encoded; and since this seminal work, the self-relevance effect has been well replicated (Cunningham & Turk, 2017; Humphreys & Sui, 2016; Sui & Humphreys, 2012; Symons & Johnson, 1997). The current experiments aim to extend this work by exploring whether participants are more likely to form spontaneous trait inferences for self-relevant behavior in the form of trait judgments ("me" vs "not me") and whether target behaviors are directed toward the self (e.g. "gave me directions") or other people (e.g. "gave the freshman directions").

STIs and Behavior

Our mental representations of people are also useful in helping perceivers predict people's future behavior (McCarthy & Skowronski, 2011; Newman, 1996; Todorov et al., 2005). In one study, Todorov and colleagues examined how inferences about competence impact people's choices for who to vote into office. Participants were shown pictures of political candidates and were asked to rate each person's level of competence. Results showed that competence inferences were correlated with the likelihood of being voted into office, even though these inferences were based solely on candidate photos. Candidates who were rated higher on competence were more likely to be voted into office than those rated lower on competence. McCarthy and Skowronski (2011) extended Todorov et al.'s (2005) work by directly testing whether STIs can be used to predict people's future behavior. Across three experiments, participants formed STIs about targets by reading behavioral descriptions that implied character traits about the targets. After testing for STI formation, participants were also given a list of new behaviors. Participants then paired these new behaviors with the target they believed would be likely to perform the new behavior. Results consistently demonstrated that participants matched targets with behaviors that were consistent with their initial STI, even when the specific initial behavior was forgotten.

Thus far, research has focused on the utility of STIs as an impression formation tool that is useful for understanding other people's behavior. Only one experiment (Schneid et al., 2015 Experiment 3) has examined the utility of spontaneous inferences for perceiver's behavior. Schneid and colleagues employed a behavior prediction task where participants were shown targets that were paired with trait implying behaviors. Later, participants rated the likelihood of targets completing other behaviors that either matched or contradicted their initial impression.

Participants were also asked to imagine they were at a social event and rate their likelihood of approaching each target at the event. Results replicated and extended previous STI effects. Participants rated new behaviors that were consistent with their initial impressions as probable. Additionally, participants were more likely to approach targets who they made a positive impression of. Thus, participants' trait inferences informed their overall evaluations of the targets, which led to differences in behavior.

IMPLICIT ASSOCIATIONS INFLUENCE BEHAVIOR

Although little work has examined how spontaneous trait inferences influence perceiver behavior, some research investigates how other forms of unconscious impressions, such as stereotypes and implicit attitudes, influence subsequent behavior (Amodio & Devine, 2006; Towles-Schwen & Fazio, 2006). Implicit stereotyping and implicit race bias reflect unconscious cognitive and evaluative processes, respectively, and thus lead to differences in behavior. For example, Amodio and Devine (2006) had participants complete a race-stereotype implicit associations test and/or a race-bias implicit associations test for Black people. An implicit associations test measures the strength of associations between target groups with stereotypes or evaluations where ease of response is theoretically reflective of stronger associations between the target group and its stereotypes or evaluation (Greenwald et al., 1998). Thus, Amodio and Devine's implicit associations tests measured the extent to which participants had strong associations for stereotypes about Black people (e.g. athletic, rhythmic, etc.) and the strength of negative evaluations toward Black people. After the implicit associations tests, participants formed an impression of a Black student based on a writing sample and reported their likelihood of befriending the student. Results showed that race-stereotyping implicit associations test scores were predictive of higher stereotypic ratings of the Black student. For the race-bias implicit

associations test, higher scores were associated with less desire to befriend the Black student. Thus, the trait-based implicit associations test reflected differences in behaviors that are instrumental for forming impressions and the evaluative-based implicit associations test reflected differences in approach/avoidant behaviors.

Towles-Schwen and Fazio (2006) showed similar results where implicit racial attitudes predicted the success of interracial roommate relationships. Participants were randomly assigned to have a same race or different race roommate for the semester in university housing. At the beginning of the semester, implicit racial attitudes were assessed. Fifteen weeks later, participants returned for a second session where they rated their satisfaction with their roommate and whether or not the randomly assigned roommates chose to continue living together. Results showed that White participants with negative racial attitudes reported lower quality relationships with their Black roommate and were more likely to dissolve their living situation sooner than White participants with roommates of the same race . Thus, implicit attitudes not only predicted relationship satisfaction but also whether participants sought out new living situations.

The work presented above demonstrates differences in behavior based on implicit impressions. Additionally, Schneid and colleagues (2015) show that STIs co-occur or lead to evaluative inferences about targets which then produce differences in approach and avoidant behavior. The current work builds on these results by examining two types of behavioral inclinations: one that measures approach behaviors and one that measures avoidant behaviors.

BEHAVIORAL INTENTIONS

At its core, behavior can be defined in terms of approach and avoidance. Approach behaviors are characterized by the motivation to achieve desired outcomes or engage with positive stimuli while avoidant behavior reflects the motivation to withdraw or abstain from

negative outcomes or stimuli (Eder et al., 2013; Elliot 1999). Some popular measures of approach and avoidance have participants look at a stimulus on a computer screen. Participants then indicate whether they want to approach the stimulus by pushing the joystick toward the monitor or avoid the stimulus by pulling the joystick toward the body (e.g. Chen & Bargh, 1999). Other variants of approach avoidance measures have participants move a manikin upwards or downwards on a computer screen by pressing corresponding keys on the keyboard (De Houwer et al. 2001). Participants are required to press the "up" or "down" key three times per stimulus, so the manikin appears to be walking toward or away from the stimulus. Krieglmeyer and Deutsch (2010) compared the reliability of joystick tasks and the manikin task. Results showed that reliability for the joystick and manikin task were low when intentional evaluation of the stimuli was not required. Because the proposed work examines spontaneous inferences, which are unintentional evaluations, different approach and avoidance measures that motivate participants to evaluate targets will be used.

Social Approach

Thus far, the only behavioral intentions measure that has been used in relation to STIs is a measure of social approach (Schneid et al., 2015). Schneid and colleagues (2015) first had participants form STIs by reading positive and negative trait implying descriptions about targets. After assessing STIs, Schneid and colleagues asked participants to imagine they were at a social event. The participants' goal for the evening was to approach about half of the people at the event. Participants then rated the likelihood of approaching each target. Participants were more likely to approach targets paired with positive descriptions than negative. This methodology was modified for the proposed experiments by using a social media cover story rather than social event cover story. According to the PEW Research Center (2021), over 84% of adults aged 18-

29 report using at least one social media platform. Of all social media platforms, Facebook and Instagram were two of the most popular, with around 70% of respondents aged 18-29 reporting their use. Facebook and Instagram are relevant for the proposed experiments because they both allow users to friend and follow others. Friending is the act of accepting or rejecting a request from another user while following involves initiating a friend request. Friending and following are essential networking behaviors that have been linked to building social capital and positive psychological wellbeing (Chen & Li, 2017; Wei & Lo, 2006). Because friending and following are commonplace behaviors in daily life, the current experiments utilized this framework as an approach measure.

Voodoo Doll Task

To assess avoidant-oriented behavioral intentions, the voodoo doll task was used in the current work. The voodoo doll task is a valid measure for aggressive inclinations (DeWall et al., 2013; McCarthy et al., 2016). For the task, participants are asked to imagine a specific person. They are then presented with a doll and are asked to put pins into the doll. Research demonstrates that participants transfer characteristics of the person in mind to the doll and the pins administered to the doll represent intentions to harm the target person (DeWall et al., 2013). The voodoo doll task also correlates with other measures of aggressive inclinations such as the hot sauce paradigm and the Taylor aggression paradigm (DeWall et al., 2013).

The hot sauce paradigm (Lieberman et al., 1999) involves participants preparing food for another person. Participants are provided with a food preference sheet for the target that indicates the person's preference for spicy food. The amount of hot sauce administered to people who have a low spice tolerance is used as a metric for aggression. The Taylor aggression paradigm (Taylor, 1967) involves participants playing a competitive game with another person. The winner

of the game is prompted to administer loud noises or shocks to their opponent with louder noise and more intense shocks measuring more aggressive intentions. For both measures, participants typically interact with someone they know. Although the hot sauce and Taylor aggression paradigms are more commonly used, they are not ideal for the proposed studies because they are typically used to measure intentions toward one specific person and are more difficult to administer. Thus, I modified the voodoo doll task such that participants were able to put pins into multiple targets.

EXPERIMENTAL OVERVIEW, HYPOTHESES, AND PREDICTIONS

A pilot study and two experiments tested whether spontaneous trait inferences influence behavioral intentions. The pilot study was implemented to ensure that instructions for the behavioral intentions measures produced adequate response variability. Across all experiments, participants completed a modified savings in relearning paradigm. First, they were exposed to target-sentence pairings where sentences either implied traits about the target or did not reliably imply traits about the target. Participants then completed a confusion task followed by the behavioral intentions measures. Afterward, participants were asked to learn target-trait pairings where traits were either implied by targets' behavior or not. Following a filler task, participants then saw an image of a target and were asked to recall the trait paired with them from earlier. I hypothesized that participants would spontaneously infer traits about targets from their behavior. I predicted that participants would be more accurate at recalling implied traits relative to control traits. Because previous work has shown a negativity bias with STIs (Carlston & Skowronski, 2005; Shimizu, 2012; Shimizu, 2017), I also predicted that recall accuracy would be greater for negative traits, especially for negative traits that were implied by the target's behavior.

I also hypothesized that STIs would lead to differences in the participant's behavioral intentions. Specifically, I predicted that when participants formed positive trait inferences, they would be more willing to friend those people on social media compared to positive targets they did not form inferences of. I also predicted that when participants made negative inferences, they would be more willing to aggress toward those targets by administering more "shots of bad karma" in a modified voodoo doll task.

Chapter 2: Pilot Study

METHOD

Participants

Fifty-one participants from Cloud Research were recruited for the pilot study. Participants were eligible for the study if they lived in the United States, were between the ages of 18 and 29[1], and had a hit rate of at least 85%. Cloud Research automatically rerouted participants to the end of the survey if they had identical IP addresses to those who already completed the survey. Participants were compensated $2 for their time. In total, 31 identified as White, 8 identified as Black, 5 identified as Asian, 3 identified as multiracial, and 4 identified as Other. Participants' mean age was 25.35 (*SD* = 4.90). Twenty-five participants identified as female, 24 identified as male, 1 person identified as non-binary, and 1 person preferred not to respond. A sensitivity power analysis (G*Power, ANOVA: Repeated measures, within factors, number of groups = 1, number of measurements = 2) for the main effect of Trial Type indicated that the final sample size (*N* = 51) provided 80% power for the detection of a small to medium effect size (f^2 = .20, *d* = .40).

Design

A 2(Trial Type: Relearning vs Control) x 2(Valence: Positive vs Negative) x 2(Target Gender: Male vs Female) within subjects design was used. Twenty-eight trials were shown to participants (12 relearning and 16 control). Valence and target gender were distributed equally across trial type (e.g. 3 positive male relearning, 3 positive female relearning, 3 negative male relearning, 3 negative female relearning). Recall accuracy was used as a metric for spontaneous trait inferences. Friending on social media was used as a metric for intentions to approach while

[1] This age range was used to reflect common participant ages from the UTEP participant pool.

shots of bad karma were used as a metric for intentions to harm/avoid. Target gender was included in analyses although power analyses did not account for target gender effects and there were no *a priori* predictions.

Materials

Exposure Phase

In total, participants were shown 28 trials (See Appendix A). Each trial contained a picture of a target and a behavioral description. For 12 trials, the description was a behavior that implied a trait word (e.g. "opening the door for the man with the giant box" implied the target was helpful). These behaviors were previously tested for their valence and implied trait alignment (See Appendix B). The other 16 trials described a behavior that did not clearly imply a given trait (see Lee et al., 2017). Photos of White identifying targets (14 male, 14 female) from the Chicago Face Database (Ma et al., 2015) were used. Trials were equally distributed across valence and target gender. Each trial was displayed for 10 seconds.

Confusion Task

In attempt to make it difficult for participants to explicitly recall the target-description pairings shown in the exposure phase, a confusion task was administered. For the confusion task, participants were presented with descriptions of two people. Their task was to select the person they would like to get to know more. Descriptions mimicked the sentences shown in the exposure phase such that they described behaviors that the targets recently performed. Half of the behaviors implied traits about the target. In total, participants completed 30 trials.

Behavioral Intentions Measures

Social Media Friending. Participants were told to imagine they were on their social media account (See Appendix C). Their task was to decide whether they would accept friend

requests and offer follow requests to each person they saw. Each target from the exposure phase was shown to participants. For each target, participants indicated whether they would confirm or delete a friend request from the person. They also indicated whether they would offer a follow request or delete the person. The correlation between acceptances and follows were high (r = .88), so these items were aggregated across trial type, valence, and target gender.

Voodoo Doll Task. The voodoo doll task is a valid measure of aggressive intentions (DeWall et al., 2013; McCarthy et al., 2016). Usually, the task involves asking participants to envision a person of interest and administer pins to that person via the doll. The number of pins indicate intentions to harm where more pins equate to increased harm. In the current study, participants made first impressions of the targets they were exposed to. Because it is unlikely that participants would want to punish those who they have shallow impressions of, the instructions for the voodoo doll task were modified (See Appendix D). Participants were told that they were going to play a game of cosmic karma. For each question, they would be presented with two people. Their task was to "restore cosmic balance in the universe" by administering 5 shots of bad karma between the two people on the screen. Bad karma should be delivered to people they felt were undeserving of being rewarded in the future or to people who needed to be prevented from behaving badly again in the future. For each question, a control target and a relearning target were shown. When participants clicked on the target's body, they were shown where the shot of bad karma was administered. Targets were matched on gender and valence per question (e.g. positive control female vs positive relearning female; positive control male vs positive relearning male). Control targets and relearning targets were counterbalanced such that for half of the questions, control targets were on the right side of the screen while relearning targets were on the left side and for the other half of questions, control targets were on the left side of the

screen while relearning targets were on the right side. The average number of bad karma shots to relearning targets was computed across valence and target gender. Responses to control targets were not aggregated because shots administered to control targets were dependent on shots administered to relearning targets (e.g. if 2 shots were given to the control target, 3 were given to the relearning target).

