Running Head: SUBLIMINAL SELF-AFFIRMATION ON STEREOTYPE ACTIVATION

Do Unbeknownst Good Feelings Protect People From Bad Thoughts? The Effect of Subliminal
Self-Affirmation on Stereotype Activation.

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Abstract

The study investigated the effect of subliminal self-affirmation on the time course of stereotype activation. Participants received bogus negative feedback on an intelligence test, then during a practice lexical decision task (LDT), they were subliminally presented with words related to either a life domain they valued most or a life domain they valued least. Participants then viewed a video portraying either a Black or White person discussing campus life, and finally completed the final LDT, which gauged Black stereotype activation. It was predicted that self-threatened participants that were subliminally self-affirmed would show baseline activation of the Black stereotype in contrast to self-threatened participants that were not subliminally self-affirmed. The results of the study did not support this prediction. However, the study did replicate a past finding that showed that self-threat extends the time that the Black stereotype remains activated after exposure to a Black individual. Possible causes for the lack of effect of the subliminal self-affirmation manipulation and new questions raised by the study are discussed.

Do Unbeknownst Good Feelings Protect People From Bad Thoughts? The Effect of Subliminal Self-Affirmation on Stereotype Activation.

Imagine learning that you received a failing grade on an important test. While broodingly walking towards your regular bus stop, an Aboriginal person crosses the sidewalk. A moment later inside the bus, an individual initiates a conversation about Aboriginal rights. In this situation, will your brief exposure to the Aboriginal individual on the sidewalk unconsciously activate stereotypical thoughts that could colour your judgment during the conversation? Now, imagine the same situation except that the individual on the bus complimented your bubbly smile before asking you about Aboriginal rights. Would you be *less* likely to have stereotypical thoughts still activated that could affect your judgment during the Aboriginal rights conversation?

This thesis will explore such a situation in an attempt to understand more precisely the factors that affect when activated stereotypical thoughts colour our judgments. More precisely, it will examine whether reinforcing an individual's self-concept outside their awareness can prevent the activation of stereotypical thoughts or ensure their dissipation.

Stereotyping in general is an important phenomenon that needs to be better understood to promote better relations within society. A better understanding of general stereotype activation processes, for example, may help employment recruiters make fairer decisions by making interviewers more aware of the conditions in which involuntary stereotyping may affect their behaviour.

In this thesis, I will present a brief overview of the relevant extant literature, followed by an introduction to the current design and hypotheses. Finally, I will describe the procedure used and the results of the study, and discuss implications of these results.

The number of studies examining stereotyping has recently been growing and the subject matter has become an exciting line of research in social psychology. Some of these studies have showed that people often automatically activate stereotypes when they encounter an individual from a stereotyped group, even when the exposure is subliminal (e.g., Chen & Bargh, 1997). Although not all people activate stereotypes upon exposure to stereotypical cues (e.g., people that are cognitively busy or that are low in prejudice), the conclusion that stereotype activation may be fairly involuntary is unsettling for many. More recent research has demonstrated that this conclusion must be qualified by the fact that this activation may *not* remain activated for very long (Kunda, Davies, Adams, & Spencer, 2002). I will come back to this important idea later in the thesis.

Earlier stereotyping research has focused on supraliminal manipulations of environmental stereotype cues. For example, Fein and Spencer (1997) showed that stereotyping is affected by factors including self-image maintenance goals, self-affirmation, and state self-esteem. More specifically, they showed that participants whose self was threatened, evaluated a Jewish women (portrayed in a video) more negatively and in turn increased their state self-esteem more than participants whose self was not threatened. Additionally, self-affirmed participants showed less stereotype application than participants who were not self-affirmed (Fein & Spencer, 1997).

Fein and Spencer's (1997) study involved the dependent measure of stereotype application, which is conceptually distinct from stereotype activation. Although it is probably safe to say that when one applies a stereotype that the stereotype had been activated, it is not correct to assume that an activated stereotype will necessarily be applied. Kunda et al. (2002) demonstrated that although stereotype activation emerges initially, the stereotype does not have to be applied and that eventually stereotype activation may fade.

Later studies have shown that even subliminal manipulations of environment cues can have important effects on stereotyping (e.g., Spencer, Fein, Wolfe, Fong, & Dunn, 1998; Devine, 1989). In these experiments, photographs of faces are briefly flashed on a computer screen and then a word stem completion task or a lexical decision task is used to assess the activation of the relevant stereotype. Thus, conscious exposure to stereotypically related stimuli is *not* needed to activate stereotypes related to the stimuli. Even stereotypically related stimuli that are outside of awareness can, under certain conditions, affect our cognitions.

