

# **A Tale of Two Cues: The Impact of Subliminal and Implicit Appeals for Racialized Issue Opinion**

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## **Abstract**

While the bulk of the implicit priming literature relies on the use of imagery to prime stereotypical considerations (Mendelberg 2001; Valentino, Hutchings, and White 2002), rhetorical cues have also been shown to prime stereotypes subconsciously, either through the use of carefully crafted, racially charged rhetoric (Hurwitz and Peffley 1997, 2005; Peffley, Hurwitz, and Sniderman 1997; White 2007) and experimentally through the use of subliminal cues (Kam 2007; Weinberger and Westen 2008). These priming cues have not however been tested against one another, as a means of determining which has the greatest influence activating stereotypical considerations and subsequently influencing opinion. Using a 2x2, between-subjects design (with control), I test the degree to which varied stereotypical appeals influence opinion on a series of issues. The evidence from two experiments suggests that the effects of racial primes are moderated by both subjects' accessibility of racial stereotypes as well as their racial background, providing fertile ground for future research in racial priming.

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## **A Tale of Two Cues: The Impact of Subliminal and Implicit Appeals for Racialized Issue Opinion**

During the 2008 primary campaign in the run-up to the Republican nomination, candidate Mike Huckabee aired the, “What Really Matters’ ad, a call to consider things other than politics during the holiday season. While the advertisement seemed at its face to be an innocuous message of holiday spirit, much was made of a bookshelf in the background that appeared as a glowing white cross. Pundits immediately assailed Huckabee for allegedly attempting to subliminally prime viewers, with the notion of Christianity, reinforcing Huckabee’s Christian faith and drawing direct parallels between himself and competitor Mitt Romney, a member of the Church of the Latter Day Saints.

Huckabee’s attempt to sway citizens subliminally may have fallen flat, it also points to the potential for a new domain of political campaigning, one in which the pleasantries and hostilities within campaign advertising and political rhetoric take on a new edge; one where the use of images and coded rhetoric may be used to shape citizens’ opinion without their conscious awareness. While recent research in political psychology has done much to understand the mechanisms through which such unconscious appeals may shape citizens evaluations of candidates and the considerations used to form opinions, we know little about the relative effectiveness of varying types of subconscious appeals.

I consider the further political implications of subconscious appeals, and how persisting social stereotypes may be exploited through the use of subtle cues. Using a 2x2 experimental design, I examine the effect of verbal and visual group-stereotype appeals on opinion. The results suggest that subtle group-stereotype primes significantly affect opinion by virtue of the accessibility of individuals’ social stereotypes. The impact of those appeals is also

moderated by individuals' group identity, suggesting fertile ground for future work on responsiveness to race primes.

### *The Omnipresence of Stereotypes*

Given the changing nature of politics, with candidates taking to appeal to citizens in much subtler ways to avoid being called to the carpet for violating norms against outward bias, it is normatively troubling to know that a plethora of stereotypes still exist (and persist) in the minds of citizens. These oversimplifying classifications and categorizations, and the associated traits develop automatically through everyday interactions. Facing a complicated social environment, individuals seek to simplify social life and 'lighten their cognitive load' (Hamilton 1981). The end result is that citizens possess a library of characteristics about groups which become all-too-easy to use in social interactions and judgment tasks (Taylor 1981), all driven by this process of categorization (Fiske and Taylor 2007). In many cases, citizens are unable to restrain themselves from relying on stereotypes, as such broad-brush generalizations are activated automatically (Bargh 1999).

Of greater concern is the following: whether or not individuals *endorse* stereotypical beliefs about groups, they have *knowledge* of those stereotypes (Devine 1989). Such stereotypical considerations are continually reinforced by interactions with group members (Le Pelley et al. 2010), and are perpetuated by the media (Lasorsa and Dai 2007) and interpersonal communication (Lyons and Kashima 2003), reinforcing connections between stereotype and stereotyped group in memory. This knowledge makes even the most stalwartly unbiased capable of stereotyping and prejudice (Arkes and Tetlock 2004). While stereotypes are an important component of individuals' perceptions of groups, the role stereotypes play in the formation and

expression of public opinion has focused largely on the effects of explicitly stereotypical views on issues with learned associations, predominantly in the domain of race (such as welfare and crime (Gilens 1996; Hurwitz and Peffley 1997, 2005; Kinder and Sanders 1996) or their implications for candidate choice (Berinsky and Mendelberg 2005; Mendelberg 2001; Valentino, Hutchings, and White 2002). It is only more recently that work in psychology (and subsequently political science) has begun considering the implications of *unconscious* attitudes for behavior (for a review, see Fazio and Olson (2003)), demonstrating that such subconscious attitudes towards members of racial groups (Kam 2007; Pérez 2010) and religious denominations (Albertson 2011) also have profound effects for political judgments.