Learning Phase

For the learning phase, participants were shown target-trait pairings and were instructed to memorize the information presented because they would be tested on it later in the study. In total, participants were shown 28 trials: 12 relearning and 16 control. For relearning trials, the trait paired with the target was implied by the behavioral sentence that was shown during the exposure phase. Traits for control trials were matched on the valence of the target's behavior from the exposure phase. Target-trait pairings were displayed for 6 seconds.

Filler Task

To control for potential recency effects, participants completed a filler task after the learning phase. Participants completed a series of "me" or "not me" judgements for a list of 30 traits. Twenty-eight of the traits were those presented during the learning phase. Participants were asked to complete these judgments in 4 minutes.

Cued Recall

The photos shown during the learning phase were presented to participants in a random order. For each picture, participants were asked to type in the word that was paired with the target during the learning phase. Participants were instructed to provide their best guess if they did not remember the word.

Two research assistants coded responses to the cued recall task as correct (1) or incorrect (0). Research assistants were instructed to include obvious misspellings (e.g. samrt for the correct answer of "smart") and synonyms (e.g. funny for the correct answer of "humorous") as correct. Cohen's kappa (Cohen, 1960) was used as a metric for interrater agreement. Agreement was high among the two raters, K = .90 [lower estimate = .89, upper estimate = .93]. A third research assistant was asked to code responses where the two initial raters disagreed.

Procedure

The study was programmed on Qualtrics and administered online through Cloud Research. Participants first provided consent. Those who chose to participate were then asked to provide demographic information. After demographics, participants completed each phase of the savings in relearning paradigm (See Figure 1) in the following order: exposure phase, confusion task, behavioral intention measures, learning phase, filler task, and cued recall. The presentation of the behavioral intention measures was randomized by participant. After completing the savings in relearning paradigm, participants were thanked for their time, compensated, and provided with the researcher's contact information.

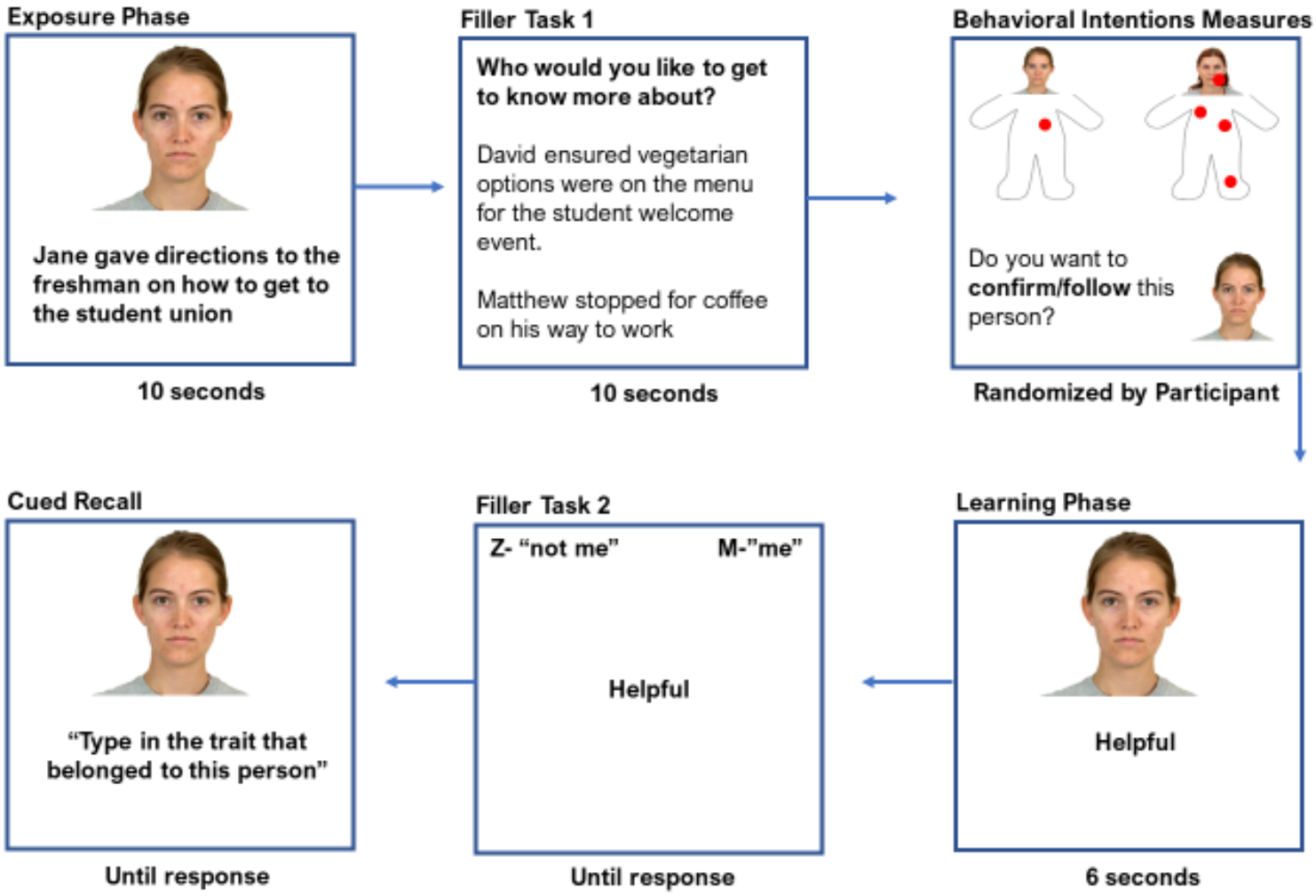

Figure 1: General Overview of the Savings in Relearning Task

RESULTS

Analytic Plan

The goal of the pilot study was to determine if the instructions for the dependent measures produced adequate response variability. To test this, evidence of spontaneous trait inferences were investigated by submitting the data to a2(Trial Type: Relearning vs Control) x 2(Valence: Positive vs Negative) x 2(Target Gender: Male vs Female) within subjects ANPVA for recall accuracy. Once spontaneous trait inference effects were verified, the behavioral intentions measures were used as outcome variables.. Shots of karma were analyzed for only relearning trials because responses on this measure were dependent by trial type (e.g. if the relearning target received 4 shots, the control target received 1). Response variability would be evident if means differed across trial type and valence for the social media measure and if means differed across valence for relearning trials on the voodoo doll task.

Initially, "me" vs "not me" judgments were going to be included in the design for secondary analyses. These analyses were not conducted because of a lack of variability in responses from participants. Responses on the me/not me task were biased where the participants reported positive traits as being descriptive of themselves often (84.31% of all responses) while negative traits were seldom categorized as being descriptive of themselves (24.84% of all responses)[2]. Due to this response discrepancy, there were too many missing data points to analyze a 2(Trial Type: Relearning vs Control) x 2(Valence: Positive vs Negative) x 2(Trait Alignment: Me vs Not Me) design. Thus, trait alignment (me vs not me) is not further discussed as a predictor.

[2] The same pattern of responses were found in Experiment 1 (87.27% self-described positive traits and 39.82% self-described negative traits) and Experiment 2 (86.40% self-described positive traits and 35.70% negative traits).

Cued Recall

The main effect of Trial Type was significant, $F(1, 50) = 36.12$, $p < .001$, $\eta^2_p = .419$. As predicted, participants recalled relearning traits ($M = .33$, $SD = .24$) more than control traits ($M = .21$, $SD = .21$). Thus, spontaneous trait inferences were found. Participants were more accurate at recalling traits implied by the target's behavior relative to control traits that were not implied by the target's behavior. There was also a significant main effect of valence, $F(1, 50) = 11.55$, $p = .001$, $\eta^2_p = .188$. Participants recalled negative traits ($M = .31$, $SD = .24$) more accurately than positive traits ($M = .24$, $SD = .21$). There was also a significant interaction between target gender and valence, $F(1, 50) = 10.77$, $p = .002$, $\eta^2_p = .177$. Participants were more accurate at recalling negative traits paired with female targets ($M = .36$, $SD = .28$) compared to negative traits paired with male targets ($M = .26$, $SD = .25$), $F(1, 50) = 11.66$, $p = .001$, $\eta^2_p = .189$. There were no differences in recall accuracy for positive traits paired with female targets *(*$M = .22$, $SD = .23$) and positive traits paired with male targets ($M = .25$, $SD = .25$), $F(1, 50) = 1.68$, $p = .200$, $\eta^2_p = .033$. All other effects were non-significant (See Table 1).

Table 1: ANOVA results for Recall Accuracy in the Pilot Study

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Trial Type	1	50	36.12	<.001***	.419
Valence	1	50	11.55	.001**	.188
Target Gender	1	50	1.76	.191	.034
Trial Type x Valence	1	50	0.00	.973	.000
Trial Type x Target Gender	1	50	0.06	.803	.001
Valence x Target Gender	1	50	10.77	.002**	.177
Trial Type x Valence x Target Gender	1	50	0.06	.814	.001

Note. ** $p < .01$, *** $p < .001$

Social Media Friending

Because there was evidence of spontaneous trait inferences, the social media measure was used as an outcome variable. There was a significant main effect of target gender, $F(1,50) = 7.31$, $p = .009$, $\eta^2_p = .128$. Participants friended female targets ($M = .29$, $SD = .22$) more than male targets ($M = .26$, $SD = .23$). As predicted, there was a significant interaction between trial type and valence, $F(1, 50) = 11.51$, $p = .001$, $\eta^2_p = .187$. Simple effects by valence were computed. As predicted, participants friended positive relearning targets ($M = .45$, $SD = .30$) significantly more than positive control targets ($M = .35$, $SD = .25$), $F(1, 50) = 11.10$, $p = .002$, $\eta^2_p = .182$. There was also a marginal effect where negative relearning targets ($M = .39$, $SD = .27$) were friended less than negative control targets ($M = .45$, $SD = .28$), $F(1, 50) = 3.52$, $p = .067$, $\eta^2_p = .066$. All other effects are listed in Table 2.

Table 2: Social Media Friending ANOVA results for the Pilot Study

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Trial Type	1	50	1.17	.285	.023
Valence	1	50	0.53	.469	.010
Target Gender	1	50	7.31	.009**	.128
Trial Type x Valence	1	50	11.51	.001**	.187
Trial Type x Target Gender	1	50	3.11	.084	.059
Valence x Target Gender	1	50	5.22	.027*	.095
Trial Type x Valence x Target Gender	1	50	1.84	.181	.035

Note. * $p < .05$, ** $p < .01$

Bad Karma Shots

As predicted, there was a significant main effect of Valence where negative targets (M = 1.63, SD = .46) earned more shots of bad karma than positive targets (M = 1.31, SD = .43), $F(1, 50) = 17.02$, $p < .001$, $\eta^2_p = .254$. The main effect of target gender was non-significant, $F(1, 50) = 0.59$, $p = .446$, $\eta^2_p = .012$. However, there was a significant interaction between Valence and target gender, $F(1, 50) = 10.20$, $p = .002$, $\eta^2_p = .169$. Negative females (M = 1.71, SD = .66) received more shots of bad karma than positive females (M = 1.17, SD = .60), $F(1, 50) = 20.08$, $p < .001$, $\eta^2_p = .287$. There were no differences in shots to negative male (M = 1.55, SD = .52) and positive male targets (M = 1.44, SD = .52), $F(1, 50) = 1.83$, $p = .182$, $\eta^2_p = .035$.

Responses to the voodoo doll task were coded for shot location: head, arms, chest, groin/upper legs, and feet. A test of proportions was used to determine if shots varied by location for positive relearning targets and negative relearning targets. There were no differences in shots by location, $\chi^2(4, N = 51) = .03,\ p = .999$. A frequency table (See Table 3) for the total

percentage of shots administered to each location was computed. The most popular location for administering shots was the chest area for both positive (14.64% of all shots) and negative targets (18.37% of all shots). The remaining shots were dispersed equally among the other locations.

Table 3: Percentage of Bad Karma Shots to Relearning Targets by Shot Location

		Pilot Study		Experiment 1	
Valence	Location	*M*	*SD*	*M*	*SD*
Negative	Arms	11.11%	12.05%	9.11%	9.73%
Negative	Chest	18.37%	12.46%	17.36%	13.40%
Negative	Feet	8.30%	10.27%	8.84%	9.75%
Negative	Groin/Upper Leg	13.66%	10.55%	13.1%	11.30%
Negative	Head	7.12%	13.12%	2.05%	5.35%
Positive	Arms	9.09%	12.24%	9.85%	11.30%
Positive	Chest	14.64%	10.88%	16.00%	12.80%
Positive	Feet	6.21%	9.19%	8.18%	10.40%
Positive	Groin/Upper Leg	11.50%	9.81%	9.96%	9.69%
Positive	Head	5.67%	12.01%	1.55%	3.90%

DISCUSSION

The purpose of the pilot study was to test whether instructions to the behavioral intentions measures produced response variability across trial type and valence. Results showed that the instructions were effective at producing response variability. First, the data support the hypothesis that people spontaneously infer traits about others from their behavior. Participants were more accurate at recalling traits paired with relearning targets compared to control targets. These results replicate previous work that also employed the savings in relearning task (see Bott et al., 2021 for a review). When targets behaved in ways that implied character traits about them, participants inferred those traits and subsequently learned those target-trait pairings better than targets who were paired with control traits. Because STIs were found, the responses for the

social media measure and voodoo doll task were analyzed to see if STI trials led to differences in behavioral intentions.