Certain environmental and internal factors, however, can prevent stereotypes from automatically being activated. If participants are put under cognitive load (e.g., asked to remember an 8-digit alphanumeric character during a lexical decision task), they may not automatically activate stereotypes related to environmental stimuli they are exposed to (Gilbert & Hixon, 1991; Spencer et al., 1998). Internal factors, such as when individuals are motivated to avoid being prejudice, can also affect whether or not stereotypes will automatically be activated (Spencer, Fein, Davies, & Hoshino-Browne, 2003). More specifically, Spencer et al. (2003) showed that students that were motivated to avoid being prejudice (after being told they were high on “contemporary racism” and low on “racial tolerance”) were significantly less likely to stereotypically complete word stems than students that received neutral feedback.

Various theories of stereotyping have been offered to account for the stereotyping data that have proliferated in recent years (Brewer, 1988; Fiske & Neuberg, 1990; Kunda & Thagard, 1996). The theories have attempted to capture the specific conditions needed for stereotype activation and application to be inhibited or executed. I will discuss briefly a goal-based theory of stereotype activation and Bargh’s (1997) auto-motive model.

Kunda and Spencer (2003) have offered a goal-based theoretical framework to understand stereotype activation and application. They suggest that three goals, namely comprehension goals, self-enhancement goals, and the motivation to avoid prejudice, interact to affect whether or not an individual will have stereotypical cognitions accessible and whether they will use these thoughts in future evaluations. This recent theory has placed a lot more emphasis on stereotype activation and has also emphasized the role of situational influences in addition to personal chronic factors. The theory also assumes that multiple goals can operate simultaneously to affect one's cognitions and behaviours, in contrast to other theories such as Brewer's (1988) that only focus on one goal at a time.

Bargh's (1997) auto-motive model emphasizes the automatic nature of stereotype activation and application. He proposes that goals that are pursued nearly always in a certain environmental situation will become automatically activated given that environmental situation, independent of the perceiver's conscious awareness. For example, when one encounters a member of a stereotyped group, a self-enhancement goal (and its associated plans to attain this goal) may automatically be activated, because of past experience in which that goal has been frequently attained. Thus, the goal of re-establishing our self-worth eventually becomes a "skill" that may become automatic, just like the skill of driving becomes very automatic after a certain degree of practice (Bargh, 1997). Thus, once a goal is activated, whether consciously (e.g., goal to avoid prejudice) or preconsciously (e.g., goal to re-establish one's self-worth), that goal operates on any relevant input from the environment, even when a person does not intend to process the environmental information in this different light.

As mentioned in the introductory paragraph, one less pessimistic finding from stereotype research is that stereotypical thoughts, although easily activated, may not remain activated for

very long after they have initially been triggered. Kunda et al. (2002) demonstrated that the activation of a stereotype dissipates after 12 minutes of watching a video containing a member of a stereotyped group. These results have been replicated using real-world interactions with an Asian confederate (Kunda, Davies, Hoshino-Browne, & Jordan, 2003).

The stereotype activation dissipation line of research remains fairly unexplored. Specifically, what factors affect the dissipation and non-dissipation of stereotype activation? Hoshino-Browne and Spencer (2004) found that individuals that were given bogus negative feedback on an intelligence test did *not* show the dissipation of stereotype activation after a 12-minute exposure to a member of a stereotyped group. Thus, it seems that if participants have a self-enhancement goal active, then stereotypical cognitions will remain activated presumably until they are no longer required (i.e., when the goal has been attained or individuating information has rendered that goal irrelevant).

Thus, in light of the extant literature on self-affirmation and stereotype activation, it is interesting to ask whether affirming self-threatened participants would indeed ensure the dissipation of stereotypes activated due to exposure to stereotypical cues from the environment. The logic follows from past studies that showed that self-affirmed participants showed significantly less stereotype application than participants that had not been self-affirmed (i.e., did not write about values that were important to them) (Fein & Spencer, 1997). Thus, non-affirmed participants presumably had a motive to re-establish their self-worth, and thus applied the relevant stereotype, given the opportunity. And given the logic of the conceptual distinction between stereotype activation and application, it follows that these participants had stereotypical thoughts activated, given that they had applied the stereotype. Thus, it becomes interesting to wonder whether the self-affirmed participants no longer had stereotypical thoughts activated,

given that they no longer had the goal to re-establish their self-worth. The current study aims to test this possibility.

