

MEDIA EFFECTS ON IMPLICIT AND EXPLICIT
ATTITUDES: AN INVESTIGATION OF THE LINGUISTIC
INTERGROUP BIAS

by

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ABSTRACT

The present research investigated the impact of abstraction in language on racial attitudes, a process otherwise known as Linguistic Intergroup Bias (LIB). LIB is a term which describes how the specificity of language used can affect the subject. Specifically, when there are more adjectives and descriptive verbs used in a communication, a person is more likely to recall that information later and associate it with their beliefs (Maass, Salvi, Arcuri & Semin, 2000). Gorham (2006) found that when this type of language appears in print and television news, media viewers will replicate the increased abstraction in their own descriptions of the event. Therefore, if news anchors or copy writers are members of a certain in-group (e.g., Caucasians), they are likely to demonstrate LIB, thereby affecting the viewers – thus this effect has the potential of conveying this subtle bias to millions of people at once. We studied this via news stories in a 2 (LIB: High abstract language vs. Low abstract language) x 3 (Target Race: African American vs. Caucasian vs. not mentioned) between subjects factorial design. Results indicate that high levels of abstraction resulted in a replication of the LIB in target descriptions, along with increased negative explicit attitudes towards African Americans and increased believability in story content. Implications and future directions of this research are discussed.

LIST OF ABBREVIATIONS AND SYMBOLS

α	Cronbach's index of internal consistency
F	Fisher's <i>F</i> ratio: A ratio of two variances
M	Mean: the sum of a set of measurements divided by the number of measurements in the set
SD	Standard deviation, the average deviation of scores from the mean
N	Sample size for the whole study
n	Sample size for a group or condition within a study
<i>p</i>	Probability of a Type 1 error. Less than .05 is typically acceptable.
<	Less than
=	Equal to

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INTRODUCTION

The category five hurricane, Katrina, that decimated the Gulf Coast in August 2005 illuminated aspects of human behavior that can rarely be empirically studied. For instance, this tragedy allowed researchers to examine behavior in survival situations, crisis management with short-term stress, coping with loss, and ultimately recovery (Edmondson, Mills, & Park, 2010; Moore, & Varela, 2010; Olejarski, & Garnett, 2010). Tragedy and disaster also serve as an opportunity for social psychologists to study mechanics of human behavior such as: “mob mentality”, panic, aggression and racism (Adams, O'Brien, & Nelson, 2006; Kemmelmeier, Broadus, & Padilla, 2008; Mawson, 2005). Hurricane Katrina was no exception. After the disaster several incidents of racism were brought to public attention. For instance, a picture appeared online that later received massive amounts of Internet and television attention, the photo depicted a Caucasian with a caption that the white person was “foraging for supplies.” In contrast, there was a similar image released in which a black person was described as “looting,” (Sommers et al., 2006). This subtle difference in the label applied to the same behavior that only differed by race of the individual depicted is an example of the subtlety of linguistics in intergroup relations and its portrayal in the media. This study was designed to investigate how linguistic nuances such as those described above and corresponding subtle cognitive mechanisms can affect racial attitudes of the audience.

Linguistic Intergroup Bias

One of the linguistic nuisances in the literature that pertains to intergroup relations is the Linguistic Intergroup Bias (LIB; Maass et al., 1989). As reported by Maass and colleagues, LIB

refers to a process in which people encode and communicate desirable in-group and undesirable out-group behaviors more abstractly than undesirable in-group and desirable out-group behaviors. For instance if a member of an in-group was volunteering at the local homeless shelter one would describe those actions more abstractly than a member of the out-group member. If one saw an out-group member assaulting a stranger on the street they would describe that action more abstractly than they would for an in-group member.

The concept of abstraction in language can have multiple implications depending on what literature you draw from. In the present research we used the definitions first presented by Semin and Fiedler (1988). According to Semin and Fielder a word that is more abstract is more open to interpretation than a concrete word. Also, abstract words are defined as those that are difficult to ascribe a precise action or intention. They originally predicted four separate levels of abstraction proceeding from lowest to highest; descriptive verbs which are more concrete and provide limited interpretation (kick, look, run); interpretive action verbs, those that have more margin for interpretation and less defined action (help, cheat, offend); state verbs, which are verbs explaining the current state of the subject (believe, love, admire); and adjectives (honest, impulsive, aggressive). By comparing the words above such as kick (concrete) and believe (abstract), one can see that kick is simple, can be only interpreted a few ways and can be objectively verified unlike believe, which can be open to any number of interpretations. Experimentally, Semin and Fiedler (1988) found that as words become more abstract, the receivers interpret them as more memorable, more temporally stable and also feel they have more perceived knowledge about the subject. Additionally, information taken in at an abstract level is more resistant to disconfirmation.

Maass et al. (1989) applied these concepts of abstraction to intergroup relations under the assumption that there was a difference in how one would use levels of abstraction when referring to their in-group (i.e., people they perceive as belonging to their own groups) or out-group (i.e., people that they perceive as belonging to groups other than their own) members. Maass' research revealed empirical support for this reasoning. Specifically, in three experiments, Maass and colleagues found that when interpreting negative actions (e.g., littering, theft, sabotage or generally unruly behavior) of an in-group member, participants used less abstract language (more descriptive action verbs). However, when describing negative actions of an out-group member, language choice was significantly more abstract. The reverse was also found for positive behaviors (e.g. helping or volunteering). Furthermore, with violence or other undesirable behaviors, people described members of their out-group using more memorable, abstract and attitude changing descriptors. When they described in-group members, individuals were more likely to use less abstract terms or verbs (Volpato, Maass, Mucchi-Faina, & Vitti, 1990). These results suggest that individual's natural tendency to describe in-group members favorably and out-group members negatively, especially if they are in competition, causes the information to be more memorable and can reinforce negative stereotypes and propagate prejudicial beliefs (Maass, Salvi, Arcuri, & Semin, 2000).