The instructions for the social media measure successfully produced response variability across trial type and valence. Results for the social media measure showed that STIs led to differences in intentions to friend. There was a significant interaction between trial type and valence where participants were more likely to friend positive relearning targets compared to positive control targets. There was also a marginal effect where negative relearning targets were friended less often than negative controls. Thus, when participants made positive spontaneous trait inferences, they befriended those targets and when participants made negative trait inferences, they wanted to avoid those targets by rejecting friend requests and not offering follow requests.

Similar to friending, STIs also led to differences in avoidant behavior. Results for the pilot study showed that participants administered more shots of bad karma to people they made negative trait inferences of compared to people they made positive trait inferences of. The mean differences in shots of bad karma across valence for relearning trials showed that the instructions for the voodoo doll task were effective in producing response variability.

Chapter 3: Experiment 1

The pilot study showed that the instructions for the social media and modified voodoo doll task were effective in producing response variability across trial type and valence. However, all participants completed the same version of the experiment, so sentences were not counterbalanced by target gender and were paired with only one target face. Additionally, the pilot study was not adequately powered. Experiment 1 addressed these limitations. Participants completed one of 4 versions of the savings in relearning task. Two sets of faces were used across versions. Faces were counterbalanced by trial type so that each face was paired with a relearning trial in one version and a control trial in another version (See Appendix E). Recall accuracy was used as a metric for spontaneous trait inferences. It was predicted that participants would be more accurate in recalling traits from relearning trials compared to control trials. Additionally, recall accuracy was predicted to be higher for negative traits relative to positive traits. I also hypothesized that spontaneous trait inferences would differentially predict approach and avoidant behavioral intentions. I predicted that when participants made positive trait inferences, they would be more likely to befriend positive relearning targets compared to positive control targets. I also predicted that when participants made negative trait inferences, they would be more likely to administer more shots of bad karma to negative relearning targets relative to positive relearning targets. These pre-registered hypotheses can be found on Open Science Framework (https://osf.io/ek9gq).

METHOD

Participants

Bott et al. (2021) recently conducted a meta-analysis on the effect sizes for detecting spontaneous trait inferences using different methodological techniques. The smallest reported

effect size for detecting spontaneous trait inferences using the savings in relearning paradigm was used to conduct an a priori power analysis ($d_z = .62; Cohen's\ F = .31$). The power analysis suggested a total sample size of 54 would be needed to achieve 80% power for the spontaneous trait inference effect (G Power, ANOVA: Repeated measures, between factors, alpha= .05, number of groups = 2, number of measurements = 4). Because 54 participants might be considered too small to publish, I aimed to collect data from at least 80 participants.

In total, 119 from the University of Texas at El Paso completed the experiment. Twenty-four participants were excluded from analyses for having low recall accuracy (less than 10% correctly recalled traits). Eight participants were excluded from analyses for answering more than one attention check question incorrectly. The analyzable sample was composed of 87 college aged (*M* = 20.21, *SD* = 3.51) participants. Of the 87 participants, 69 identified as female, 16 identified as male, and 2 identified as non-binary/third gender. Fifty-eight participants self-identified as White, 4 identified as Black, 1 identified as Asian, 1 identified as Native Hawaiian/Pacific Islander, 7 identified as multi-racial, 14 identified as Other, and 2 preferred not to answer[3].

Design

Experiment 1 employed a 2(Trial Type: Relearning vs Control) x 2(Valence: Positive vs Negative) x 2(Target Gender: Male vs Female) x 2(Stimulus Set: Set A vs Set B) mixed design with stimulus set as a between subjects factor. Stimulus set a and set b contained different trait implying sentences. This was included to ensure that responses on the dependent variables were not due to idiosyncratic differences in one set of trait implying sentences.

[3] The race/ethnicity question used for demographics mistakenly did not include a Latino response option.

Thirty trials were shown to participants in Experiment 1 (12 relearning, 12 control, 6 filler). Six filler trials were included so that participants could get acclimated to the task. These trials included neutral sentences that did not reliably produce a trait inference. The exposure phase began with 3 filler trials and ended with 3 filler trials. Valence and target gender were equally distributed across the 30 trials (See Figure 2). As in the pilot study, recall accuracy was used as a metric for spontaneous trait inferences while social media friending and shots of bad karma were used as behavioral intentions measures.

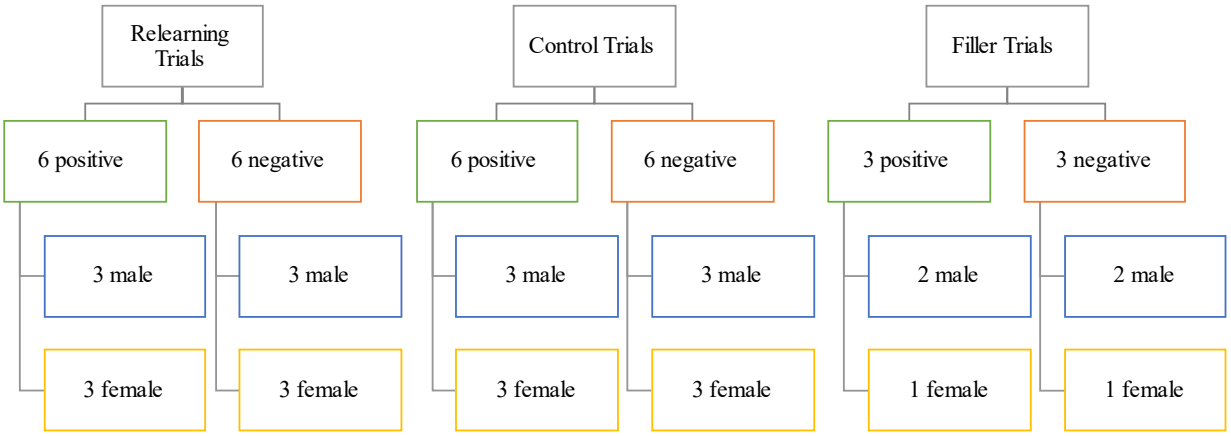

Figure 2: Trial Breakdown for Experiment 1

Materials

Exposure Phase

Eprime 2.0 (Schneider et al., 2002) was used to present the savings in relearning task to participants. Sentences shown to participants were gathered from the same group of piloted sentences used for the pilot study (See Appendix F). As in the pilot study, trials were equally distributed across trial type, valence, and target gender (See Figure 2). Each trial was displayed for 10 seconds. The only differences between the pilot study's exposure phase and Experiment

1's exposure phase were the pictures used for targets and that photo-sentence pairings were pseudo-randomized by participant.

To match the sample demographics, pictures of self-identifying Latinos from the Chicago Face Database (Ma et al., 2015) were used. In total, 60 photos were chosen for Experiment 1. These photos were counterbalanced across trial type and stimulus set (See Appendix E). For example, the picture "Latino Male 1" was paired with relearning sentence sentences from Set A, relearning sentences from Set B, control sentences from Set A, and control sentences from Set B.

In total, each condition of the 2(Trial Type: Relearning vs Control) x 2(Valence: Positive vs Negative) x 2(Target Gender: Male vs Female) design had 3 trials. Photo pools were created for each condition of the design. These photos were then randomly assigned (by participant) to one of the 3 trials that corresponded to the condition. For example, let's say the photos Latina 1, Latina 2, and Latina 3 were in the positive control condition. For participant 1, Latina 1 was paired with positive control sentence 1, Latina 2 was paired with positive control sentence 3, and Latina 3 was paired with positive control sentence 2. For participant 2, Latina 1 was paired with positive control sentence 2, Latina 2 was paired with positive control sentence 2, and Latina 3 was paired with positive control sentence 1.

Confusion Task

The materials and procedures for the confusion task were identical to the pilot study.

Behavioral Intentions Measures

The social media friending task was identical to the pilot study. The correlation between friend acceptances and follow requests was moderate-large (r = .48), so these items were aggregated.

The voodoo doll task was modified so that targets were counterbalanced across screen location (e.g. Latina 1 was on the right side of the screen for participant 1 and on the left side of

the screen for participant 2). For each counterbalanced version of the voodoo doll task, half of the trials had a relearning target displayed on the right side of the screen with the corresponding control target on the left side of the screen. The other half of trials displayed the control target on the right side of the screen with the relearning target on the left side of the screen.

Learning Phase

The learning phase was similar to the pilot study, except it was modified to include the 30 trials participants saw for the exposure phase. Thus, 12 relearning, 12 control trials, and 6 filler trials were created. Relearning trials were paired with traits implied by the behaviors presented during the exposure phase and control trials were paired with traits that matched the valence of the behavior from the exposure phase. Filler trials were paired with traits that matched the valence of the behavior shown in the exposure phase. Target-trait pairings were displayed for 6 seconds and were randomized by participant.

Filler Tasks

First, participants were asked to complete a word search puzzle (See Appendix G). They were instructed to find as many words as possible in 4 minutes time. Afterward, participants completed 30 “me” or “not me” judgments. The 30 traits from the learning phase were used for the “me” or “not me” judgments.

Cued Recall

Two different research assistants coded responses to the cued recall task for Experiment 1 using the same inclusionary criteria as the pilot study. Agreement was high among the two raters, K = .98 [lower estimate = .97, upper estimate = .99]. A third researcher (who had not previously coded responses before) was asked to code responses where the two raters disagreed. The procedure and set up for the cued recall task were identical to the pilot study.

Attention Check

Four free-response questions were included at the end of the experiment to ensure that participants were paying attention to the task. Participants were asked: “Were you asked to learn specific traits about each person you saw”, “What were you asked to do for the social media questionnaire”, “What kind of karma were you asked to give to people?”, and “What do you think this study is about?”. Responses to the first three questions were coded as correct or incorrect. Participants who missed more than 1 question were removed from analyses.

Procedure

Participants scheduled a time to come into the lab to complete the experiment. Each timeslot had space for two participants. Participants provided their consent and demographic information using separate Qualtrics surveys. Afterward, they completed the exposure phase on a computer that had EPrime installed. Participants then completed the confusion task and behavioral intentions measures on Qualtrics with a separate computer. The behavioral intentions measures were presented randomly by participant. Following the Qualtrics survey, participants completed the learning phase on the computer that had Eprime running. They were then given a paper copy of the word search to complete. Following the word search, participants completed the me/not me, cued recall, and attention check questions on the computer that was running Eprime. After completing the attention check items, participants were provided with a summary of the study’s hypotheses, thanked for their time, and granted SONA credits.

RESULTS

Analytic Plan

A 2(Trial Type: Relearning vs Control) x 2(Valence: Positive vs Negative) x 2(Target Gender: Male vs Female) x2(Stimulus Set: Set A vs Set B) mixed subjects ANOVA was used to

analyze recall accuracy, friending, and follow requests. As in the pilot study, shots of karma were analyzed for only relearning trials because responses on this measure were dependent by trial type (e.g. if the relearning target received 4 shots, the control target received 1). Reported below are the results for trial type, valence, target gender, and the interactions between these predictors. Because stimulus set is not essential to hypotheses, results for stimulus set are reported in supplemental materials (See Appendix H).

Cued Recall

As predicted, participants were significantly more accurate at recalling relearning trait trials (M = .39, SD = .20) than control trials (M = .35, SD = .18), $F(1, 83) = 5.06$, $p = .027$, $\eta^2_p = .057$. Participants were also significantly more accurate at recalling negative traits (M = .39, SD = .20) compared to positive traits (M = .34, SD = .18), $F(1, 83) = 8.93$, $p = .004$, $\eta^2_p = .098$. The predicted interaction between valence and trial type was non-significant, $F(1, 83) = .06$, $p = .801$, $\eta^2_p = .001$. Participants had similar accuracy for relearning trials ($M_{negativeRL} = .41, SD_{negativeRL} = .26, M_{positiveRL} = .36, SD_{negativeRL} = .23$) and control trials ($M_{negativeC} = .37, SD_{negativeC} = .23, M_{positiveC} = .32, SD_{negativeC} = .20$) across valence. There was also a significant interaction between trial type and target gender, $F(1, 83) = 4.95$, $p = .029$, $\eta^2_p = .056$. Participants reported more recall accuracy for male relearning targets (M = .42, SD = .26) compared to male control targets (M = .34, SD = .21), $F(1, 84) = 8.33$, $p = .005$, $\eta^2_p = .090$. There were no differences in recall accuracy for female relearning targets (M = .351, SD = .233) and female control targets (M = .353, SD = .232), $F(1, 84) = .01$, $p = .940$, $\eta^2_p < .001$.All other effects are listed in (See Table 4).