Given the proliferation of groups in society and the predominance of stereotypical considerations in the minds of citizens, the domain of applicability of stereotypical considerations is much broader. Stereotypes need not operate only through the choice to explicitly base an opinion on recalled stereotypical considerations. Stereotypical considerations may be activated and applied to political judgments without conscious awareness in response to certain stimuli through priming.

### *Priming as Process*

Priming changes the salience of considerations, making them more accessible. As a result, primed considerations are more likely to come to mind and influence perceptions (Higgins 1996). Priming occurs in response to exposure to some environmental stimulus; individuals may be primed by rhetorical elements, imagery, and even subconscious stimuli. The consequence for opinion is simple – primed considerations become more likely to shape opinions as they are being formed. However, their effectiveness is not limitless; primes must fit closely with the

outcome they are meant to influence for priming effects to be observed (Bodenhausen and Wyer 1985; Iyengar and Kinder 1987; Moskowitz et al. 1999).

Priming can occur consciously or unconsciously. Individuals' cognitive responses to each of these types of primes are consistent – in both cases, primed considerations become more salient. The difference lies in behavioral outcomes. When appeals are overt, such as an explicit reference to a social group, the considerations raised by the prime are consciously transferred from long-term to working memory. As a consequence, individuals become aware of the considerations that have been primed when prompted by explicit appeals. Awareness is one of the key components to the inhibition of automatic stereotyping effects (Banaji and Hardin 1996; Blair and Banaji 1996). Explicitly primed considerations may come to mind, but their impact may be 'headed off at the pass' so to speak, as individuals are able to consciously decide whether to accept the primed stereotypes and integrate them into a judgment, or reject them and search memory for different, less-objectionable considerations.

Subconscious primes operate through a similar process, with different consequences for behavior. While they also increase the accessibility and salience of particular considerations, they do so 'under the radar' – below the level of conscious processing. Subconscious activation of considerations prevents individuals from inhibiting the application of those cues to subsequent judgments, leading to evaluations, decisions, and opinions which could be considered biased (Banaji and Greenwald 1994; Hess, Hinson, and Statham 2004). Subconscious priming may be triggered through two types of appeals – subliminally, or implicitly, based upon the speed of presentation of the stimulus, and the manner with which it is considered (see Lodge et al. 2010 for a description of the process). Each produce theoretically similar priming effects inasmuch as the target remains unaware of the primed considerations, and thus unable to counteract the

effects of the prime, but are perceived differently by recipients. Subliminal primes may be visual or verbal, but are masked in some manner to prevent or drastically reduce conscious perception (Greenwald, Draine, and Abrams 1996); conversely, implicit primes are consciously perceived but not overt, typically using images to prime considerations of a desired target group (Mendelberg 2001; Valentino, Hutchings, and White 2002) although group-related trait words may also be used to implicitly prime group considerations (Bargh, Chen, and Burrows 1996; Stapel and Koomen 2005).

### *Priming and Politics*

Previous work on priming in the domain of political science has demonstrated varied effects for primes on citizen opinion and action. Issue primes alter the importance of considerations individuals use when forming evaluations of candidates and government officials (Druckman 2004; Iyengar and Kinder 1987; Krosnick and Kinder 1990). Additionally, stereotypical group considerations embedded in the campaign context have also been shown to significantly shape individuals' views of candidates (Berinsky and Mendelberg 2005; Mendelberg 2001; Valentino 1999; Valentino, Hutchings, and White 2002).

When issues become tied to social groups, primed group stereotypes should in turn become the basis for the decision process, unless the recipient is able and willing to counteract them (Blair and Banaji 1996). Priming effects should not be observed for issues without existing linkages; group evaluations and the effects of group identification are less likely to be brought to bear on issue opinion under conditions no overt tie between issue and group exists (Taber 2003). The effects of stereotype primes on opinion should be affected by the nature and strength of their previously existing stereotypical predispositions (Valentino, Hutchings, and White 2002).