Bias in the Media

Since the advent of mass news media, psychologists have been researching its influence on the population of viewers. Intergroup relations are one such area that has been carefully investigated. Alport (1954) was one of the first scholars to comment on the negative framing of minorities in newspaper stories. This observation has served as an unfortunate foreshadowing of negative consequences. Many findings have documented intergroup bias in multiple media

outlets (Dixon & Linz, 2000; Entman & Rojecki, 2001; Oliver, Jackson, Moses, & Dangerfield, 2004). These patterns are not restricted to Western culture. For instance, a study on media impact on Chinese high school students showed that the more American media (television, movies, and print) students were exposed to the more likely they were to hold negative stereotypes of African Americans. Conversely, Chinese students exposed to primarily Chinese media maintained mostly positive stereotypes about African Americans. (Tan, Zhang, Zhang, & Dalisay, 2009). Even with societal norms changing towards less antagonistic intergroup relations, it is still an open question whether the negative framing of blacks in the popular media could continue to perpetuate bias in a subtle way (Devine & Elliot, 1995). Mastro, Lapinski, Kopacz, and Behm-Morawitz (2009) recently observed a clear bias towards African Americans after participants were prompted with a news story about rape that varied by manipulating the gender and race of an assailant. Black men received the longest prison sentence, while Caucasian males received the shortest. More importantly, in a control condition where no video was shown, participants held the most favorable opinion about blacks suggesting that these types of news stories can sway public opinion.

LIB in the Media

Research indicates that using concrete verbs (e.g., strike, hit or attack) to describe an event makes it less memorable than using adjectives (which are considered a word that is more abstract than verbs or nouns) or personality traits (e.g., aggressive, assaulted, violent or malicious; abstract (Semin & Fiedler, 1988). The tendency for the media to use these abstract descriptions could affect how the audience chooses to use these descriptions and how the information is propagated throughout a culture. Maass et al. (1989) used the example of a reporter publishing a story in their paper to demonstrate their original findings as an example of

possible future implications. Recently, research has begun to investigate these specific types of linguistic biases across multiple forms (television and newspapers primarily) of national and international media. For instance, a German study exposed participants to newspaper articles about Turkish migrants that were either highly abstract or highly concrete. Participants exposed to the highly abstract articles demonstrated an increase in perceived cultural differences (i.e. how different these migrants were from other Germans) towards this known migrant out-group. Participants in the abstract condition also estimated higher levels of future criminal activity from the migrant group, however there were no changes in blatant forms of prejudicial attitudes (i.e. migrants have job that Germans should have) suggesting that LIB operates on a more subtle level (Geschke, Sassenberg, Ruhrmann, & Sommer, 2010). The authors also speculated that the lack of difference in blatant attitudes may be due to social desirability. These data suggest that the LIB has the potential to change in-group estimations of future behavior along with perceived cultural differences of an entire group. In terms of television, Gorham (2006) demonstrated that showing people television news stories containing language associated with LIB caused viewers to demonstrate the effect in their own descriptions of those stories. Furthermore, people that view more media tend to use abstract language more frequently (Gorham, 2006). If this effect is being activated in viewers, then it suggests that bias towards out-group members may be increased as well. In this study we propose that modern forms of implicit and explicit prejudice are perpetuated by the media and are a result of Linguistic Intergroup Bias. Explicit prejudice and attitudes are defined by conscious and accessible attitudes of group differences, while implicit prejudice is referred to as unconscious and subtle tendencies to favor one's in-group or discriminate against another out-group (Gaertner & Dovidio, 1986).

THE PRESENT STUDIES

The current study tested the effects of language abstraction on participants' implicit and explicit attitudes about out-group members by examining participants' reactions to highly abstract or highly concrete news stories describing either a Caucasian, African American, or an unidentified target. While current research has shown replication and effects of LIB (Geschke, et al., 2010; Gorham, 2006) it has not been able to provide evidence that LIB can affect blatant forms of prejudicial attitudes. Also, this will be the first research that has multiple target conditions instead of looking at the effects of abstract language on only the out-group. This study will also add to the literature in that it will be the first attempt to show experimental attitude change via the LIB about a very large out-group such as African Americans. Additionally, no current study has measured the effect of abstract language on implicit attitudes towards an out-group.

The purpose of this study was to provide directional and concrete evidence that media displaying higher levels of abstraction (i.e. interpretive action verbs and adjectives) can increase levels of implicit and explicit prejudice. As mentioned above, explicit expressions of racism have become increasingly taboo, as a result investigating effects as minimal as the LIB has become increasingly difficult. This may be one of the reasons that research on LIB has decreased over the last two decades. For instance, the typical American now displays more subtle forms of bias, which they may not be consciously aware of. This form of bias, which has been labeled Aversive Racism by Gaertner and Dovidio (1986), occurs when people make prejudicial decisions in ambiguous situations that could be attributed to other factors besides prejudice. In

order to capture this subtle, but influential effect we used a computer-based version of the implicit association test (IAT). Created by Greenwald, McGhee, and Schwartz (1998) the IAT measures associations between pairs of social categories. It is especially useful in these situations because of its resistance to interference from explicit thoughts. With the IAT, we can accurately measure implicit attitudes without factors such as social desirability obstructing our findings. We used the IAT to access the internal attitudes displayed by the participant.

Our first hypothesis was that high levels of abstractness would increase negative implicit and explicit attitudes of prejudice towards African Americans especially when the target of the communication was African American. Our second hypothesis was that participants who read more abstract articles would display higher levels of abstractness in free writing measures given after the manipulation was administered. In an effort to replicate Gorham's (2006) study, we hypothesized that subjects who viewed more media in everyday life would demonstrate more abstractness and greater levels of aversion.

This study is the first in a series of research studies designed to investigate whether or not the LIB can be produced in participants, and whether it impacts the implicit and explicit beliefs of those who view these messages.