Table 4: Recall Accuracy ANOVA Results for Experiment 1

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Stimulus Set	1	83	0.19	.662	.002
Trial Type	1	83	5.06	.027*	.057
Valence	1	83	8.98	.004**	.098
Target Gender	1	83	1.86	.177	.022
Stimulus Set x Trial Type	1	83	6.57	.012*	.073
Stimulus Set x Valence	1	83	0.08	.784	.001
Stimulus Set x Target Gender	1	83	0.25	.618	.003
Trial Type x Valence	1	83	0.06	.801	.001
Trial Type x Target Gender	1	83	4.95	.029*	.056
Valence x Target Gender	1	83	2.85	.095	.033
Stimulus Set x Trial Type x Valence	1	83	1.55	.217	.018
Stimulus Set x Trial Type x Target Gender	1	83	2.99	.088	.035
Stimulus Set x Valence x Target Gender	1	83	0.07	.794	.001
Trial Type x Valence x Target Gender	1	83	0.05	.827	.001
Stimulus Set x Trial Type x Valence x Target Gender	1	83	1.75	.189	.021

Note. * $p < .05$, ** $p < .01$

Social Media Friending

Participants significantly friended female targets (M = .55, SD = .20) more than male targets (M = .37, SD = .19), $F(1, 83) = 42.69$, $p < .001$, $\eta^2_p = .340$. The predicted interaction between trial type and valence was significant, $F(1, 83) = 15.89$, $p < .001$, $\eta^2_p = .161$. As predicted, participants significantly friended positive relearning targets (M = .52, SD = .20) more than positive control targets (M = .42, SD = .23), $F(1, 84) = 19.27$, $p < .001$, $\eta^2_p = .187$. Participants also friended negative relearning targets (M = .43, SD = .19) less than negative control targets (M = .48, SD = .21), $F(1, 84) = 3.10$, $p = .082$, $\eta^2_p = .036$. There was also a significant interaction between valence and target gender, $F(1, 83) = 13.01$, $p = .001$, $\eta^2_p = .136$. Positive female targets (M = .59, SD = .25) were friended significantly more than positive male targets (M = .35, SD = .22), $F(1, 84) = 58.47$, $p < .001$, $\eta^2_p = .410$. Finally, there was a significant three-way interaction between trial type, valence, and target gender, $F(1, 83) = 23.91$, $p < .001$, $\eta^2_p = .224$. This interaction was driven by responses to positive female targets in relearning trials and negative females in control trials. Participants friended positive relearning females (M = .67, SD = .29) significantly more than positive control females (M = .51, SD = .29), $F(1, 84) = 24.71$, $p < .001$, $\eta^2_p = .227$. Negative females in relearning trials (M = .44, SD = .28) were friended significantly less than negative control females (M = .59, SD = .27), $F(1, 84) = 18.90$, $p < .001$, $\eta^2_p = .184$. All other effects can be found in Table 5.

Table 5: Social Media Friending ANOVA results for Experiment 1

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Stimulus Set	1	83	1.00	.320	.012
Trial Type	1	83	3.41	.068	.039
Valence	1	83	0.53	.470	.006
Target Gender	1	83	42.69	<.001***	.340
Stimulus Set x Trial Type	1	83	0.07	.795	.001
Stimulus Set x Valence	1	83	12.49	.001**	.131
Stimulus Set x Target Gender	1	83	0.74	.393	.009
Trial Type x Valence	1	83	15.89	<.001***	.161
Trial Type x Target Gender	1	83	2.52	.116	.029
Valence x Target Gender	1	83	13.01	.001**	.136
Stimulus Set x Trial Type x Valence	1	83	0.02	.898	<.001
Stimulus Set x Trial Type x Target Gender	1	83	21.91	<.001***	.209
Stimulus Set x Valence x Target Gender	1	83	3.19	.078	.037
Trial Type x Valence x Target Gender	1	83	23.91	<.001***	.224
Stimulus Set x Trial Type x Valence x Target Gender	1	83	9.37	.003**	.101

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Bad Karma Shots

As predicted participants administered more shots of bad karma to negative relearning targets (M = 2.52, SD = .68) compared to positive relearning targets (M = 2.28, SD = .64), $F(1, 84) = 4.11$, $p = .046$, $\eta^2_p = .047$. There was also a significant interaction between valence and target gender, $F(1, 84) = 26.48$, $p < .001$, $\eta^2_p = .240$. Participants delivered more shots of bad karma to negative female (M = 2.67, SD = .85) compared to positive female targets (M = 2.07, SD = .71), $F(1, 85) = 19.76$, $p < .001$, $\eta^2_p = .190$. There were no significant differences in bad karma shots for negative male (M = 2.37, SD = .80) and positive male targets (M = 2.48, SD = .91), $F(1, 84) = .58$, $p = .448$, $\eta^2_p = .007$. All other effects are listed in Table 6.

Shots of bad karma were coded for shot location and a test of proportions was used to see if there were differences in shot location by valence. There were no differences in shots by location, $\chi^2(4, N = 85) = 6.45,\ p = .168$. A frequency table (See Table 3) for the total percentage of shots administered to each location was computed. The most popular location for administering shots was the chest area for both positive (16.00% of all shots) and negative targets (17.36% of all shots). The remaining shots were dispersed equally among the other locations.

Table 6: Shots of Bad Karma Across Relearning Trials ANOVA Results for Experiment 1

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Stimulus Set	1	84	0.41	.523	.005
Valence	1	84	4.11	.046*	.047
Target Gender	1	84	0.36	.550	.004
Stimulus Set x Valence	1	84	0.19	.667	.002
Stimulus Set x Target Gender	1	84	2.41	.124	.028
Valence x Target Gender	1	84	26.48	<.001***	.240
Stimulus Set x Valence x Target Gender	1	84	0.81	.369	.010

Note. * $p < .05$, *** $p < .001$.

DISCUSSION

It was hypothesized that participants would form spontaneous trait inferences by showing increased memory retrieval for implied traits paired with relearning targets compared to control traits paired with control targets. The data support this hypothesis. Participants were more accurate at recalling implied traits paired with relearning targets compared to control traits paired with control targets. The predicted interaction between trial type and valence was non-significant. Participants recalled negative implied traits to the same degree as positive implied traits. This suggests that negative trait inferences were just as strong as positive trait inferences.

When it came to behavioral intentions, it was hypothesized that participants would befriend those they made positive inferences of and harm those they made negative inferences of. This hypothesis was supported by the data. The interaction between trial type and valence was significant. When participants made positive trait inferences, they were more likely to befriend those targets compared to positive control targets. Participants were also more likely to harm those they made negative inferences of. More shots of bad karma were administered to negative relearning targets compared to positive relearning targets. Thus, the behavioral intentions measures show that positive trait inferences lead to increased approach behavior and negative trait inferences lead to increased avoidant behavior.

Chapter 4: Experiment 2

The aim of Experiment 2 was to conceptually replicate and extend the findings of Experiment 1. Thus far, research on spontaneous trait inferences has focused on the formation of trait inferences for behaviors not directed to the perceiver. Traditionally, stimuli have either included first person statements from the target (e.g. "I returned the lost wallet to its owner") or third person statements about behaviors between the target and others (e.g. "Mike returned the lost wallet to its owner"). However, in real world interactions, many behaviors are directed toward the perceiver and perceivers are tasked with reacting to those behaviors in the moment. For example, receiving compliments results in customers tipping their servers and hairstylists more (Seiter & Dutson, 2007; Seiter, 2007) and leads to increased compliance (Grant et al., 2010). Similarly, being insulted about your group leads to increased desire to attack and avoid the insulter and decreased desire to affiliate with the insulter (Garcia et al., 2006). Thus, one might infer that those who compliment are kind people who deserve praise or reward while those who insult are mean people who deserve punishment or avoidance. Experiment 2 tests whether perceiver-directed behaviors, compared to other-directed behaviors, magnify STIs and intensify subsequent behavioral intentions. It was predicted that perceiver-directed behaviors (e.g. "Mike returned the lost wallet to me") would elicit stronger spontaneous trait inferences compared to other-directed. These inferences would then lead to differences in behavioral intentions such that positive inferences would lead to increased befriending on social media and negative inferences would lead to increased harm in the self-directed behavior condition compared to the other-directed behavior condition. These pre-registered hypotheses can be found on the Open Science Framework (https://osf.io/fpd35).

METHOD

Participants

The smallest effect size for the spontaneous trait inference effect among the dependent measures from Experiment 1 was used to compute an a priori power analysis. The estimated sample size needed to achieve 80% power to detect the spontaneous trait inference effect was 96 participants (G Power, ANOVA: Repeated measures, between factors, alpha= .05, number of groups = 2, number of measurements = 8, Cohen's f= .218). In total, 113 completed the experiment. Five people were dropped from analyses for missing more than one attention check item and 2 people were dropped from analyses for having a recall accuracy rate less than 10%, leaving an analyzable sample of 106[4] (50 in the other-directed behavior condition and 56 in the self-directed behavior condition). Of the 106 college aged participants (M = 22.56, SD = 7.97), 68 identified as female and 38 identified as male. Most participants identified as Latino (n = 46), with fewer people identifying as bi-racial (n = 24), White (n = 23), Black (6), and other (7).

Design, Materials, and Procedure

Experiment 2 used a 2(Trial Type: Relearning vs Control) x 2(Valence: Positive vs Negative) x 2(Target Gender: Male vs Female) x 2(Directed Behavior: Self vs Other) mixed design with Directed Behavior as a between subjects factor. A stimulus set was created where each sentence was modified to have self (e.g. "David gave me directions on how to get to the student union") or other (e.g. "David gave the freshman directions on how to get to the student union") directed behaviors (See Appendix I). In addition to the Directed Behavior modification, a new set of 60 photos of self-identifying Latinos from the Chicago Face Database (Ma et al., 2015) were used.

[4] One participant was dropped from analyses for the social media friending and bad karma shots for missing data on these measures.

The cued recall measure was coded by a new set of research assistants. Interrater agreement was high among raters, K = .90 [lower estimate = .91, upper estimate = .93]. Discrepant responses were coded by another research assistant. As in the previous studies, the correlation for social media acceptances and follows was high (r = .71) so responses on this measure were aggregated. All other materials and procedures were identical to Experiment 1.

RESULTS

Cued Recall

Spontaneous Trait Inferences

As predicted, participants were significantly more accurate at recalling traits paired with relearning targets (M = .42, SD = .21) compared to control targets (M = .31, SD = .20), F(1, 104) = 39.52, p < .001, η^2_p = .275. Participants were also significantly more accurate at recalling negative traits (M = .39, SD = .21) compared to positive traits (M = .35, SD = .20), F(1, 104) = 4.98, p = .028, η^2_p = .046. There was also a significant interaction between valence and target gender, F(1, 104) = 7.93, p = .006, η^2_p = .071. There were no differences in recall accuracy for negative male traits (M = .37, SD = .25) and negative female traits (M = .41, SD = .26), F(1, 105) = 1.42, p = .235, η^2_p = .013. Instead, this interaction was driven by responses to female targets. Participants were more accurate at recalling negative female traits (M = .41, SD = .26) compared to positive female traits (M = .31, SD = .23), F(1, 105) = 11.25, p = .001, η^2_p = .098.

Self vs Other Directed Behavior

The predicted interaction between behavior and trial type was non-significant, F(1, 104) = 1.64, p = .203, η^2_p = .016. Participants recalled self-directed implied traits (M = .44, SD = .24) to the same extent as other-directed implied traits (M = .41, SD = .17). There was a marginal three-way interaction between behavior, trial type, and valence, F(1, 104) = 3.05, p = .083, η^2_p =

.028. Although the interaction was not significant, simple effects were conducted to test the predicted negativity effect. Counter to predictions, there were no significant differences in recall accuracy for negative implied traits in the self condition (M = .44, SD = .28) compared to the negative implied traits in the other condition (M = .43, SD = .23), $F(1, 104) = .07$, $p = .797$, $\eta^2_p = .001$. All other effects are listed in Table 7.

Table 7: Recall Accuracy ANOVA results for Experiment 2

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Behavior	1	104	2.67	.106	.025
Trial Type	1	104	39.52	<.001***	.275
Valence	1	104	4.98	.028*	.046
Target Gender	1	104	0.70	.406	.007
Behavior x Trial Type	1	104	1.64	.203	.016
Behavior x Valence	1	104	0.09	.759	.001
Behavior x Target Gender	1	104	0.00	.997	<.001
Trial Type x Valence	1	104	0.32	.575	.003
Trial Type x Target Gender	1	104	0.02	.887	<.001
Valence x Target Gender	1	104	7.93	.006**	.071
Behavior x Trial Type x Valence	1	104	3.05	.083	.028
Behavior x Trial Type x Target Gender	1	104	3.12	.080	.029
Behavior x Valence x Target Gender	1	104	1.51	.222	.014
Trial Type x Valence x Target Gender	1	104	2.62	.109	.025
Behavior x Trial Type x Valence x Target Gender	1	104	0.26	.610	.002

Note. *** $p < .001$, ** $p < .01$, * $p < .05$

Social Media Friending

Spontaneous Trait Inferences

Participants friended targets from relearning trials (M = .42, SD = .18) significantly less than targets from control trials (M = .46, SD = .21), $F(1, 103) = 6.06$, $p = .016$, $\eta^2_p = .056$. They also friended positive targets (M = .54, SD = .21) significantly more than negative targets (M = .35, SD = .18), $F(1, 103) = 133.66$, $p < .001$, $\eta^2_p = .565$. Participants also friended female targets (M = .53, SD = .20) more than male targets (M = .35, SD = .22), $F(1, 103) = 67.23$, $p < .001$, $\eta^2_p = .395$. There was also a significant interaction between valence and target gender, $F(1, 103) = 5.41$, $p = .022$, $\eta^2_p = .050$. Positive female targets (M = .61, SD = .24) were friended more than positive male targets (M = .47, SD = .27), $F(1, 104) = 29.53$, $p < .001$, $\eta^2_p = .221$. Negative female targets (M = .46, SD = .24) were also friended more than negative male targets (M = .24, SD = .21), $F(1, 104) = 67.02$, $p < .001$, $\eta^2_p = .392$. Finally, the predicted interaction between valence and trial type was significant, $F(1, 103) = 8.29$, $p = .005$, $\eta^2_p = .074$. Contrary to predictions, there were no significant differences in the friending of positive relearning targets (M = .54, SD = .23) and positive control targets (M = .53, SD = .26), $F(1, 104) = 0.15$, $p = .703$, $\eta^2_p = .001$. However, participants were significantly less likely to friend negative relearning targets (M = .30, SD = .20) compared to negative control targets (M = .39, SD = .22), $F(1, 104) = 17.97$, $p < .001$, $\eta^2_p = .147$.