In this study, we examine an even more intriguing possibility. Although supraliminally affirming participants eliminated the need for these participants to re-establish their self-worth, and in turn not apply a stereotype, it remains an open question whether *subliminally* affirming participants would engender the same effect. Using the logic from Bargh's (1997) auto-motive model, which states that preconsciously activated goals operate on relevant input from a person's social environment, it may be possible that pre-consciously affirming someone may have the same effect as consciously affirming them. The self-threat activates a goal to re-establish one's self-worth, which operates on environmental input, and so preconscious affirmational stimuli should fulfill this goal and thus ensure the dissipation of the activated stereotypical thoughts. Thus, we would expect the subliminal self-affirmation manipulation to eliminate the goal of the participants to re-establish their self-worth. Consequently, given that this goal is eliminated, the stereotypical thoughts that were activated due to the exposure of a member of a stereotyped group and the self-threat manipulation should *no longer* be activated.

However, Gawronski and Strack (2004) would make a different prediction for the subliminal self-affirmation manipulation based on their theorizing about associative and propositional processes. They would consider self-affirmation as a higher-order active propositional process in contrast to a lower-level associative process. They characterize propositional thinking as the "application of syllogistic rules to generate or transform declarative knowledge" (pp. 536) and view associative processing as "a process of spreading activation in a network formed on the basis of spatio-temporal contiguity" (pp. 536). Hence in line with their reasoning, the subliminal self-affirmation manipulation may *activate* certain associations used in

these higher-order propositional processes, but may not be sufficient to *elicit* the higher-order process. Thus, Gawronski and Strack (2004) would predict that a subliminal self-affirmation would not reduce stereotype activation.

The current study will examine the role of subliminal self-affirmation on the prevention or dissipation of stereotype activation. More precisely, all participants in the study will be threatened by receiving false feedback on a short intelligence test. Half of the participants will then be subliminally affirmed with words related to a value that is important to them during a lexical decision task and the other half will be subliminally affirmed with words related to a value that is unimportant to them (values determined by a short demographics form completed by participants upon arrival). All of the participants will then watch a video containing a White or Black confederate discussing campus life. After viewing the video, participants will then complete another lexical decision task that will contain embedded words related to the Black stereotype. The reaction time data will then be analyzed to determine whether participants that were not subliminally self-affirmed identified words related to the Black stereotype significantly faster than subliminally self-affirmed participants or participants that were exposed to the White video. It is predicted that self-threatened participants that are subliminally self-affirmed will show baseline activation of the Black stereotypical words in contrast to self-threatened participants that are not subliminally self-affirmed.

Method

Participants and Design

Eighty-six introductory psychology students participated in the study. The data of three participants had to be discarded because of software malfunction. The participants were not screened for gender or ethnicity. The 83 participants were randomly assigned to one of the

following four conditions: Black video non-self-affirmed, Black video self-affirmed, White video non-self-affirmed, or White video self-affirmed.

Procedure

Upon arrival to the laboratory, participants were informed that they would be completing a short intelligence test, watching a video, and completing a word identification task, which purportedly would assess their cognitive engagement with the video. Participants were also informed that they would be completing practice trials of the word identification task beforehand in order to familiarize themselves with it. Participants then read and signed the Information Consent Letter and subsequently completed a short demographics form and a Life Values Scale (LVS) that allowed the experimenter to be blind to conditions. The LVS instructed the participants to sequentially rank order four domains of life proposed by Allport and Vernon (1931): Social Life and Relationships, Business, Pursuit of Knowledge, and Arts. The form then randomly assigned the participants to one of the four conditions and indicated to the experimenter which video and LDT programs to run.

Participants then read on-screen instructions for the LDT and were presented a verbal description of the task. They were instructed to fixate on the center of the screen when they heard a tone and to indicate as quickly and accurately as possible whether a target string was a word or a non-word. The LDT was created using DirectRT software and the stimuli in each trial were presented as depicted in Figure 1. Each trial started by a tone stimulus presented for 300 ms, then a subliminal prime or a blank prime was presented for 12 ms. Subsequently, a forward mask of ampersands (&&&&&) was presented for 200 ms, then a target string appeared (in a black 26 pt. Times New Roman font) until the participants responded, and then a blank screen appeared for 1000 ms before the start of the next trial. This first practice LDT did not contain

any subliminal primes and consisted of 30 trials including 15 word trials and 15 non-word trials which were unrelated to the Black stereotype and were randomized for each participant.