STUDY 1

METHODOLOGY

Pilot data was collected in order to test feasibility of an open source IAT program, test stimulus material and to examine whether there would be a change in explicit and implicit attitudes. In our pilot paradigm, we tested a pre- and posttest IAT while manipulating race and levels of abstraction (high vs. low). The experimental design was a 2 (LIB: High abstract Adjectives added vs. no abstract adjectives) x 3 (Target Race: African American vs. Caucasian vs. not mentioned) between subjects factorial. For race, one-third of the participants received a version of an article about a Caucasian target; one-third read a version about an African American target, and one-third of participants read a version of the article with no mention of the race of the assailant. The main dependent variables of the study were an implicit measure, the Implicit Association Task (Greenwald, McGhee & Schwartz 1998; IAT), and an explicit measure, the Modern Racism Scale (McConahay, 1986; MRS). We also included a believability scale as manipulation check. The believability scale was adapted from Beltramini (1992), and was originally used to measure creditability of advertisements. The wording was simply changed to assess the believability of the article by saying “How believable was this newspaper article?” vs. “How believable was this advertisement?”

Participants

Seventy-one (27 men, 44 women) participants were recruited from the University of Alabama subject pool in exchange for course credit. They participated in one session, which

lasted approximately 60 minutes. Out of the participants collected 20% were African American, 70% Caucasian, 4% Asian American and 5% other.

Materials and Measures

The article stimulus was adapted from a news story in the Tuscaloosa area. It was altered only slightly for this study (Appendix A). Two abstract adjectives were added to sentences surrounding the action in the news story. During the pilot study, we used a freeware, open source version of the IAT to measure its capability and customization possibilities. We used the race IAT in the form that it originally appeared on the Project Implicit website. Other dependent measures included the Modern Racism Scale (McConahay, 1986) and the adapted believability scale.

Procedure

Participants were told their goal in the experiment was to evaluate a new software task and to evaluate some newspaper articles. Participants were first given a baseline run through of the IAT.

After the completion of the task they were asked to review a series of newspaper articles.

Participants were told that this is a separate study about opinions about crime in the area.

Afterwards, participants were asked to write a paragraph about their opinions on crime in the area. Following the paragraph subjects once again completed a run through the IAT. They were told that their original test was not saved by accident and they needed to complete the IAT once again. Afterwards, participants were given a survey containing the dependent measures. They

were then debriefed, probed for suspicion and dismissed.

RESULTS

Two manipulation checks were used to test the article used as our primary stimulus materials. Results indicated that 93% of 72 participants correctly identified that the article was about a robbery the other 7% reported they were not sure what the article was about. Participants were also asked to identify the race of the person mentioned in the target article. A Pearson’s Chi square was conducted to show that the race manipulation was effective (Table 1), and that 78% participants were able to identify the race of the assailant ($p < .001$).

Table 1

Manipulation Check – Study 1

		Race Manipulation check			Total
		African American	Caucasian	Unidentified	
Condition	African American	20 80%	3 12.0%	2 8 %	23 32.4%
	Caucasian	0 0%	18 85.7%	3 14.3%	26 36.6%
	Unidentified	2 8%	5 20%	18 72%	22 34.3%

The data did not differ when those who failed the manipulation check were excluded. Reliability analysis for both the MRS and the believability scale were conducted, revealing strong alphas, .81 and .89 respectively. The success of the believability scale led to its use as an exploratory data outlet in the main study.

Explicit Measures

A univariate analysis of variance (ANOVA) between race of the suspect and level of abstraction on the explicit MRS measure revealed a significant finding ($F(3, 47) = 2.841$ ($p < .049$)). Participants in the African American suspect condition reported more favorable opinions ($M = -1.26$, $SD = 1.16$) towards African Americans on the Modern Racism Scale and participants in the Caucasian condition reported less favorable opinions ($M = -.72$, $SD = 1.20$). There was also a significant main effect for language used ($F(1, 47) = 4.74$, $p < .035$), indicating that participants in the abstract condition reported more favorable opinions towards African Americans on the explicit MRS ($M = -1.41$, $SD = 1.05$) measure than participants in the concrete condition ($M = -.68$, $SD = 1.21$). This finding could be an artifact of abstract language activating out-group stereotypes. The abstract language causing more favorable opinions of African Americans was the opposite of what we predicted. This data may also suggest that participants may be self-presenting in order to seem socially desirable as speculated in Geschke, et al. (2010). In order to control for this, we have included a social desirability scale within the measures for the main project.

Implicit Measures

Due to our choice to use freeware and corresponding complications, the majority of original IAT data was not interpretable. However, for the main study, all of the problems have been solved for this version of the IAT. Suspicion and familiarity with the IAT appeared in our suspicion probe. Nearly 46% of the participants suggested the study might be about race, 26% mentioning they recognized the IAT name and 9% correctly claimed that study was about implicit or explicit attitudes associated to the article they read. In order to minimize suspicion for the main study the IAT was altered to remove all mentions of race, the name of the test and

framed the IAT as a program testing reaction time. All instances of the term “Implicit Association Test” were removed from the instructions for the next study.

STUDY 2

Based on the results of study 1, we thought that the stimulus may need to be refined for the main study. In order to properly demonstrate the language needed to activate a LIB response, we once again altered the newspaper article from a local media source about a robbery at gunpoint. For the main study, it was felt that a stronger manipulation was needed. In order to do so, the word base constructed by Semin and Fiedler (1988) was investigated for words that had been pretested for higher levels of abstraction that fit the language of the preexisting newspaper article. These selected words had been previously tested by Semin and Fiedler (1988) and filed into one of the four categories of abstraction outlined in the introduction. Words in that set that were the same or similar in meaning to words in the original stimulus material were located. Then a word with similar meaning but in a higher or lower abstract category was found to be a counterpart. Sentences were modified from the original article and pilot tested based on Semin and Fiedler's (1988) original testing for abstract words. Two versions of each of the sentences were created, one with the abstract word and one with the more concrete counterpart.