Self vs Other Directed Behavior

The predicted interaction between trial type, valence, and behavior was non-significant, $F(1, 103) = 2.31$, $p = .132$, $\eta^2_p = .022$. Although the interaction was non-significant, simple effects were computed to test whether behavior magnified the spontaneous trait inference effect. Participants friended positive relearning targets in the self condition (M = .58, SD = .23) marginally

more than positive relearning targets in the other condition (M = .50, SD = .23), $F(1, 103) = 3.30$, $p = .072$, $\eta^2_p = .031$. All other effects are in Table 8.

Table 8: Social Media Friending ANOVA results for Experiment 2

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Behavior	1	103	0.87	.352	.008
Trial Type	**1**	**103**	**6.06**	**.016***	**.056**
Valence	**1**	**103**	**133.66**	**<.001*****	**.565**
Target Gender	**1**	**103**	**67.23**	**<.001*****	**.395**
Behavior x Trial Type	1	103	0.37	.544	.004
Behavior x Valence	1	103	0.84	.361	.008
Behavior x Target Gender	1	103	1.16	.283	.011
Trial Type x Valence	**1**	**103**	**8.29**	**.005****	**.074**
Trial Type x Target Gender	1	103	0.26	.610	.003
Valence x Target Gender	**1**	**103**	**5.41**	**.022***	**.050**
Behavior x Trial Type x Valence	1	103	2.31	.132	.022
Behavior x Trial Type x Target Gender	1	103	0.64	.426	.006
Behavior x Valence x Target Gender	1	103	0.18	.674	.002
Trial Type x Valence x Target Gender	1	103	1.38	.243	.013
Behavior x Trial Type x Valence x Target Gender	1	103	0.25	.618	.002

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Bad Karma Shots

Spontaneous Trait Inferences

As predicted, participants administered more shots of bad karma to negative relearning targets (M = 2.83 SD = .63) compared to positive relearning targets (M = 2.37, SD = .54), F(1, 103) = 32.17, p < .001, η^2_p = .238.

Self vs Other Directed Behavior

The predicted interaction between valence and behavior was significant, F(1, 103) = 4.08, p = .046, η^2_p = .038. Contrary to predictions, karma shots did not differ for negative relearning targets in the self condition (M = 2.86 SD = .67) and negative relearning targets in the other condition (M = 2.80 SD = .58), F(1, 103) = 0.24, p = .623, η^2_p = .002. Instead, this interaction was driven by responses to negative targets across behavior. Participants administered more shots of bad karma to negative relearning targets in the self condition (M = 2.86 SD = .67) compared to positive relearning targets in the self condition (M = 2.24 SD = .57), F(1, 55) = 28.13, p < .001, η^2_p = .215. They also administered more shots of bad karma to negative relearning targets in the other condition (M = 2.80 SD = .58) compared to positive relearning targets in the other condition (M = 2.51 SD = .46), F(1, 48) = 7.31, p = .009, η^2_p = .132. Although there were no significant mean differences in shots of bad karma between negative relearning targets in the self condition and the other condition, the magnitude of the spontaneous trait inference effect was larger in the self condition (η^2_p = .215, 95% CI [.17, .47]) compared to the other condition (η^2_p = .066, 95% CI [.02, .28]). All other effects are listed in Table 9.

Table 9: Shots of Bad Karma ANOVA results for Experiment 2

Predictor	df_{Num}	df_{Den}	F	p	η^2_p
Behavior	1	103	1.59	.210	.015
Valence	1	103	32.17	<.001***	.238
Target Gender	1	103	0.38	.538	.004
Behavior x Valence	1	103	4.08	.046*	.038
Behavior x Target Gender	1	103	0.31	.580	.003
Valence x Target Gender	1	103	0.97	.328	.009
Behavior x Valence x Target Gender	1	103	3.19	.077	.030

Note. *** $p < .001$, * $p < .05$

Shots of bad karma were coded for shot location. Percentages of shots administered to relearning targets were broken down by shot location, valence, and behavior. A test of proportion was used to examine if there were differences in shots administered across behavior and shot location for negative targets. There were no differences in bad karma shots, $\chi^2(4, N = 104) = .33,\ p = .988$. Once again, the chest area was the most popular place for shots (See Table 10).

Table 10: Percentage of Bad Karma Shots Administered to Relearning Targets Experiment 2

Valence	Location	Behavior	*M*	*SD*
Negative	Arms	Other	3.45%	5.15%
Negative	Arms	Self	3.89%	5.41%
Negative	Chest	Other	6.55%	5.93%
Negative	Chest	Self	6.71%	6.09%
Negative	Feet	Other	2.72%	4.52%
Negative	Feet	Self	3.43%	4.96%
Negative	Groin/Upper Leg	Other	3.72%	5.14%
Negative	Groin/Upper Leg	Self	3.71%	5.03%
Negative	Head	Other	2.22%	4.91%
Negative	Head	Self	1.33%	3.98%
Positive	Arms	Other	3.49%	5.06%
Positive	Arms	Self	3.18%	4.74%
Positive	Chest	Other	6.15%	5.91%
Positive	Chest	Self	5.46%	5.98%
Positive	Feet	Other	2.61%	4.54%
Positive	Feet	Self	2.54%	4.44%
Positive	Groin/Upper Leg	Other	3.22%	4.75%
Positive	Groin/Upper Leg	Self	3.04%	4.71%
Positive	Head	Other	1.25%	3.66%
Positive	Head	Self	0.75%	3.17%

DISCUSSION

The purpose of Experiment 2 was to replicate the findings from Experiment 1 and extend them by investigating whether self-directed behaviors magnified spontaneous trait inferences and behavioral intentions. Experiment 2 replicated spontaneous trait inference effects. Participants were more accurate at recalling traits paired with relearning targets compared to traits paired with control targets. Counter to predictions, there was no evidence that self-directed behaviors magnified spontaneous trait inferences. Participants recalled traits paired with relearning targets in the self condition to the same extent as traits paired with relearning targets in the other condition. Thus, trait inferences are equally strong for self and other directed behaviors.

Experiment 2 also replicated the behavioral intentions results from Experiment 1. Although there were no differences in friending for positive relearning targets and positive

control targets, there were significant differences in friending for negative targets. When participants made negative spontaneous trait inferences, they were less likely to friend those people on social media compared to negative controls. These results aligned with intentions to harm. Participants administered more shots of bad karma to negative relearning targets compared to positive relearning targets. Negative spontaneous trait inferences, therefore, led to more avoidant behavior across the social media measure and the modified voodoo doll task.

Directed behavior had a weak effect on behavioral intentions. There was a marginal difference in friending for positive relearning targets. Participants in the self-directed behavior condition friended positive relearning targets more than participants in the other-directed behavior condition. Although there was a significant interaction between behavior and valence for shots of bad karma, the direction of this interaction did not support the prediction that self-directed behaviors magnified responses to negative targets. Participants delivered the same amount of bad karma to negative relearning targets in the self condition and other condition. Although shots of bad karma did not differ for negative relearning targets across condition, the magnitude of the spontaneous trait inference effect for shots of karma was higher in the self condition compared to the other condition. Therefore, while Experiment 2 replicated the behavioral intentions results from Experiment 1, these effects seem stable across directed behavior. Negative spontaneous trait inferences lead to avoidant behavior, regardless of whether targets behave negatively to others or to the perceiver.

Chapter 5: General Discussion

Decades of research on person perception clearly demonstrates that people spontaneously infer character traits about others from observing their behavior (see Bray et al., 2022 for a review). Such inferences are called spontaneous trait inferences. Although spontaneous trait inference effects are robust, little work tests what perceivers do with spontaneous trait inferences. A pilot study and two pre-registered experiments tested whether spontaneous trait inferences influence perceivers' behavioral intentions. The savings in relearning paradigm was used to assess spontaneous trait inferences. Across all experiments, it was hypothesized that participants would spontaneously infer traits about others from their behavior. It was also hypothesized that participants would differentially act on those trait inferences, where positive inferences would lead to increased intentions to friend and negative inferences would lead to increased intentions to harm others. Table 11 summarizes the results for each of these hypotheses across the three experiments.

Spontaneous Trait Inferences

Across all three experiments, strong support for spontaneous trait inferences was found. Participants were first exposed to trait implying or neutral sentences. Later in the experiment, participants were asked to memorize target-trait pairings. Results across all experiments showed that participants were more accurate at recalling traits when those traits were implied by the target's behavior in the exposure phase, replicating previous work that utilized the savings in relearning task (see Bott et al., 2021 for a review; Carlston & Skowronski, 1994; Carlston et al., 1995). Participants first inferred traits about the target, and those inferences aided in memorizing the target-trait pairings. Thus, participants "relearned" the inferred traits when they were asked to memorize the target-trait pairings, and this relearning process increased recall accuracy.

Previous work has also displayed a negativity bias where negative trait inferences are stronger than positive trait inferences (Carlston & Skowronski, 2005; Shimizu, 2012; Shimizu, 2017; Skowronski & Carlston, 1989). The current work showed no support for the bias in spontaneous trait inference. Across all three experiments, positive trait inferences were just as strong as negative trait inferences. There was however, evidence for a general negativity bias. Recall was higher for negative traits compared to positive traits across all experiments. This general negativity bias effect has been replicated in the literature (see Norris, 2021 for a review) but researchers have debated on whether there are moderators for the negativity bias.

One explanation for why there was no evidence for a negativity bias in spontaneous trait inferences might be the cue-diagnosticity of the inferred traits (Lupfer et al., 2000; Skowronski & Carlston, 1989; Wojciske et al., 1993). Skowronski and Carlston (1989) suggest that negative trait inferences are stronger than positive trait inferences when those inferences involve morality related cues (e.g. being dishonest) whereas positive trait inferences are stronger than negative trait inferences for ability related cues (e.g. being intelligent). Morality and ability behaviors were dispersed almost evenly across negative and positive relearning trials in the current experiments. This could have cancelled out any negativity and positivity biases in forming spontaneous trait inferences. It is also possible that the extremity of behaviors was similar across positive and negative trials. Some work that displays a negativity effect in spontaneous trait inferences (e.g. Shimizu, 2017) utilized sentences that displayed stronger negative behaviors (e.g. shoving an elderly man to imply someone is mean) compared to positive behaviors (e.g. consistently practicing a skill to imply someone is hardworking). In the current experiments, negative sentences were not as extreme, which might have cancelled out any potential biases in the strength of spontaneous trait inferences.

MODERATORS FOR SPONTANEOUS TRAIT INFERENCES

The current experiments also examined self-relevancy as a potential moderator for spontaneous trait inferences in the form of me vs not me judgments (all experiments) and self-directed behaviors (Experiment 2). It was hypothesized that self-relevant information would magnify spontaneous trait inferences. The data partially support this hypothesis.

Me vs not me judgments were unanalyzable. Across all experiments, participants categorized the majority of positive traits as being self-descriptive whereas they seldom categorized any negative traits as being self-descriptive. This pattern of responses resulted in too many missing data points for the experimental design, so the self-relevancy hypothesis was not tested. This response pattern aligns with previous research on trait attributions. Mezulis et al (2004) conducted a meta-analysis that examined over 500 independent effect sizes on self-serving attributions. Their meta-analysis showed a large weighted mean effect size for a positivity bias in self-attributions. Participants were more likely to describe themselves as positive or attribute their sense of self to successes rather than focus on negative events or failures. Fields and Kuperberg (2015) extended this work by examining the self-positivity bias with implicit and neurocognitive methodologies. Participants were asked to read scenarios that varied on valence and directed behavior (self vs other). Results showed that participants expected positive information for self-directed scenarios. Thus, even implicit measures show a self-positivity bias. Rather than measuring self-relevancy, future research should focus on strong manipulations of self-relevancy to investigate this as a moderator for trait inferences.

Experiment 2 manipulated self-relevancy by having participants read behaviors that were self-directed (e.g. “gave me directions”) or other-directed (e.g. “gave the freshman directions”). It was hypothesized that trait inferences would be stronger in the self-directed behavior

condition. There was weak support for this hypothesis. Participants formed spontaneous trait inferences for both self-directed and other-directed behaviors. There were no significant differences in recall accuracy for relearning targets in the self-directed behavior condition compared to relearning targets in the other-directed behavior condition. However, the magnitude of the spontaneous trait inference effect was stronger in the self-directed behavior condition. Thus, although participants spontaneously inferred traits about others from observing how they behaved toward others, trait inferences were stronger when participants observed how others behaved towards them. For example, Ben might infer that Melissa is helpful from observing her give directions to a lost freshman, but this inference is stronger when Melissa offers Ben directions. This pattern aligns with previous findings on the self-reference effect (Cunningham & Turk, 2017; Humphreys & Sui, 2016; Sui & Humphreys, 2012). The self-reference effect is a bias in encoding information where self-relevant information is retrieved better than information about other people. Research on the self-relevance effect consistently demonstrates that information associated with the self is prioritized over information regarding others. For example, in one set of experiments, participants attended to geometric shapes that were associated to the self more often than shapes that were associated with strangers or close others (Sui & Humphreys, 2012).

The self-directed behavior findings for Experiment 2 warrant replication. Although there was some support that self-directed behaviors led to stronger trait inferences, this effect was small. This may have been because the directed behavior manipulation was weak. In Experiment 2, participants were instructed to familiarize themselves with the information on the screen because they would use it later in the study. Those in the self condition were not told to envision that they were the receivers of the behaviors they read. Instead, words like “you” and “your”

were used to manipulate self-directed behavior (e.g. “gave you directions” vs “gave the freshman directions”). It’s possible that this manipulation was not salient enough for participants. Future work should utilize other measures or manipulations of self-relevancy to investigate whether trait inferences are magnified for self-relevant behaviors.