Building from these findings, this project examines the breadth of the impact group stereotype primes have on racialized issue opinions by considering citizen response to a varied class of cues. Predominantly, work considering the effects of priming on issue opinions or candidate evaluations has focused on comparisons across subconscious and conscious appeals; here, the focus is on evaluating whether the effects of stereotype primes on opinion vary as a function of presentation (subliminal versus implicit) and nature (verbal versus visual), contrasts which, while prevalent in work on priming in psychology are relatively novel when considering the political implications of such appeals (but see Kam 2007 and Weinberger et al. 2008 for applications of subliminal priming to political judgments).

In addition to these steps forward, I also consider the extent to which, even with unconscious priming processes, prior predispositions moderate priming effects. Previous work has considered the effects of explicit stereotypical considerations (Valentino, Hutchings, and White 2002) as well as implicit attitudes (Kam 2007) having conditioning effects on subjects' responses to primes, I consider how subject responses may be conditioned by the *strength* of their preexisting attitudes.

#### *Automaticity of Attitudes*

One means of assessing the depth of attitudes, and their potential to moderate priming effects is to consider their accessibility in memory. The accessibility of an idea, notion, or concept is a function of the rate that it is transferred from long-term memory to working memory, where it may influence judgments. When forming judgments, citizens are thought to integrate among available considerations stored in memory. More accessible concepts, which are considered more frequently, have greater weight in this process; as such, they become

increasingly more likely to be selected as a consequence of the search through memory, and subsequently influence opinion (Zaller 1992; Zaller and Feldman 1992).

This notion of an attitude-objects' activation potential is derived from an associative network model of memory (for a detailed discussion of this concept see Judd and Krosnick 1989). As such, related considerations are stored together in long-term memory, forming webs of connected ideas and concepts. When a consideration is activated as part of a memory search, closely related considerations are activated as well. While a given idea may have a number of associations, the chance that any one of those related conceptions is made salient is a function of the strength of the association; better connected notions are called to mind more quickly, and more likely to be activated jointly (Fazio 1995).

Returning to priming and its effects on considerations in memory, priming makes activated construct more accessible in memory, increasing the likelihood that the primed concept is integrated into a subsequent judgment. In addition to work demonstrating that priming effects may be moderated by the nature and valence of explicit attitudes, work in psychology has shown that susceptibility to priming effects may be affected by chronic attitude accessibility (Smeesters et al. 2009).

## **Research Design and Expectations**

### *Expectations*

Given the nature of the prime treatments, I expect similar patterns of effects across the treatments; specifically, that in each of the treatments subjects should respond more conservatively relative to the control due to the treatments' priming of negative stereotypes; as such, across policy items, I expect the treatment effects to be positive and significant (H1). As



each of the treatments is designed to prime considerations below conscious awareness, there should not be differences between the implicit and subliminal priming effects (H2). However, previous work in psychology suggests that verbal appeals may have a greater impact than visual cues in shaping speed and accuracy of judgments (Kahlaoui et al. 2007; Koivisto and Revonsuo 2000). As such, I expect larger effects for verbal primes relative to visual primes across both policy dimensions (H3).

The application of primed stereotypes to subsequent judgments may be moderated by their availability in memory. More frequently activated considerations are increasingly likely to come to mind chronically, coloring perceptions of social interactions. Previous research on the implications of automatic, or chronically accessible attitudes has shown that the accessibility of stereotypical attitudes has been shown to affect the activation and application of those considerations (Huntsinger et al. 2010); furthermore, the application of these automatic attitudes may be modified by exposure to stimuli (Dasgupta and Greenwald 2001). As a result, I expect that subjects with more accessible stereotypes should experience larger priming effects (H4).

To test these expectations, I use a 2x2, between-subjects experimental design with a control group. Participants were 672 undergraduates<sup>1</sup> recruited from Political Science courses at a western Research university in the Winter and Spring of 2010; all subjects were compensated for their participation with course credit. The study was administered in an experimental lab in the Political Science department on computers using the Inquisit software; with each machine partitioned from one another to enhance the sense that subjects' responses would be anonymous. Subjects were randomly assigned to one of four experimental conditions, or the control, to be described in greater detail below.