Participants then read about a new intelligence test that researchers were using across a large sample of university students. The short intelligence test consisted of analogies, antonyms, sentence completions, syllogisms, and verbal-nonverbal matching (procedures duplicated from Fein & Spencer, 1997, study 2). All of the participants in the current study received bogus feedback informing them that they had scored in the 46th percentile (which participants in Fein & Spencer, 1997 found to be quite negative).

Participants then completed another LDT, which was identical to the first LDT except that words were subliminally presented to the participants for 12 ms in the foveal field immediately after the tone stimulus on 30 of the 40 trials (see figure 1). More specifically, half the participants were flashed with words related to the domain of life they valued the *most* (subliminal self-affirmation) whereas the other half were flashed with words related to the domain of life they valued *least* (subliminal non-self-affirmation). The words *trust*, *love*, and *bond* were used for Social Life and Relationships, *money*, *power*, and *profit* for Business, *science*, *truth*, and *knowledge* for Pursuit of Knowledge, and *express*, *create*, and *beauty* for Arts. This second LDT consisted of 40 trials including 20 non-word trials and 20 word trials which were also unrelated to the Black stereotype and were randomized for each participant.

After completing the second LDT, participants read that they were to evaluate a program developed to help individuals deal with life transitions (procedures adopted from Kunda et al., 2002). A local health council had already conducted interviews with individuals who had gone through life transitions. Participants were informed that they would be asked to evaluate the effectiveness of one of these interviews, given that they had experienced the transition to

university. Their task was to view the videotaped interview and indicate how helpful it would be to a first year student.

After the video, participants then completed a final LDT that included critical words related to the Canadian Black stereotype needed to gauge stereotype activation. Because we did not know how long the subliminal self-affirmation manipulation would last, we also subliminally affirmed participants during this last LDT. The first ten of these trials included subliminal self-affirmation on all trials and included 5 non-word trials and 5 word trials, which were unrelated to the Black stereotype. The following 64 trials consisted of 32 non-word trials in which subliminal self-affirmation occurred on all trials, 16 critical word trials in which subliminal self-affirmation occurred on eight of the trials, and 16 neutral word trials in which self-affirmation occurred on eight of the trials. This was done to allow for additional analysis to verify the effect of the subliminal word flashes on the responses to neutral and critical target words. The 16 critical word trials related to the Canadian Black stereotype were: *race, color, athletic, basketball, rap, crime, dangerous, aggressive, ignorant, uneducated, sexual, dealer, jazz, poor, stupid, drugs*. The critical words were selected because of their frequent mention in pretests asking participants to report culturally held stereotypes of Black Canadians (as used in Steele & Aronson, 1995). The 16 neutral word trials unrelated to the Canadian Black stereotype but each matched on length and frequency to a critical word were: *ready, sour, jeans, staging, conscious, illustrate, basis, clerk, poet, abruptly, parade, weekly, literalism, integral, soap, horizontal*. The target words were randomized for each participant and presented such that critical words never occurred one after the other. After the LDT, participants were probed for suspicion about the intelligence test feedback, thoroughly debriefed, and dismissed.

Design

In sum, the experiment was a 2 (target race: Black or White) $\times$ 2 (subliminal self-affirmation: self-affirmed or non-self-affirmed) $\times$ 2 (word type: stereotypic or neutral) mixed model design, with the first two variables varied between participants and the third varied within participants.

Results

Data Trimming

Trials on which participants answered incorrectly were excluded (2.9% of the data). Additionally, outliers, based on procedures developed by Van Selst and Jolicoeur (1994), were excluded (2.0 %). Analyses of variance (ANOVAs) revealed that there were no differences among conditions in numbers of errors or outliers, all F s < 1 .

Reaction Time Data

Figure 2 presents the results of the study. These data were analyzed with a 2 (target race) $\times$ 2 (subliminal self-affirmation) $\times$ 2 (word type) mixed-model ANCOVA, in which practice words served as a covariate to adjust for individual differences in reaction time. This analysis revealed two main effects. Participants exposed to the Black video responded significantly faster than participants exposed to the White video ($F[1,79] = 4.21, p < .05$) and participants responded faster to critical than neutral words ($F[1,79] = 4.98, p < .05$). Both of these main effects, however, were qualified by a significant 2 (target race) $\times$ 2 (word type) interaction ($F[1, 79] = 3.74, p = .05$, [see figure 3]). Mean response times for stereotypical words by participants who were exposed to the Black video were significantly faster than participants who were exposed to the White video ($F[1,79] = 3.93, p < .05$), but mean response times for neutral words were not significantly different ($F[1,79] = .82, ns$). Additionally, simple effects analysis revealed that in

the Black video condition, participants responded significantly faster to the stereotypic words than the neutral words ($F[1,79] = 7.85, p < .01$). In the White video condition, mean response times for stereotypic and neutral words did not differ significantly ($F[1,79] = .12, ns$). No other main effects or interactions were significant ($F_s < 1$).