Spontaneous Trait Inferences Influence Behavioral Intentions

The larger goal of the current research was to extend work on spontaneous trait inferences by examining whether trait inferences influence perceivers’ behavioral intentions. It was hypothesized that positive STIs would lead to approach behaviors and negative STIs would lead to avoidant behaviors. Specifically, it was predicted that positive STIs would increase intentions to friend others on social media, whereas negative STIs would increase intentions to harm via shots of bad karma in a modified voodoo doll task. There was support for this hypothesis across all three experiments.

When participants formed positive trait inferences of others, they were more likely to friend those people on social media (Pilot Study & Experiment 1). Participants were also less likely to friend people they made negative inferences of (Experiment 2). These results align with Schneid et al. (2015)’s findings where participants rated targets they made positive inferences of as more approachable than targets they made negative inferences of. The friending results also extends on work that examines spontaneous trait inferences of others based on social media posts. Austin et al., (2021) had participants evaluate profiles that had posts embedded with trait-implying behaviors. After reviewing profiles, participants rated how well trait words described the target and how much they liked the target. Results showed that participants made spontaneous trait inferences of the target from the posts. Ratings for implied traits were higher than traits that were matched on valence. Participants also reported liking positive targets more

than negative targets. In the current work, participants made inferences of targets outside of an online environment and used those inferences to decide on who they were willing to interact with online.

The friending results also align with work on Facebook friend decisions. Although some work shows that people will generally accept friend requests from strangers or people they are not close to (Adrian et al., 2018), other work shows that social media users are selective with who they interact with online. Qin et al. (2021) for example, had participants rate their intentions to friend others after reviewing profiles that were embedded with positive, balanced, or negative posts. Results showed that negative profiles were rated as less likable. In Experiment 2, I found that participants friended negative relearning targets less than negative control targets. These results extend Qin et al.'s work because it shows that negative evaluations of others lead to less friending.

Experiments 1 and 2 also showed increased friending for female targets compared to male targets. Female targets, regardless of the valence of their behavior, might have elicited more friend requests because of gender stereotypes associated with social media use. Bacev-Giles & Haji (2017) show that impressions of targets from their social media profiles align with gender-consistent stereotypes. Although participants reported no differences in favorability, male targets were described as athletic while female targets were described as friendly. These gender stereotypes could have influenced responses to the social media questionnaire in the current work. If participants activated the "friendly" stereotype for female targets, then their behavioral intentions may have been driven by this stereotype rather than by their trait inference. Some work on spontaneous trait inferences shows that stereotypes influence trait inference formation. When targets behave counter-stereotypically, stereotypes are activated and weaken trait

inferences (Wigboldus et al., 2003). However, other work shows that stereotypes have no influence on spontaneous trait inferences (Bray, 2019; Mangels & Degner et al., 2022). Future work is needed to assess whether more practiced heuristics, like stereotypes, override the influence of spontaneous trait inferences.

Results for the modified voodoo doll task also showed support that spontaneous trait inferences lead to differences in behavioral intentions. Across all experiments, participants consistently administered more shots of bad karma to negative relearning targets compared to positive relearning targets. When participants made negative trait inferences, they acted on those inferences by intending to harm those targets more than targets they made positive inferences of. These results are consistent with studies that have used the voodoo doll task as a measure of aggressive inclinations. Participants administer more pins to the voodoo doll for people they harbor negative feelings toward (DeWall et al., 2013; McCarthy et al., 2016). Thus, the current work shows strong support that negative trait inferences lead to avoidant behaviors.

The pilot study and Experiment 1 also showed unanticipated target gender effects where negative relearning females were punished more than positive relearning females. This gender difference may have been driven by gender stereotypes. Women are stereotyped as communal traits such as friendly and affectionate (Eagly et al., 2020). Thus, participants may have punished negative females they knew were "bad" (i.e. because of a negative trait inference) for breaking gender expectations. Alternatively, positive females may have been spared punishment or protected. This response pattern can be explained by ambivalent sexism (Glick & Fiske, 1997). Ambivalent sexism is an ideology that suggests that prejudice toward women can be expressed in benevolent (i.e. protection) and hostile (i.e. punishment) ways. Benevolent sexism—the ideology that women are sensitive and should be protected (Glick & Fiske, 1997) would suggest that

positive females should be spared punishment. On the other hand, hostile sexism—the ideology that women who deviate from nurturing stereotypes should be punished (Glick & Fiske, 1997) would suggest that negative females should be punished harshly for their behavior. In the modified voodoo doll task, participants administered shots of bad karma among two targets that were matched on valence and gender. Future work can amend these instructions so that participants administer shots of bad karma for targets pairings that differ on their gender composition (e.g. male-female, male-male, female-female). Differences in administering shots of bad karma may be found for those with high, relative to low, sexism ideologies. Those high in hostile sexism may choose to punish negative female targets they made trait inferences of more than negative male targets they made inferences of. Modifying the voodoo doll task to measure response times might also shed light on intentions to protect or harm targets. For example, those high in benevolent sexism might show higher response times when administering shots to female targets. These high responses might be a metric of hesitation where participants want to protect targets from harm. There might also be differences in where shots of karma are administered. Those high in benevolent sexism might choose to shoot areas that increase the likelihood of protection (e.g. hand, foot) while those high in hostile sexism might choose to shoot areas that increase harm (e.g. head, chest).

Shot location on the modified voodoo doll task was explored across the three experiments. Locations were coded for the head, chest, arms, upper legs/groin, and feet. Most shots were administered in the chest area. This area corresponds to the center of the screen, where the mouse normally lies. Instructions for the task did not specify that shot locations were going to be examined. Thus, most shots being administered to the chest area might not reflect differences in perceived harm. Future work should modify the instructions of the task to measure

the severity of harm. For example, instructing participants that "deadly shots" (e.g. head, chest) serve as harsher punishments may lead to differences in shot location, where more "deadly shots" are administered to negative relearning targets.

FUTURE DIRECTIONS AND IMPLICATIONS

The current work is some of the first to directly test whether spontaneous trait inferences influence behavioral intentions. This initial work shows promising support that positive trait inferences lead to approach behaviors and negative trait inferences lead to avoidant behaviors. This finding requires replication and extension. Behavioral intentions do not always coincide with actual behavior (Sheeran & Webb, 2016). Thus, future work should implement behavioral measures that more closely mimic naturalistic behaviors in the real world. For example, policy support, monetary donations, and hiring decisions are areas that warrant exploration. Differences in target characteristics should also be investigated. The current work utilized photos of racial ingroup members for the majority of participants, and this is common across the field. Investigating the differences in trait inference formation across target characteristics, such as racial group membership, may explain complex downstream consequences to spontaneous inferences like discrimination.

In a recent study, Birkelund and colleagues (2020) assessed hiring decisions for immigrant applicants. When hiring managers had experiences with immigrants, they used their experiences to inform their hiring decision. Positive experiences with immigrant workers led to job offers and negative experiences with immigrant workers lead to declining the applicant. However, when hiring managers had no prior experience with immigrant workers, they relied on stereotypes about immigrants to make their decision. Specifically, managers were skeptical about immigrant workers' language skills and work ethic, which resulted in declining acceptance of

immigrant applications. In essence, hiring managers used representations of the immigrant applicant's previous behavior to predict how they would be in their potential workplace. The stereotype process used by hiring managers is different from using STIs. Stereotypes are reinforced characteristics about the same group, while STIs are novel learned characteristics about a person or group. Investigating whether spontaneous trait inferences influence behavioral intentions serves as a steppingstone for investigating the mechanisms behind stereotype formation and discrimination. While it is likely that positive and negative inferences are made for ingroup and outgroup members (Bray et al., 2023), it is also plausible that *acting* on those inferences differs by group membership. Acting on positive inferences of ingroup members may lead to increased ingroup favoritism and acting on negative inferences of outgroup members can lead to increased discrimination. Thus, the downstream consequences of spontaneous inferences serve as a rich avenue for explaining the nuances of interpersonal dynamics.

BROADER IMPACTS

> *"Spontaneous inferences seem not to be for doing anything; they simply occur unintentionally and without the perceiver's awareness" (Uleman, 2022, pg 3).*

This statement sparked inspiration for the current work. My work is foundational for showing that spontaneous inferences have downstream consequences on perceiver behavior. Investigating how spontaneous trait inferences influence more naturalistic behaviors has direct implications for policy reform on how to proceed in ambiguous situations. For example, loan officers are responsible for determining whether applicants are credible enough to pay back the money lent to them. However, criteria for credibility vary greatly depending on the type of loan (e.g. car, mortgage, student) and most loan offices do not have concrete definitions for determining credibility. This ambiguity may partially explain racial discrimination in the loan market. Without explicit instructions for determining credibility, loan officers might rely on

spontaneous inferences to determine a course of action. Negative spontaneous inferences might then lead to rejected applications or increased interest rates. This same inference process might also be used in other instances that do not have concrete decision making criteria (e.g. hiring employees, admitting students into college/graduate programs, etc.). The applications of these findings not only advance the field, but they ultimately can also be used to inform policies for fair and equitable decision making.

Table 11: Summary of Hypotheses and Results Across all Experiments

Cued Recall			
Hypothesis/Effect	**Pilot Study**	**Experiment 1**	**Experiment 2**
Greater recall for relearning targets compared to control	***	*	***
Greater recall for negative targets	**	**	*
Greater recall for negative relearning targets compared to positive relearning targets	ns	ns	ns
Greater recall for relearning targets in self condition compared to relearning targets in other condition	-	-	ns
Social Media Friending			
Hypothesis/Effect	**Pilot Study**	**Experiment 1**	**Experiment 2**
Higher friending for positive relearning targets compared to positive control	**	***	ns
Lower friending for negative relearning targets compared to negative control	~	~	***
Higher friending for female targets compared to male targets	ns	***	***
Higher friending for positive relearning targets in self condition compared to positive relearning targets in other condition	-	-	~
Shots of Bad			
Hypothesis/Effect	**Pilot Study**	**Experiment 1**	**Experiment 2**
More shots for negative relearning compared to positive relearning	***	*	***
More shots for negative females compared to positive females	***	***	ns
More shots for negative relearning targets in self condition compared to negative relearning targets in other condition	-	-	ns

Note. Italicized hypotheses/effects reflect effects that were non-predicted but consistent across multiple experiments. ~ marginal effect, ns non-significant effect, - not tested, * $p < .05$, ** $p < .01$, *** $p < .001$

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Appendices

APPENDIX A-PILOT STUDY SENTENCES AND TRAIT WORDS

Sentence shown during Exposure Phase	Trait used for Learning Phase	Trial Type	Valence	Target
Mike helped the elderly lady pack her groceries into the car	Caring	Relearning	Positive	WM1
Cody aced the neuroscience project for their psychology class	Smart	Relearning	Positive	WM2
Jim gave directions to the freshman on how to get to the student union	Helpful	Relearning	Positive	WM3
Emma opened the door for the delivery man with the giant box	Polite	Relearning	Positive	WF1
Charlotte discreetly told their friend that they were wearing torn pants	Honest	Relearning	Positive	WF2
Mia never shares any juicy secrets about any of their friends	Loyal	Relearning	Positive	WF3
Bruce spent the day watching Netflix instead of working on the project due at midnight	Lazy	Relearning	Negative	WM4
Clark ate the last serving of food before everyone else got a chance to eat	Selfish	Relearning	Negative	WM5
Max bad mouthed their classmate for getting a high exam score	Jealous	Relearning	Negative	WM6
Harper laughed and called the lady a “fat ass” when she walked past them	Rude	Relearning	Negative	WF4
Abigail splashed the homeless man by purposefully driving into a nearby puddle.	Mean	Relearning	Negative	WF5
Emily blocked the grocery aisle with the shopping cart so people could not walk past	Annoying	Relearning	Negative	WF6
Keith thought they would like her new haircut.	Reliable	Control	Positive	WM7
Josh enjoyed watching varsity basketball tryouts for 4 years in a row.	Trustful	Control	Positive	WM8
Luke asked where the stars go shopping.	Clever	Control	Positive	WM9
Paul was light on his feet during the foxtrot.	Patient	Control	Positive	WM10

Avery liked movies more than parties.	Dependable	Control	Positive	WF7
Nora returned to where she lost her own wallet with all her money in it	Inventive	Control	Positive	WF8
Madison drove to the only newsstand, 20 blocks away.	Tender	Control	Positive	WF9
Lilian put out the best chocolates before the guests arrived.	Forgiving	Control	Positive	WF10
Scott couldn't get a chance to greet her new neighbor.	Shallow	Control	Negative	WM11
Aaron didn't win first place in the citywide high school science fair.	Gloomy	Control	Negative	WM12
Connor couldn't hold a full-time job while being a full-time student.	Angry	Control	Negative	WM13
Jared took 15 minutes to find a place for her car in the parking lot.	Gullible	Control	Negative	WM14
Natalie hoped that they knew that their new glasses looked funny.	Lonely	Control	Negative	WF11
Claire screamed for others to help find the phone.	Deceptive	Control	Negative	WF12
Alice walked up one flight to take the elevator.	Anxious	Control	Negative	WF13
Sadie suddenly remembered he hadn't finished his paper, after 20 minutes at the shore.	Weak	Control	Negative	WF14

APPENDIX B-RESULTS FOR EXPERIMENTAL MATERIALS STUDY

Thirty participants (27 Women, 3 Men, 21 Latino, 2 Black, 2 White, 5 Other/Prefer not to Answer) completed the rating task for partial course credit. For the task, participants were asked to rate each description on how good/bad they thought the behavior was (1-Extrmely Negative to 7-Extrmely Positive). They were then asked to indicate their level of agreement with how well a given trait word described the behavior (1-Strongly Disagree to 7-Strongly Agree). Below are the means and standard deviations for the behaviors that will be used in the proposed experiments.