Questionnaire packets containing 6 statements were distributed to a social psychology class in exchange for extra credit. Each packet asked a series of five questions about each statement to evaluate its level of abstraction. The questions were altered not to ask about specific words but the sentences as a whole. Sentences were counterbalanced for story order and randomized so that they were not all completely abstract or concrete.

Additional care was then taken to ensure sentences were worded so that the changes made were not all centered around violent or aggressive acts in the story. Out of the 6 sentences created, 4 were significantly more abstract than their concrete counterparts (Table 2; Appendix B).

Table 2

Pilot results for levels of abstraction in statements

Sentence	Abstraction Level				t-stat	P value
	High		Low			
	Mean	SD	Mean	SD		
1	4.76	1.82	3.06	1.50	6.73	.001
2	3.80	1.61	3.71	1.53	.371	.711
3	5.09	1.46	4.13	1.79	4.01	.000
4	4.25	1.78	4.44	1.53	-.693	.489
5	4.69	1.44	4.02	1.60	2.87	.005
6	4.25	1.73	3.25	1.73	3.18	.002

Those four sentences were altered in regards to condition and the additional sentences remained concrete. The story is presented below with the abstract condition in parentheses and race insertions in italics.

An unknown man held (**threatened**) a female cab driver at gunpoint Tuesday night. The cab driver says her passenger – also female – did not have her fare and nor did her friend at the apartment destination. The passenger told the cab driver she would get the money and bring her a tip before going inside the apartment. Within in minutes, the cab driver says she watched (**noticed**) a *race* man come up to the cab and, point a gun to her head and told (**commanded**) her to hand over her money. The victim told sources the gunman took her backpack and \$6.00 in cash but did not hit her before he fled the scene. The passenger seemed to pity her (**to be sympathetic**) and paid the fare. The cab driver then called (**warned**) the police. Police later questioned the woman passenger, as the

cab driver did not know whether she was to trust the passenger since the she hadn't attempted to stop (**intervene**) with the suspect.

Stereotype Activation

In order to ensure that the aggressive nature of the language was not activating the stereotype that black males are associated with crime (Schaller, Park, & Mueller, 2003), stereotype activation was investigated in the main study. Stereotype activation may very well be the mechanism through which the LIB occurs in the sense that when an out-group member is described, the stereotype about that outgroup may become active. We hypothesize that once the stereotype is active it then triggers LIB in order to maintain current in-group and out-group opinions. This proposed system operates in order to maintain positive in-group opinions and negative out-group mentality. In the main study, we used a word stem completion task similar to that used by Schaller, Park, and Mueller (2003). This tool uses a set of uncompleted words to be filled in by the participant. The first set provides words like HAR_, HUR_, AGG_ to assess how much the idea of danger has been activated and the second used stems that allude to the African American stereotype (e.g., ATH_, BR_, and POO_; full set in Appendix F). The stem completion task also served as a measure to assess whether the stimulus was triggering African American stereotypes when race was not mentioned. Additionally, in the main study we also were interested in how the believability scale would be affected by our independent variables.

METHODOLOGY

Design

The experimental design was a 2 (LIB: High abstract language vs. Low abstract language (concrete) x 3 (Target Race: African American vs. Caucasian vs. not mentioned) between subjects factorial. The first independent variable (IV) was the level of abstraction among the words in a news story; one level included words higher in abstraction (e.g. threatened); the other included words lower in abstraction (e.g., Held; concrete). The second IV was race; one-third of the participants received a version of article about a Caucasian target; one-third read a version about an African American target, and one-third of participants read a version of the article with no mention of the race of the target. The main dependent variables of the study were the Implicit Association Task (Greenwald, McGhee & Schwartz 1998; IAT), and the Modern Racism Scale (McConahay, 1986). The believability scale adapted from Beltramini (1992) served as an exploratory dependent measure.

Participants

Participants were 173 (84 men, 89 women) undergraduates recruited from the University of Alabama subject pool in exchange for course credit. They participated in one session, which lasted approximately 60 minutes. Livingston (2002) found that African Americans tend to show ceiling effects for explicit measures of in-group bias and no between groups differences on implicit measures. In order to avoid preventing students from fulfilling their research requirement, African Americans were allowed to participate in the study for credit but were removed from the primary data analysis. Out of the 173 participants collected, 28 were African

American and their data was excluded. The remainder of the sample was reported as 91% Caucasian, 2% Asian American and 7% other. Twelve subjects were excluded from the analysis for extreme suspicion.

Materials and Measures

To verify our manipulations, we created several manipulation checks related to details of the article. Participants were asked to confirm the race of the subject in the story by selecting either African American, Caucasian, not mentioned or not sure. Additionally, they filled out items indicating how well they remembered the article and how believable they found the article (Appendix C). The believability scale was also examined for differences between language conditions. In an attempt to replicate Gorham's (2006) findings, we also measured how much media the subject views on a weekly basis (Appendix D). In order to control for possible outliers as well as the effect of explicit racism, we used the Modern Racism Scale (Appendix E). While the MRS is a trait measure, it has been used as a dependent variable in similar research (Huang, Sedlovskaya, Ackerman, & Bargh, 2011). The IAT developed by Greenwald, McGhee, and Schwartz (1998) is a sorting task designed to measure implicit associations between words and pictures. Participants sort positive and negative words to respective categories and then black and white faces to color specific categories. The task then asks participants to sort both faces and words to a paired category (e.g. positive + white). The IAT measures the latency between responses when pairing different faces to either positive or negative categories and calculates a final score. To measure stereotype activation, the stem completion task used by Schaller, Park and Mueller (2003) was applied (Appendix F). Finally, as mentioned above, to better understand whether participants' drive to remain socially acceptable is affecting self-report measures, social desirability was tested using the M-C SDS (Crowne & Marlowe, 1960; Appendix G).