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<sup>1</sup> The sample is 42% White, 25% Asian, 15% Hispanic, 3% African American, and 14% who self-classified as another race.

## *Procedures*

Subjects arrived at the experimental lab during pre-appointed times and were brought into the lab in groups and seated at computer terminals. Assignment to experimental conditions was determined by the subject ID number assigned to each participant, taken from a randomly ordered list of integers.<sup>2</sup> Initially subjects completed a series of demographic batteries (including political attention, partisanship, and ideology) before moving to the group stereotype battery. Here, subjects were asked to evaluate a series of groups (African Americans, Asians, Hispanics, and Whites) across a series of stereotype dimensions, with both groups and stereotype batteries being presented in random order.<sup>3</sup> In addition to measuring their explicit responses, to these items, subjects' responses for each of the stereotype question were timed to the millisecond to capture the extent to which group stereotypes are chronically accessible. Following these batteries, subjects received the experimental treatment (with the exception of those in the control who moved directly to the outcome battery) before proceeding to the policy item battery, which serves as the outcome of interest. Following this, subjects completed a brief demographic battery before being thanked and dismissed.

## *Treatment Manipulations*

The experimental treatments were design to test the efficacy of two types of appeals in invoking group stereotypes: verbal primes and visual primes. Each priming technique was administered either *implicitly* (meaning that subjects should be conscious of the *stimulus*, but not

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<sup>2</sup> Subjects were distributed across conditions as follows: 108 subjects in the implicit verbal treatment, 141 in the implicit visual treatment, 132 in the subliminal verbal treatment, 143 in the subliminal visual treatment, and 148 in the control condition.

<sup>3</sup> Subjects were asked whether they felt the average member of each group could be characterized as 'hardworking' or 'lazy,' 'trustworthy' or 'untrustworthy,' and 'intelligent' or 'unintelligent.' Each evaluation is measured on a seven-point scale.

the considerations the stimulus invokes (Mendelberg 2001, 2008, 2008; Valentino, Hutchings, and White 2002)) or *subliminally* (meaning that the stimulus was presented below levels of conscious processing, such that subjects should remain unaware of both the stimulus as well as the considerations activated by it (Burdein, Lodge, and Taber 2006; Kam 2007; Weinberger and Westen 2008)).

The implicit verbal priming task consists of five trials of a ‘scrambled sentence task’ (Bargh, Chen, and Burrows 1996; Srull and Wyer Jr. 1979; Stapel and Koomen 2005) in which subjects were told they were completing a language proficiency task in which they would be presented with randomly ordered words and asked to create the most grammatically correct sentence possible. Embedded within the word sets were adjectives designed to prime racial stereotypes, specifically negative stereotypes of African Americans.<sup>4</sup> While subjects are conscious of the prime stimuli, the nature of the task (including the use of stereotypical traits, as opposed to priming the group of interest – here, African Americans) diminishes the likelihood that subjects comprehend the purpose of the treatment, which would inhibit stereotype priming.

Subjects in the implicit visual treatment were randomly presented with a set of five images depicting African Americans in stereotypically negative conditions (i.e. individuals in poverty, wearing gang apparel, or displaying threatening facial expressions). Each image was presented for three seconds, such that subjects were conscious of the image content; however, none of the images was presented with any context, which forces subjects to contextualize the images themselves. The use of imagery in this way has been shown to unconsciously activate stereotypical considerations, influencing subsequent judgments (Mendelberg 2001; Palmer 2010; Palmer and Peterson 2009; Valentino, Hutchings, and White 2002).

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<sup>4</sup> The adjectives included in the scrambled sentence task were randomly selected from the following list: violent, lazy, dishonest, hostile, stupid, ignorant, aggressive, hostile, rude, and unreliable (Devine 1989).

The subliminal priming tasks take a similar form to their implicit counterparts. However, rather than being presented at perceivable intervals, the subliminal stimuli were presented for 15 milliseconds, sufficient for subjects to *perceive* the stimulus, well below the 60 millisecond threshold necessary for conscious processing to occur (Bargh and Pietromonaco 1982). The subliminal verbal treatment included all ten of the stereotype traits described above; prior to the presentation of the subliminal prime subjects were presented with a small black dot in the center of the screen (designed to draw their focus to the prime) and then, one second later, a forward mask of letter strings (“KQHYTPDQFPBYL”). Following the subliminal presentation of the trait prime (15 milliseconds), subjects were presented with a backward mask of letter strings (“PYLDQFBYTKPH”) for 50 milliseconds; this repeated for a total of ten trials.