Sentence	Trait	Valence *M(SD)*	Trait Alignment *M(SD)*
Helped the elderly lady pack her groceries into the car	Caring	6.87 (0.35)	6.70 (0.47)
Aced the neuroscience project for their psychology class	Smart	6.70 (1.03)	6.43 (0.86)
Gave directions to the freshman on how to get to the student union	Helpful	6.53 (0.63)	6.77 (0.50)
Opened the door for the delivery man with the giant box	Polite	6.53 (0.68)	6.63 (0.76)
Discreetly told their friend that they were wearing torn pants	Honest	5.47 (1.50)	6.10 (0.99)
Never shares any juicy secrets about any of their friends	Loyal	5.90 (0.84)	6.57 (0.73)
Spent the day watching Netflix instead of working on the project due at midnight	Lazy	1.77 (0.73)	5.50 (1.78)
Ate the last serving of food before everyone else got a chance to eat	Selfish	2.00 (0.95)	5.63 (1.87)
Bad mouthed their classmate for getting a high exam score	Jealous	1.70 (1.18)	5.87 (1.81)
Laughed and called the lady a “fat ass” when she walked past them	Rude	1.17 (0.38)	6.23 (1.83)
Splashed the homeless man by purposefully driving into a nearby puddle.	Mean	1.03 (0.18)	6.03 (2.06)
Blocked the grocery aisle with the shopping cart so people could not walk past	Annoying	1.63 (0.85)	5.57 (1.98)
Ensured vegetarian options were on the menu for the student welcome event	Considerate	6.47 (.86)	6.70 (.50)

Worked multiple jobs to save money for their new business	Ambitious	6.37 (.81)	6.53 (.97)
Complimented Ben on his final project presentation	Friendly	6.47 (.73)	6.64 (.81)
Intervened to save a stranger despite being badly outnumbered	Brave	6.3 (.93)	6.63 (.61)
Took off their cap for the national anthem	Respectful	6.07 (1.08)	6.37 (.93)
Was accepted to showcase their work at the art museum downtown	Creative	6.63 (.76)	6.60 (.67)
Interrupted the professor while they were talking to another student	Impolite	1.90 (0.80)	5.90 (1.81)
Paid attention to the couple's conversation from the table next to them	Nosy	2.87 (1.22)	5.77 (1.30)
Insisted on walking to the cafeteria even though someone told them it was closed	Stubborn	2.87 (1.14)	5.67 (1.52)
Ordered the rest of the group to continue working even though everyone was tired	Bossy	2.27 (1.01)	5.87 (1.46)
Attempted to steal a new car but got locked inside	Stupid	1.47 (0.82)	5.8 (1.81)
Dropped an expensive piece of artwork as they removed the packaging	Clumsy	1.93 (1.11)	5.30 (1.99)

APPENDIX C-FRIEND REQUEST MEASURE

Instructions: In this next part of the study, you'll be shown a picture of a person. We want to see what your gut instinct about them is. For each person, indicate whether you'd accept them as a friend on social media and whether you'd like to follow them back.

Example of items shown to participants

Do you want to confirm or delete this friend request?

Do you want to follow this person?

APPENDIX D-MODIFIED VOODOO DOLL TASK

Instructions: So far in this study, we've asked you to form impressions of different people. Research shows that, not only are those impressions fairly accurate, those types of first impressions are important for predicting people's future behavior.

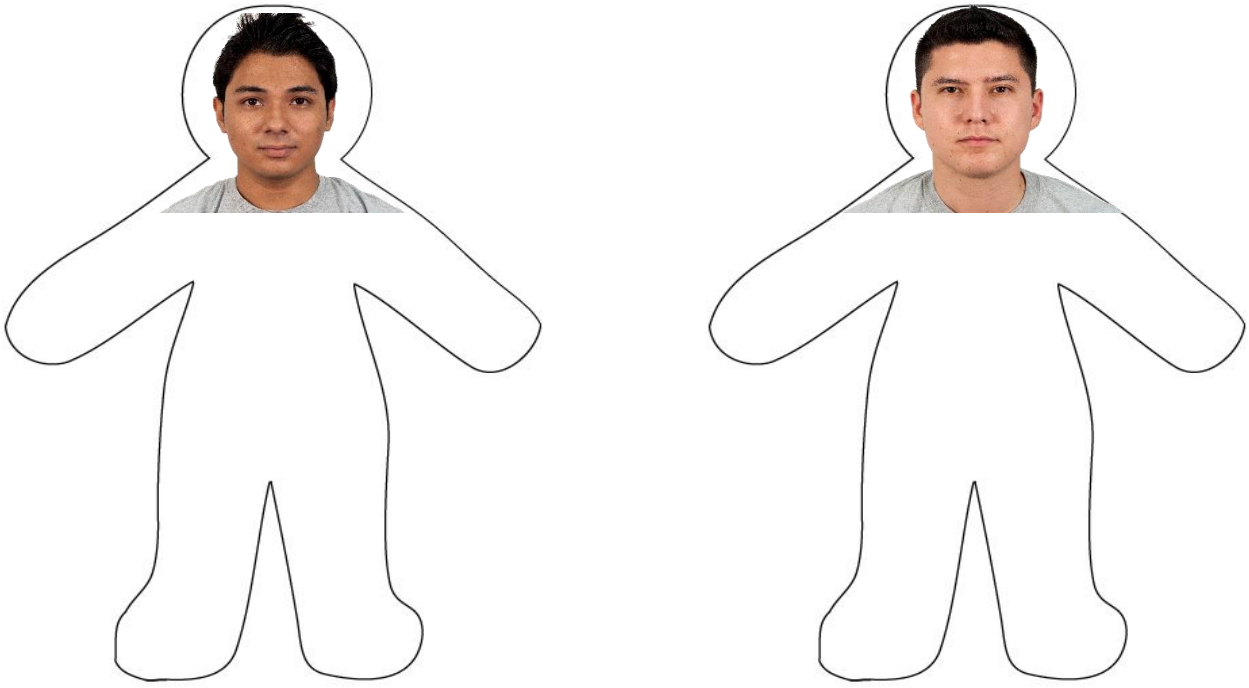
For the next part of the study, we want you to imagine you're trying to restore balance in the universe by assigning shots of bad karma to pairs of people. Karma is defined as "the sum of a person's actions that is viewed as deciding one's fate". Thus, bad karma is earned by people who perform negative behaviors or to people who do not deserve to be rewarded in the future. The more bad karma a person earns, the more likely they are to be punished in the future for their bad behavior.

You'll be shown a pair of dolls, each with a picture of a face that you formed an impression of early. Your job is to deliver bad karma to each person based on the impression that you made of them. For each pair, you must deliver 5 shots of bad karma. You can deliver those shots any way you see fit but you have to use all 5 (e.g., 1 shot for person 1, 4 shots for person 2; 2 shots for person 1, 3 shots for person 2, etc.). Each time you deliver a shot of bad karma, you'll see a dot appear on the doll. Don't think too much about these decisions. Rely on your gut instinct about each person.

Note. This task will be programed using Qualtrics hotspot or heatmap option. When participants click on the target, a mark will appear, so people know where the shots were delivered. Pairs will be matched on valence and gender. One target will be from the control condition and the other from the relearning condition.

Example of items shown to participants

Give each of the following people the bad karma they deserve. You must use 5 shots of bad karma across the pair of people below.



APPENDIX E-COUNTERBALANCE CONDITIONS FOR EXPERIMENT 1

Version 1				
Trait Paired	**Picture**	**Trial Type**	**Target Gender**	**Valence**
Caring	LF212	Relearning	Female	Positive
Smart	LF214	Relearning	Female	Positive
Helpful	LF209	Relearning	Female	Positive
Lazy	LF204	Relearning	Female	Negative
Selfish	LF252	Relearning	Female	Negative
Jealous	LF215	Relearning	Female	Negative
Polite	LM225	Relearning	Male	Positive
Honest	LM207	Relearning	Male	Positive
Loyal	LM252	Relearning	Male	Positive
Rude	LM249	Relearning	Male	Negative
Mean	LM243	Relearning	Male	Negative
Annoying	LM232	Relearning	Male	Negative
Considerate	LF226	Control	Female	Positive
Ambitious	LF231	Control	Female	Positive
Friendly	LF254	Control	Female	Positive
Impolite	LF238	Control	Female	Negative
Nosy	LF251	Control	Female	Negative
Stubborn	LF217	Control	Female	Negative
Brave	LM210	Control	Male	Positive
Respectful	LM229	Control	Male	Positive
Creative	LM246	Control	Male	Positive
Clumsy	LM213	Control	Male	Negative
Stupid	LM230	Control	Male	Negative
Bossy	LM239	Control	Male	Negative
Version 2				
Trait Paired	**Picture**	**Trial Type**	**Target Gender**	**Valence**
Caring	LM210	Relearning	Male	Positive
Smart	LM229	Relearning	Male	Positive
Helpful	LM246	Relearning	Male	Positive
Lazy	LM213	Relearning	Male	Negative
Selfish	LM230	Relearning	Male	Negative
Jealous	LM239	Relearning	Male	Negative
Polite	LF226	Relearning	Female	Positive
Honest	LF231	Relearning	Female	Positive
Loyal	LF254	Relearning	Female	Positive
Rude	LF238	Relearning	Female	Negative
Mean	LF251	Relearning	Female	Negative
Annoying	LF217	Relearning	Female	Negative
Considerate	LM225	Control	Male	Positive
Ambitious	LM207	Control	Male	Positive
Friendly	LM252	Control	Male	Positive

Impolite	LM249	Control	Male	Negative
Nosy	LM243	Control	Male	Negative
Stubborn	LM232	Control	Male	Negative
Brave	LF212	Control	Female	Positive
Respectful	LF214	Control	Female	Positive
Creative	LF209	Control	Female	Positive
Clumsy	LF204	Control	Female	Negative
Stupid	LF252	Control	Female	Negative
Bossy	LF215	Control	Female	Negative
Version 3				
Trait Paired	**Picture**	**Trial Type**	**Target Gender**	**Valence**
Brave	LF245	Relearning	Female	Positive
Respectful	LF216	Relearning	Female	Positive
Creative	LF239	Relearning	Female	Positive
Clumsy	LF242	Relearning	Female	Negative
Stupid	LF240	Relearning	Female	Negative
Bossy	LF222	Relearning	Female	Negative
Considerate	LM238	Relearning	Male	Positive
Ambitious	LM235	Relearning	Male	Positive
Friendly	LM233	Relearning	Male	Positive
Impolite	LM242	Relearning	Male	Negative
Nosy	LM211	Relearning	Male	Negative
Stubborn	LM217	Relearning	Male	Negative
Polite	LF208	Control	Female	Positive
Honest	LF246	Control	Female	Positive
Loyal	LF213	Control	Female	Positive
Rude	LF227	Control	Female	Negative
Mean	LF249	Control	Female	Negative
Annoying	LF235	Control	Female	Negative
Caring	LM216	Control	Male	Positive
Smart	LM202	Control	Male	Positive
Helpful	LM226	Control	Male	Positive
Lazy	LM219	Control	Male	Negative
Selfish	LM221	Control	Male	Negative
Jealous	LM241	Control	Male	Negative
Version 4				
Trait Paired	**Picture**	**Trial Type**	**Target Gender**	**Valence**
Brave	LM216	Relearning	Male	Positive
Respectful	LM202	Relearning	Male	Positive
Creative	LM226	Relearning	Male	Positive
Clumsy	LM219	Relearning	Male	Negative
Stupid	LM221	Relearning	Male	Negative
Bossy	LM241	Relearning	Male	Negative
Considerate	LF208	Relearning	Female	Positive
Ambitious	LF246	Relearning	Female	Positive

Friendly	LF213	Relearning	Female	Positive
Impolite	LF227	Relearning	Female	Negative
Nosy	LF249	Relearning	Female	Negative
Stubborn	LF235	Relearning	Female	Negative
Polite	LM238	Control	Male	Positive
Honest	LM235	Control	Male	Positive
Loyal	LM233	Control	Male	Positive
Rude	LM242	Control	Male	Negative
Mean	LM211	Control	Male	Negative
Annoying	LM217	Control	Male	Negative
Caring	LF245	Control	Female	Positive
Smart	LF216	Control	Female	Positive
Helpful	LF239	Control	Female	Positive
Lazy	LF242	Control	Female	Negative
Selfish	LF240	Control	Female	Negative
Jealous	LF222	Control	Female	Negative

Note: PositiveRLFemale, PositiveRLMale, NegativeRLFemale, NegativeRLMale, PositiveControlFemale, PositiveControlMale, NegativeControlFemale, and Negative ControlMale have pools of 3 photos each. Those photos are randomly paired with sentences that belong in those categories. Versions 1 and 2 use the same pool of photos but the relearning photos in 1 are the control photos in 2. Versions 3 and 4 use the same set of photos but the relearning photos in 3 are the control photos in 4. Versions 1-2 use different photos than 3-4.