Procedure

Participants were told their goal was to complete a number of unrelated experiments. They were first told they would help test a new software task in two separate trials. They were also asked to read and give their opinions of some newspaper articles. Finally, they were instructed to fill out some unrelated survey measures including the stereotype activation task. Participants were first given a baseline measure of the IAT. After the completion of the task they were then asked to review the stimulus article at another location in the research lab. Participants were told that this was a separate study regarding opinions about crime in the local area. Depending on the randomly assigned condition, the participants were given one of six constructed newspaper articles discussing a robbery in the area.

After reviewing the article, they were then asked to convey their attitudes on crime in the area and whether or not they thought it was a problem. When the subject finished the paragraph, the experimenter asked the subject to retake the IAT as they were told they would at the beginning of the study. After finishing the second IAT, the participants were asked to fill out the stereotype stem competition task on paper. Finally, participants were given a final survey containing the manipulation checks M-C SDS scale and MRS in that order.

RESULTS

The manipulation check for identification of race in the article was successful with a Chi square of condition versus reported race of the suspect at $\chi^2 = 149.609$ $p. < .001$ (Table 3).

Table 3

Manipulation Check – Study 2

		Race Manipulation check			Total
		African American	Caucasian	Unidentified	
Condition	African American	45 86.5%	2 5.0%	1 2.4%	48 35.8%
	Caucasian	1 1.9%	32 80%	7 16.7%	40 29.9%
	Unidentified	6 11.5%	6 15%	34 81%	46 34.3%

On the second manipulation check only 6 participants thought that story was about something else besides a robbery. Participants that answered incorrectly to either of these manipulation checks were removed from the data, though there was no significant change in results if they were included. A correlation table of the dependent variables is presented in table 4.

Table 4

Dependent Variable Correlation table.

	IAT1	IAT2	STEM	MRS	BEL	SD	Media
IAT1		.446*	-.045	.003	.010	.088	-.009
IAT2			-.024	-.004	-.066	-.062	-.028
STEM				-.116	-.085	-.076	-.102
MRS					.126	.152	-.016
Believability						-.084	.127
Social							.057
Desirability							

Note: * = $p < .01$

As you can see the two IAT scores are highly correlated which is to be expected. No other dependent variables were correlated.

Explicit Measure

The Modern Racism Scale was examined and was reliable ($\alpha = .71$). The sample showed no serious outliers within the set (e.g., no subject maxing or bottoming on the scale). A 2 (LIB: Abstract language present vs. not present) x 3 (Race: African American vs. Caucasian vs. not mentioned) between subjects ANOVA revealed a significant main effect for language ($F(1,111) = 7.15, p = .006, \eta_p^2 = .064$) but no effect for race ($F=.92$; Table 5).

Table 5

ANOVA results race condition on MRS

Item	MRS	
	Mean	SD
African American	-.737	1.08
Caucasian	-.379	.856
Unidentified	-.549	1.05

This result confirms our predictions and demonstrates a curious finding. Those in the abstract condition ($M = -.295, SD = .123$) demonstrated less favorable explicit opinions towards

African Americans than those in the concrete condition ($M = -.811$ $SD = .136$). This finding suggests that there is something about abstract language that causes subjects to have less favorable opinions towards African Americans. Also, the interaction that was alluded to by the pilot data could not be replicated ($F=.61$). Finally, social desirability was included as a covariate in an ANCOVA which showed that it was not significantly related ($F=2.19$; Table 6) to the MRS scale, nor did it alter the original results significantly.

Table 6

Decritpives for ANCOVA of M-C SDS on MRS

Item	Abstraction Level				Mean	SD
	High		Low			
	Mean	SD	Mean	SD		
African American	-.519	.996	-.874	1.14	-.711	1.09
Caucasian	-.266	.926	-.659	.773	-.442	.873
Unidentified	-.099	1.20	-.899	1.04	-.394	1.20
Total	-.276	1.06	-.817	1.01	-.522	1.07

When included as a dependent variable, social desirability showed no difference across conditions.

Implicit Measure

Both the pretest and posttest IAT d scores were measured using the conventional algorithm outlined by Greenwald, Banaji & Nosek (2003). This method eliminates trials with scoring latency below 400ms and above 10,000ms and uses the target trial blocks for analysis. A positive score indicates an association of target A with attribute A and target B with attribute B in this case positive words with white faces and negative words with black faces. A secondary python script was created for ease interpretation and comparison of the pre and post data. D scores were calculated and analyzed along a sliding scale between -2 and positive 2. A general

review of the scores showed that most participants demonstrated a slight positive association ($D = .577$). As expected, there were no differences across conditions in the pretest scores. A univariate ANOVA on post test scores (LIB: Abstract language present vs. not present) x 3 (Race: African American vs. Caucasian vs. not mentioned) also demonstrated no difference across condition for either Race ($F=.128$) or LIB ($F= .602$). Descriptives are presented in Table 7.

Table 7

Descriptives by conditions on Post IAT D score

Item	Abstraction Level				Mean	SD
	High		Low			
	Mean	SD	Mean	SD		
African American	.601	.224	.511	.434	.551	.356
Caucasian	.465	.275	.567	.343	.511	.306
Unidentified	.457	.361	.605	.268	.515	.331
Total	.512	.292	.548	.373	.530	.333

A difference score was calculated between the pretest and the posttest D score. A univariate ANOVA on difference scores (LIB: Abstract language present vs. not present) x 3 (Race: African American vs. Caucasian vs. not mentioned) also demonstrated no difference across condition for either Race ($F=.038$) or LIB ($F= .166$). Descriptives are presented in Table 8.