Discussion

This study examined whether a subliminal self-affirmation could diminish activation of stereotypical thoughts or lead to the dissipation of these thoughts. Based on Bargh's (1997) logic, it was predicted that the subliminal self-affirmation stimuli would fulfill the goal of the participants to re-establish their self-worth, thus eliminating the need for stereotypical thoughts to remain active. The self-affirmation $\times$ target race $\times$ word type three-way interaction, however, was not significant, and thus the results of the study did not lend support for our prediction. The subliminal self-affirmation manipulation may not have been successful in affirming the participant's self-worth, as both subliminally affirmed and non-affirmed participants exhibited very similar response times to Black stereotypical words.

I propose two possible explanations for the failure of the subliminal self-affirmation manipulation, one methodological and one theoretical. First, the subliminal self-affirmation stimuli may not have been processed at all, given that the words were flashed for 12 ms only and forward masked. This mechanical detail could explain the failure of the self-affirmation to affect activation of the stereotype. Second, even if the subliminal presentation of the self-affirmation words *was* processed subliminally, the manipulation may *not* have actually affirmed the participants. The brief presentation of self-affirmation stimuli may have activated affirmational goals, but may not have actually fulfilled these goals. This reasoning would be in line with

Gawronski and Strack's (2004) logic that affirmational processes are propositional in nature and so require higher-level processing that subliminal manipulations cannot tap into.

Despite the lack of effect of the subliminal self-affirmation manipulation, the results of the study did replicate the findings of Hoshino-Browne and Spencer (2004), in that self-threatened participants showed evidence of stereotype activation even after prolonged exposure to a stereotypic target. Presumably, these stereotypical thoughts remained active for these self-threatened participants because the activated self-enhancement goal rendered these cognitions potentially valuable in the event a stereotype would need to be applied. The first-time replication of this effect adds confidence to the reliability of the finding.

A possible limitation of the current study is that the Canadian Black stereotypical words used in the study may not have been current enough. The words were adapted from Steele and Aronson's (1995) study and so may not reflect the current Canadian Black stereotype. Future studies may want to re-test participants to determine the current words that reflect the Canadian Black stereotype. A second limitation of the study is that the participant's exposure to a member of a stereotyped group was done via a video and not a real interaction.

Altogether, however, the study suggests that more precise questions about affirmational processes and their implications in social perception need to be examined. A future study might profitably examine what situations would allow individuals to activate *and* fulfill an affirmational goal. For example, it would be interesting to test whether participants that have the opportunity to elicit higher-level affirmational processes actually fulfill the affirmational goal in comparison to participants that do *not* have this opportunity. Finally, a replication of this study, but with supraliminal instead of subliminal self-affirmation manipulations is in order to support

the theoretical claims about the effect of self-affirmation on the time course of stereotype activation.

Additionally, many other questions remain about the dissipation of stereotype activation. For example, are prejudiced individuals or individuals that are motivated to avoid prejudice more likely to keep relevant stereotypic thoughts activated during an interaction with a member of a stereotyped group than individuals that are not prejudice or unmotivated to avoid prejudice? Future studies should attempt to refine our understanding of how the time course of stereotype activation is influenced by the perceiver, the perceived, and the interaction between the two.

The present study did not provide evidence for the proposition that affirming participants outside their awareness will affect whether participants maintain or dispose of stereotypical thoughts activated by exposure to a member of a stereotyped group. However, the study corroborated previous data showing that self-threatened participants will maintain stereotypical thoughts active after a prolonged exposure to a member of a stereotyped group. Although this study did not provide new evidence for preconscious processes in social perception, increasingly more preconscious processes are found to operate in social perception. Thus one may wonder about the true role of consciousness in our social world. As Bargh (1997) eloquently put it, “The purpose of consciousness, therefore, may be to connect a parallel mind to a serial world” (pp. 53).

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Figure Captions

Figure 1. Order of the Presentation of Stimuli for the LDT.

Figure 2. Reaction Time to Stereotypic and Neutral Words by Subliminally Self-Affirmed or Non-Self-Affirmed Participants that were Exposed to the Black or White Video (in milliseconds).

Figure 3. Reaction Time to Stereotypic and Neutral Words by Participants that were Exposed to the Black or White Video (in milliseconds).