APPENDIX F- SENTENCES USED IN EXPERIMENT 1

Sentence shown during Exposure Phase	Trait used for Learning Phase	Trial Type	Valence	Stimulus Set
Helped the elderly lady pack her groceries into the car	Caring	Relearning	Positive	A
Aced the neuroscience project for their psychology class	Smart	Relearning	Positive	A
Gave directions to the freshman on how to get to the student union	Helpful	Relearning	Positive	A
Opened the door for the delivery man with the giant box	Polite	Relearning	Positive	A
Discreetly told their friend that they were wearing torn pants	Honest	Relearning	Positive	A
Never shares any juicy secrets about any of their friends	Loyal	Relearning	Positive	A
Spent the day watching Netflix instead of working on the project due at midnight	Lazy	Relearning	Negative	A
Ate the last serving of food before everyone else got a chance to eat	Selfish	Relearning	Negative	A
Bad mouthed their classmate for getting a high exam score	Jealous	Relearning	Negative	A
Laughed and called the lady a “fat ass” when she walked past them	Rude	Relearning	Negative	A
Splashed the homeless man by purposefully driving into a nearby puddle.	Mean	Relearning	Negative	A
Blocked the grocery aisle with the shopping cart so people could not walk past	Annoying	Relearning	Negative	A
Ensured vegetarian options were on the menu for the student welcome event	Considerate	Relearning	Positive	B
Worked multiple jobs to save money for their new business	Ambitious	Relearning	Positive	B
Complimented Ben on his final project presentation	Friendly	Relearning	Positive	B
Jumped in front of the moving car to save the child on the road	Brave	Relearning	Positive	B
Took off their cap for the national anthem	Respectful	Relearning	Positive	B
Was accepted to showcase their work at the art museum downtown	Creative	Relearning	Positive	B
Interrupted the professor while they were talking to another student	Impolite	Relearning	Negative	B
Paid attention to the couple’s conversation from the table next to them	Nosy	Relearning	Negative	B
Insisted on walking to the cafeteria even though someone told them it was closed	Stubborn	Relearning	Negative	B

Ordered the rest of the group to continue working even though everyone was tired	Bossy	Relearning	Negative	B
Attempted to steal a new car but got locked inside	Stupid	Relearning	Negative	B
Dropped the television while moving out of their apartment	Clumsy	Relearning	Negative	B
Thought they would like her new haircut.	Reliable	Control	Positive	Both
Enjoyed watching varsity basketball tryouts for 4 years in a row.	Trustful	Control	Positive	Both
Asked where the stars go shopping.	Clever	Control	Positive	Both
Were light on their feet during the foxtrot.	Patient	Control	Positive	Both
Liked movies more than parties.	Dependable	Control	Positive	Both
Returned to where she lost her own wallet with all her money in it	Inventive	Control	Positive	Both
Drove to the only newsstand, 20 blocks away.	Tender	Control	Positive	Both
Put out the best chocolates before the guests arrived.	Forgiving	Control	Positive	Both
Leaned the desk back on two of its feet.	Humorous	Control	Positive	Both
Couldn't get a chance to greet her new neighbor.	Shallow	Control	Negative	Both
Didn't win first place in the citywide high school science fair.	Gloomy	Control	Negative	Both
Couldn't hold a full-time job while being a full-time student.	Angry	Control	Negative	Both
Took 15 minutes to find a place for her car in the parking lot.	Gullible	Control	Negative	Both
Hoped that they knew that their new glasses looked funny.	Lonely	Control	Negative	Both
Screamed for others to help find the phone.	Deceptive	Control	Negative	Both
Walked up one flight to take the elevator.	Anxious	Control	Negative	Both
Suddenly remembered he hadn't finished his paper, after 20 minutes at the shore.	Weak	Control	Negative	Both
Turned off the local talk show about a distant toxic waste dump.	Cowardly	Control	Negative	Both

APPENDIX G-WORD SEARCH USED IN EXPERIMENTS 1 AND 2

PERSONALITY TRAITS PARTICIPANT #

F	R	E	L	I	A	B	L	E	K	L	U
M	O	F	F	I	V	Q	B	C	R	R	N
E	P	A	T	I	E	N	T	L	K	S	E
A	N	N	O	Y	I	N	G	E	U	L	F
N	P	E	J	L	E	X	A	V	K	B	S
U	V	V	O	B	L	O	N	E	L	Y	V
Z	D	D	E	N	V	P	G	R	Q	C	P
E	L	J	R	B	R	O	R	Y	V	A	C
C	O	W	A	R	D	L	Y	F	H	R	V
R	Y	G	S	A	O	I	B	M	R	I	F
L	A	Z	Y	V	P	T	F	Q	U	N	A
F	L	I	V	E	B	E	R	Z	D	G	F
I	M	C	R	E	A	T	I	V	E	L	Y
J	S	X	F	R	I	W	E	J	U	U	F
A	U	C	Y	H	D	F	N	B	N	E	F
S	E	L	F	I	S	H	D	E	E	P	U
D	F	U	S	B	C	L	L	X	E	U	R
K	I	M	I	S	Q	O	Y	Z	O	I	W
N	O	S	Y	T	X	E	L	R	M	S	X
L	H	Y	H	U	M	O	R	O	U	S	R
J	K	N	C	M	I	C	Y	O	C	A	D

ANGRY
ANNOYING
BRAVE
CARING
CLEVER
CLUMSY
COWARDLY
CREATIVE
FRIENDLY
HUMOROUS
LAZY
LONELY
LOYAL
MEAN
NOSY
PATIENT
POLITE
RELIABLE
RUDE
SELFISH

APPENDIX H-SUPPLEMENTAL FINDINGS FOR EXPERIMENT 1

Cued Recall

There was a significant interaction between stimulus set and trial type, $F(1, 83) = 6.57$, $p = .012$, $\eta^2_p = .073$. This interaction was driven by responses to stimulus set A where the spontaneous trait inference effect was stronger for those who completed stimulus set A ($\eta^2_p = .16$) compared to those in set B ($\eta^2_p = .002$). Importantly, recall accuracy for relearning trials did not differ across stimulus set A ($M = .42$, $SD = .20$) and stimulus set B ($M = .35$, $SD = .21$), $F(1, 83) = 2.11$, $p = .150$, $\eta^2_p = .025$. Responses to control trials did not differ across stimulus set A ($M = .33$, $SD = .19$) and stimulus set B ($M = .36$, $SD = .17$), $F(1, 83) = .62$, $p = .433$, $\eta^2_p = .007$.

Social Media Friending

There was a significant interaction between stimulus set and valence, $F(1, 83) = 6.57$, $p = .012$, $\eta^2_p = .073$. Friending was higher for positive targets in Set A ($M = .49$, $SD = .19$) compared to negative targets in Set A ($M = .40$, $SD = .18$), $F(1, 41) = 10.11$, $p = .003$, $\eta^2_p = .107$. There were no significant differences in friending for positive targets in Set B ($M = .45$, $SD = .19$) compared to negative targets in Set B ($M = .50$, $SD = .14$), $F(1, 42) = 3.59$, $p = .065$, $\eta^2_p = .041$. There were no significant differences in responses to positive targets from Set A ($M = .49$, $SD = .19$) compared to positive targets in Set B ($M = .45$, $SD = .19$), $F(1, 83) = .74$, $p = .391$, $\eta^2_p = .009$.

There was a significant three-way interaction between stimulus set, trial type, and target gender, $F(1, 83) = 21.91$, $p < .001$, $\eta^2_p = .209$. Participants friended relearning females in Set B ($M = .62$, $SD = .22$) more than control females ($M = .54$, $SD = .18$) in Set B, $F(1, 42) = 7.40$, $p = .009$, $\eta^2_p = .081$. Participants also friending relearning males from Set A ($M = .43$, $SD = .24$) more than control males in Set A ($M = .31$, $SD = .24$), $F(1, 41) = 18.66$, $p < .001$, $\eta^2_p = .182$.

There was also a significant four way interaction between stimulus set, trial type, valence, and gender, $F(1, 83) = 9.37$, $p = .003$, $\eta^2_p = .101$. Because there are no predictions on how responses for this interaction would be meaningful, the interaction was not broken down into simple effects.

APPENDIX I-SENTENCES USED FOR EXPERIMENT 2

Sentence	Trait	Trial Type	Valence	Directed Behavior
[Name] was light on her feet during the foxtrot.	Caring	filler	positive	Other
[Name] leaned the desk back on two of its feet.	Humorous	filler	positive	Other
[Name] took 15 minutes to find a place for her/his car in the parking lot.	Stupid	filler	negative	Other
[Name] jumped in front of the moving car to save the puppy on the road.	Brave	relearn	positive	Other
[Name] complimented Ben on his final project presentation.	Friendly	relearn	positive	Other
[Name] never shares any juicy secrets about any of her/his friends.	Loyal	relearn	positive	Other
[Name] discreetly told her/his friend that they were wearing torn pants.	Honest	relearn	positive	Other
[Name] opened the door for the delivery man with the giant box.	Polite	relearn	positive	Other
[Name] gave directions to the freshman on how to get to the student union.	Helpful	relearn	positive	Other
[Name] interrupted the professor while they were talking to another student.	Impolite	relearn	negative	Other
[Name] dropped the television while moving out of her/his apartment.	Clumsy	relearn	negative	Other
[Name] blocked the grocery aisle with her/his shopping cart so people could not walk past.	Annoying	relearn	negative	Other
[Name] laughed and called the lady a fat ass when she walked past them.	Rude	relearn	negative	Other
[Name] bad mouthed her classmate for getting a high grade on their exam.	Jealous	relearn	negative	Other
[Name] ate the last serving of food before others had the chance to eat.	Selfish	relearn	negative	Other
[Name] returned to where s/he lost his own wallet with all his money in it.	Patient	control	positive	Other
[Name] put out the best chocolates before the guests arrived.	Tender	control	positive	Other
[Name] asked where the stars go shopping.	Forgiving	control	positive	Other
[Name] enjoyed watching varsity basketball tryouts for 4 years in a row.	Inventive	control	positive	Other
[Name] thought they would like their new haircut.	Clever	control	positive	Other

[Name] likes movies more than parties.	Reliable	control	positive	Other
[Name] couldn't hold a full-time job while being a full-time student.	Weak	control	negative	Other
[Name] hoped they knew that their new glasses looked funny.	Cowardly	control	negative	Other
[Name] didn't win first place in the citywide science fair.	Gullible	control	negative	Other
[Name] screamed for others to help find the phone.	Lonely	control	negative	Other
[Name] walked up one flight to take the elevator.	Angry	control	negative	Other
[Name] couldn't get a chance to greet her/his new neighbor.	Shallow	control	negative	Other
[Name] turned off the local talk show about a distant toxic waste dump.	Nosy	filler	negative	Other
[Name] suddenly remembered s/he hadn't finished his paper, after 20 minutes at the store.	Stubborn	filler	negative	Other
[Name] drove to the only newsstand, 20 blocks away.	Reliable	filler	positive	Other
[Name] was light on her feet during the foxtrot.	Caring	filler	positive	Self
[Name] leaned the desk back on two of its feet.	Humorous	filler	positive	Self
[Name] took 15 minutes to find a place for her/his car in the parking lot.	Stupid	filler	negative	Self
[Name] jumped in front of the moving car to save my puppy on the road.	Brave	relearn	positive	Self
[Name] complimented me on my final project presentation.	Friendly	relearn	positive	Self
[Name] never shares any of my juicy secrets with any of our friends.	Loyal	relearn	positive	Self
[Name] discreetly told me that I was wearing torn pants.	Honest	relearn	positive	Self
[Name] opened the door for me while I was carrying a giant box.	Polite	relearn	positive	Self
[Name] gave me directions on how to get to the student union.	Helpful	relearn	positive	Self
[Name] interrupted the professor while they were talking to me.	Impolite	relearn	negative	Self
[Name] dropped my television while moving out of my apartment.	Clumsy	relearn	negative	Self
[Name] blocked the grocery aisle with her/his shopping cart so I could not walk past.	Annoying	relearn	negative	Self
[Name] laughed and called me he lady a fat ass when I walked past them.	Rude	relearn	negative	Self
[Name] bad mouthed me for getting a high grade on the exam.	Jealous	relearn	negative	Self

[Name] ate the last serving of food before I had the chance to eat.	Selfish	relearn	negative	Self
[Name] returned to where I lost his my wallet with all my money in it.	Patient	control	positive	Self
[Name] put out the best chocolates before I arrived.	Tender	control	positive	Self
[Name] asked where I go shopping.	Forgiving	control	positive	Self
[Name] enjoyed watching varsity basketball tryouts with me for 4 years in a row.	Inventive	control	positive	Self
[Name] thought I would like their new haircut.	Clever	control	positive	Self
[Name] likes my movies more than my parties.	Reliable	control	positive	Self
[Name] couldn't hold a full-time job at my office while being a full-time student.	Weak	control	negative	Self
[Name] hoped I knew that my new glasses looked funny.	Cowardly	control	negative	Self
[Name] didn't win first place in the citywide science fair I judged.	Gullible	control	negative	Self
[Name] screamed for me to help find the phone.	Lonely	control	negative	Self
[Name] walked up one flight to take the elevator with me.	Angry	control	negative	Self
[Name] couldn't get a chance to greet my new neighbor.	Shallow	control	negative	Self
[Name] turned off the local talk show about a distant toxic waste dump.	Nosy	filler	negative	Self
[Name] suddenly remembered s/he hadn't finished his paper, after 20 minutes at the store.	Stubborn	filler	negative	Self
[Name] drove to the only newsstand, 20 blocks away.	Reliable	filler	positive	Self

Vita

Jessica R. Bray received her Bachelor of Science in Psychology with a minor in Mathematics from the University of Texas at El Paso in 2016. Jessica then continued her graduate education at the University of Texas at El Paso and earned her Masters of Arts in Experimental Psychology in 2019. Jessica has two lines of research: spontaneous first impressions and intergroup communication. She has authored two book chapters and published scholarly work in *Group Processes and Intergroup Relations, Social Psychological and Personality Science, and Social Psychology Bulletin.*

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