Table 8

Decriptives for IAT difference score

Item	Abstraction Level				Total	SD
	High		Low			
	Mean	SD	Mean	SD	Mean	
African American	.030	.293	.101	.455	.070	.389
Caucasian	.065	.352	.025	.437	.047	.385
Unidentified	.107	.268	.017	.285	.058	.277
Total	.066	.300	.054	.412	.060	.357

A within subjects MANOVA was conducted to understand any differences that may have occurred between pre and post testing in general. This analysis showed that while scores were significantly closer to zero in the post test ($F(1,111) = 4.07, p = .046$), no other results could be determined. The pretest scores were less favorable towards African Americans ($M = .583, SD = .327$) than the posttest scores ($M = .513, SD = .326$). This result is difficult to interpret as it seems at first that it may simply be a reduction in latency due to a practice effect of the test. Unfortunately, no other significant results could be generated from the IAT data. Media usage ($F = .132$), MRS scores ($F = 1.58$) and the M-C SDS scale ($F = .140$) were all included as covariates but were not statistically significant.

Language Replication

Articles were coded and scored for abstract language. Coding was done by 4 experimenters blind to condition and showed a coding reliability of $\alpha = .68$ on a test response. Each coder was trained to indentify and sort verbs into the three verb categories outlined by Semin and Feidler (1981). The fourth category adjectives were also indentified and counted. Each category was summed for each individual response with descriptive action verbs (which represent the most concrete category), reverse scored and called total abstraction. Total

abstraction showed trending results between abstract and concrete conditions ($F(1,106) = 3.07, p = .083, \eta_p^2 = .028$). Those in the abstract condition ($M = 6.47, SD = 3.66$) showed more abstract words than those in the concrete condition ($M = 5.30, SD = 3.18$). Because of the trending results the categories were broken down by item. Descriptive action verbs ($F=.331$), state verbs ($F=.012$) and interpretive action verbs ($F = 1.62$) showed no difference in the LIB condition (Table 9).

Table 9

ANOVA results of verb categories

Item	Abstraction Level				<i>F</i>	P value
	High		Low			
	Mean	SD	Mean	SD		
Desc. Action	3.51	2.20	3.75	2.00	.331	.566
Int. Action	1.71	1.68	1.31	1.57	1.62	.205
State	1.44	1.21	1.46	1.21	.012	.915

However, adjectives showed up more frequently in the abstract condition ($M = 3.38, SD = 2.21$) than the concrete condition ($M = 2.55, SD = 1.86$) replicating previous findings ($F(1,106) = 4.69, p = .032, \eta_p^2 = .036$). Two separate ANCOVAs were conducted using total media use ($F = .003$; Abstract, $M = 6.47, SD = 3.66$; Concrete, $M = 5.30, SD = 3.18$) and news media use ($F = 1.56$; Abstract, $M = 6.50, SD = 3.69$; Concrete, $M = 5.30, SD = 3.18$) as a covariate on total abstractness and they demonstrated no significant results leading us to reject our third hypothesis.

Stereotype Activation

Stem completion tasks were scored for hits of African American completed stems. A univariate ANOVA on Stereotype Activation scores (LIB: Abstract language present vs. not present) x 3 (Race: African American vs. Caucasian vs. not mentioned) demonstrated no

difference across condition for either Race ($F=.768$) or LIB ($F= .000$). Descriptives are presented in Table 10.

Table 10

Descriptives for Stereotype Activation score

Item	Abstraction Level				Total	
	High		Low			
	Mean	SD	Mean	SD	Mean	SD
African American	4.28	1.77	3.79	1.96	4.00	1.87
Caucasian	3.69	2.21	3.93	1.53	3.81	1.89
Unidentified	3.39	1.75	3.62	1.12	3.48	1.50
Total	3.79	1.91	3.79	1.63	3.79	1.77

Though they showed no differences across either condition, no category differed far from the grand mean of 3.69 suggesting that the stereotype had been activated evenly across conditions. It is possible that this was a side effect of beginning the study with the IAT sorting task of black and white faces, but even in light of that abstractness showed its effects in other areas. This effect could also have been brought on by the mention of crime within the article.

Ancillary Analysis

In order to understand why pilot data was not replicated, we further investigated the believability scale as a manipulation check and also for clues to the received outcome. The 9 item believability scale was reliable ($\alpha = .91$). The scale had a mean of 4.33, just over the mid-point on a scale of 1 to 7, suggesting that the stimulus article was more believable than not. The comprised mean of the scale when placed in ANOVA showed no effect for the race condition but demonstrated a trending effect for the type of language condition ($F(1,132) = 3.513, p = .063$). Then the scale was analyzed item by item. Out of the 9 items, 3 items (Table 11) were

significantly different across the language condition suggesting that abstraction language leads communications to be seen as more believable.

Table 11

ANOVA results of believability sub measures

Item	Abstraction Level				<i>F</i>	P value
	High		Low			
	Mean	SD	Mean	SD		
Believable	5.18	1.47	4.41	1.90	6.93	.009
Trustworthy	4.47	1.90	3.98	1.46	4.02	.047
Reasonable	5.14	1.27	4.64	1.42	4.55	.035

There was no difference in believability for race ($F = .976$). This result may help explain why the data appeared as it did.

DISCUSSION

The results from this study partially confirm the hypotheses that abstract language causes participants to report more negative explicit attitudes towards African Americans. This effect occurs regardless of the race of the target condition but showed no differences on implicit measures. This effect is somewhat unexpected because pilot data suggested that the abstraction effect would rely on the race of the subject, but this data suggests it happens regardless of race. The current finding is most likely an effect of the improved stimulus and decreased suspicion that allowed for a methodologically cleaner language manipulation. Social desirability was not found to be a strong factor in influencing explicit attitudes. The hypothesis that the LIB effect would be replicated in written measures was confirmed, replicating past work and providing support for the idea that the effect is transferred from a source to the viewer of that source. Implicit attitudes were unaffected by language abstraction and race manipulation suggesting that these types of attitudes may not be susceptible to a simple manipulation such as this. This study was unable to replicate Gorham's (2006) findings in that media usage acts an influence on participants' replication of abstract language.

Intergroup Implications

According to Mass et al. (1988), language abstraction increases when an out-group member is described in a way viewed as negative by the in-group. It is plausible that the reverse is also possible (i.e. highly abstract language may trigger group salience). A meta-analysis conducted by Riek, Mania, and Gaertner (2006) found that making out-groups or intergroup competition salient triggers many thoughts and behaviors including more negative opinions

about out-groups, more anxiety towards out-groups and endorsement of more negative stereotypes. Therefore, if abstract language is causing intergroup relations to become salient it could feasibly cause out-groups to be viewed more negatively. Geschke, Sassenberg, Ruhrmann, and Sommer (2010) found while subtle group difference attitudes changed, explicit and blatant out-group attitudes did not. Our work is contradictory to that finding, however this may be a result of the nature of the out-group relationship. In Geschke et al.'s study, the intergroup relation was based on immigrants from a nearby region that was a relatively new occurrence while the current study compares groups that have been in competition for some time. This difference in findings may suggest that this effect can differ depending on culture and group relationship. Another possible explanation for this effect would be stereotype activation, however our data displayed no differences across condition despite revealing a high hit rate for African American stem completions. Because abstraction still showed a significant effect on attitudes despite activation effects, it could be argued that the effects of language abstraction are not bound by the process of stereotype activation and may be more associated with group salience or perceived group threat.

Linguistic Implications

Information presented by the believability measures, though not intentionally covered in the scope of this study, seems important to furthering knowledge of the effects of abstraction in language and how it is perceived. It could be inferred by Semin and Fiedler's (1981) original findings that abstract information is seen as more temporally stable and more memorable, and thus would lead it to also be more believable. This data provided clear evidence that information that is more abstract is also more believable, trustworthy and reasonable.

Similar information has been demonstrated in the field of persuasion in that more vivid (which is defined by similar characteristics of abstraction) descriptions or communications are seen as more persuasive than non-vivid communications (Guadagno, Rhoads, & Sagarin, (2011). As documented by Cialdini (2009), believability and credibility (trustworthiness) are important mechanisms in predicting persuasion, providing evidence that these two concepts may be quite similar.

Limitations and Future Directions

The first major limitation in this study is the null results displayed by the IAT data. Our findings did not support the idea that implicit attitudes could be changed by language abstraction, however there are other explanations for this effect. First, the manipulation presented or the concept of language abstraction in general is not powerful enough to alter implicit attitudes. Though it is easy to think that the effects of language abstraction is a subtle one and should be more easily noticed with implicit measures, it is possible the mechanism of abstraction operates in a different way. According to Project Implicit's website (cite), most Americans average between .4 and .9 on the Race IAT. Since our scores fall within that range (.577), the IAT data would suggest that the test version correctly measured implicit attitudes in the intended way but measurement error is still a possibility. Also, the level of prejudice decreased from the pretest to the posttest. This finding is difficult to interpret as the IAT is in theory not susceptible to practice effects. That leads to the question of what could have caused a reduction in implicit reactions across all conditions. This once again could have been due to stereotype activation, however it would be intuitive to expect an increase in implicit prejudice. Simpler paradigms including the IAT as a posttest may help clarify some of these questions. In terms of implications on culture in

general it would be comforting to provide additional support that the effects of high levels of abstraction are not powerful enough to alter implicit attitudes towards out-groups.

Another limitation of this study is the high levels of hits received on the stem completion task across all conditions. It suggests that the concept of race was made salient throughout the entire session, which may have possibly affected results. This could have come from completing the IAT and seeing black and white faces, or from the nature of the stimulus material. A more simplistic study design may be able to address these problems though studying race is always accompanied by suspicion as the mere mention of race triggers many different attitudes and stereotypes by the subject.

This study has provided multiple findings and each have potential for future directions. The most important future direction for this line of thought is simplification of the paradigm and investigation of each mechanism at a more focused level. There are several aspects of this paradigm that may be better illustrated via a series of smaller studies. It may be interesting to investigate the effects of abstractions on specific types of attitude measures (implicit vs. explicit) in separate paradigms or separate conditions. Also removing the pre and posttest IAT may reduce worries of stereotype activation allowing a clearer view of the interaction between abstract language and target race on explicit measures. It also may be interesting to investigate the implicit measure as a one-time measure instead of a post and pretest repeated measure design as different results may appear across condition. Additionally, it would be wise to attempt to discover if the IAT is responsible for activating stereotypes, which could be done with simple pilot testing. If the effect of stereotype activation is due to the nature of the stimulus material, a replication of this study with a nonviolent, non-crime newspaper story would shed light on whether this type of story causes stereotype activation. The stimulus was limited by conveying

its message via print and in order to generalize to all types of media it would be optimal to create different types of communication such as video, radio and even computer mediated communication in both the high abstraction and low abstraction conditions. With a clearer view of the scope and cognitive mechanisms of this effect it will be easier to create new lines of research and even possible interventions in attempts to prevent the news media from inadvertently biasing viewers. Additionally, future research can investigate what effect abstract language has on believability and how it factors into aspects such as memory and persuasion.

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APPENDIX

A. STIMULUS.....36

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APPENDIX A

An unknown man held a woman cab driver at gunpoint Tuesday night. The incident happened around 10:00 p.m. as she dropped off a woman at Hunter Haven Apartments on Hunter Road. The cab driver says the woman did not have her fare and nor did her friend at the apartment. The customer allegedly told the cab driver she would get the money and bring her a tip before going inside the apartment. Within in minutes, the cab driver says a (*race*) man came out nowhere, (*adjective*) pointed a gun to her head and (*demande*d) asked money. The victim told Us the gunman (*stole*) took her backpack and \$6.00 in cash before he (*fled*) left the scene. Police later questioned the woman customer. She paid the fare.

The cab driver tells us she believes she was part of a set-up, but she cannot prove it. So far no arrests have been made. The cab driver describes the suspect as a (*race*) male, between the ages of 16-18 years old, around 5'6, wearing blue jean shorts, no shirt and a face mask. If you have any information on this crime please call Local Police.

APPENDIX B

Piloted Sentences

1. An unknown man held (threatened) a woman cab driver at gunpoint Tuesday night.
2. The cab driver says the woman did not have her fare and nor did her friend at the apartment. The customer told the cab driver she would get (receive) the money and bring her a tip before going inside the apartment.
3. Within in minutes, the cab driver says she watched (noticed) a man come up to the cab and, point a gun to her head and told (commanded) her to hand over her money.
4. The victim told sources the gunman took (stole) her backpack and \$6.00 in cash but did not hit (hurt) her before he left (fled) the scene.
5. The cab driver then called (warned) the police. Police later questioned the woman customer as the cab driver did not know whether she was deceived since the passenger hadn't attempted to stop (intervene with) the suspect.
6. The passenger seemed to pity her (sympathetic) and paid the fare

APPENDIX C

Manipulation Check & Believability Scale

1. What was the race of the Suspect in the article you read?
 - a. African American
 - b. Caucasian
 - c. Race was not mentioned

2. What was the article you read about?
 - a. A beauty Pageant
 - b. A Robbery
 - c. War on terrorism
 - d. Careers in Alabama
 - e. None of these

The news article I read was

1.	1	2	3	4	5	6	7
	Unreliable						Believable
2.	1	2	3	4	5	6	7
	Untrustworthy						Trustworthy
3.	1	2	3	4	5	6	7
	Not credible						Credible
4.	1	2	3	4	5	6	7
	Unreasonable						Reasonable
5.	1	2	3	4	5	6	7
	Dishonest						Honest
6.	1	2	3	4	5	6	7
	Questionable						Unquestionable
7.	1	2	3	4	5	6	7
	Inconclusive						Conclusive
8.	1	2	3	4	5	6	7
	unauthentic						Authentic
9.							

1
Unlikely

2

3

4

5

6

7
Likely

APPENDIX D

Media Use

Instructions: Please type the number into the blanks provided.

1. How many hours per week do watch the news on television?
2. How many hours per week do spend reading the news either via newspaper or online?
3. How many hours per week do you listen to news via the radio?
4. How many hours per week do you watch television?
5. How many hours during the week do you read?
6. How many hours during the week do you listen to the radio?

APPENDIX E

Modern Racism Scale

Instructions: Please circle the answer that best reflects how much you agree or disagree with the following statements. There is no correct answer, use your best judgment. Use the following scale to make your judgments.

-3	-2	-1	0	1	2	3
Strongly Disagree						Strongly Agree

1. It is easy to understand the anger of black people in America
2. Blacks have more influence upon school desegregation plans than they ought to have.
3. Blacks are getting too demanding in their push for equal rights.
4. Over the past few years blacks have gotten more economically than they deserve.
5. Over the past few years the government and news media have shown more respect to blacks than they deserve.
6. Blacks should not push themselves where they're not wanted.
7. Discrimination against blacks is no longer a problem in the United States.

APPENDIX F

Stem Completion Task

Instructions. Write the first word that comes to your mind that completes the stem, as quickly as possible. You have two minutes to complete this task.

1. ATH__
2. BR__
3. BRO__
4. LA__
5. LOU__
6. MU__
7. MUS__
8. POO__
9. RH__
10. STU__.

APPENDIX G

1. Before voting I thoroughly investigate the qualifications of all the candidates. (T)
2. I never hesitate to go out of my way to help someone in trouble. (T)
3. It is sometimes hard for me to go on with my work if I am not encouraged. (F)
4. I have never intensely disliked anyone. (T)
5. On occasion I have had doubts about my ability to succeed in life. (F)
6. I sometimes feel resentful when I don't get my way. (F)
7. I am always careful about my manner of dress. (T)
8. My table manners at home are as good as when I eat out in a restaurant. (T)
9. If I could get into a movie without paying and be sure I was not seen I would probably do it. (F)
10. On a few occasions, I have given up doing something because I thought too little of my ability. (F)
11. I like to gossip at times. (F)
12. There have been times when I felt like rebelling against people in authority even though I knew they were right. (F)
13. No matter who I'm talking to, I'm always a good listener. (T)
14. I can remember "playing sick" to get out of something. (F)
15. There have been occasions when I took advantage of someone. (F)
16. I'm always willing to admit it when I make a mistake. (T)
17. I always try to practice what I preach. (T)
18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people. (T)
19. I sometimes try to get even rather than forgive and forget. (F)
20. When I don't know something I don't at all mind admitting it. (T)
21. I am always courteous, even to people who are disagreeable. (T)
22. At times I have really insisted on having things my own way. (F)
23. There have been occasions when I felt like smashing things. (F)
24. I would never think of letting someone else be punished for my wrongdoings. (T)
25. I never resent being asked to return a favor. (T)
26. I have never been irked when people expressed ideas very different from my own. (T)
27. I never make a long trip without checking the safety of my car. (T)
28. There have been times when I was quite jealous of the good fortune of others. (F)
29. I have almost never felt the urge to tell someone off. (T)
30. I am sometimes irritated by people who ask favors of me. (F)
31. I have never felt that I was punished without cause. (T)
32. I sometimes think when people have a misfortune they only got what they deserved. (F)
33. I have never deliberately said something that hurt someone's feelings.

Figure 1



AP Associated Press AP - Tue Aug 30, 11:31 AM ET

A young man walks through chest deep flood water after looting a grocery store in New Orleans on Tuesday, Aug. 30, 2005. Flood waters continue to rise in New Orleans after Hurricane Katrina did extensive damage when it

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RECOMMEND THIS PHOTO » Recommended Photos
Recommend It: Average (138 votes)
☆☆☆☆☆ **★★★★☆**



AFP 3:47 AM ET

Two residents wade through chest-deep water after finding bread and soda from a local grocery store after Hurricane Katrina came through the area in New Orleans, Louisiana. (AFP/Getty Images/Chris Graythen)

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Recommend It: Average (211 votes)
☆☆☆☆☆ **★★★★☆**

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