In the subliminal visual priming task, subjects were presented with a series of 10 images, as described above in the implicit visual task. Prior to the presentation of the subliminal stimuli, subjects were presented with a black shape in the middle of the screen (either a circle, square, pentagon, triangle, or a hexagon) designed to both draw their attention to the center of the screen, as well as serving as a mask for the prime. Prior to the prime, the shape appeared for one full second, as a forward mask; following the prime, another shape appeared for another full second as a backward mask. The prime stimulus itself appeared for 15 milliseconds.

Each of these treatments is meant to unconsciously activate negative stereotypes toward African Americans, which I would expect should have consequences for subjects’ opinion on issues and policy domains linked to African Americans.

### *Dependant Variables*

To capture opinion on racialized issues, subjects answered five policy item questions, asking about their concerns about crime, support for affirmative action, the death penalty, and spending on prisons and poverty assistance<sup>5</sup> with each question randomly presented to subjects to avoid order effects. Each variable is recoded to run from most liberal to most conservative response.

### *Explanatory Variables*

To predict opinion toward racialized policy items, I consider the effects of the experimental manipulations, in addition to subjects' explicit stereotypes toward African Americans, and the chronic accessibility of those attitudes. The explicit measure of stereotypes toward African Americans, as described above, is an additive index of subjects' beliefs as to whether most African Americans are hardworking or lazy, trustworthy or untrustworthy, and intelligent or unintelligent. The measure is centered at 0 (neutral) and runs from -1 (most positive) to 1 (most negative).

The accessibility of attitudes toward African Americans compares a subjects' average speed of response to the African American stereotype battery to their average speed of response for the stereotype batteries for the other groups subjects were asked to evaluate (Asians, Hispanics, and Whites). This allows control for subjects' underlying speed of response. Chronic accessibility is then represented as a dummy variable taking on the value of 1 if subjects' average

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<sup>5</sup> Question wording is as follows: Overall, how would you describe the problem of crime in the area where you live: is it extremely serious, very serious, moderately serious, not too serious, or not serious at all? Do you generally favor or oppose affirmative action programs for racial and ethnic minorities? Do you favor or oppose the death penalty for a person convicted of murder? Should state spending for prisons be increased, decreased, or kept about the same? Should spending on aid to the poor be increased, decreased, or kept about the same?

speed of response to the African American stereotype battery is faster than their average response to the other stereotype items and 0 otherwise.

## **Results**

To assess the above expectations, I estimate a series of ordered probit regressions on dummy variables for each of the treatments, as well as explicit measures of subjects' stereotypes toward African Americans, and the accessibility of those considerations. These results are presented in Table 1.

The first column of Table 1 presents the effects of the experimental manipulations and group predispositions on the concerns toward crime. Three of the four experimental treatments reach or approach statistical significance, with only the Implicit Visual treatment failing to have a discernible effect on opinion. More interestingly, all of the treatments effects are negative, suggesting subjects in the treatment conditions respond more liberally relative to the control, a finding that is quite contrary to expectations. Also surprising, subjects' explicit stereotypes toward African Americans fail to significantly shape subjects' views toward crime.

The following four columns of Table 1 represent the effects of the treatments on the remaining policy items. Again, it is surprising to observe the inconsistent pattern of effects for both the treatment variables and explicitly avowed stereotypes. Only in two instances (opinion towards spending on prisons and antipoverty spending) does any of the treatment variables reach conventional levels of significance (in both circumstances the implicit visual treatment variable), while the implicit verbal treatment variable approaches conventional levels of significance on opinion toward the death penalty.

Predictions for the treatment conditions, holding stereotypes and stereotype accessibility constant are shown in Figure 1. Particularly striking across each of the outcomes is the similarity in effects across the different conditions, as well as the disparities in the scope of their impact, also contradictory to expectations. Across the sample, subjects appear relatively unconcerned about crime, unsupportive of prison spending, and more supportive of spending to aid the poor. However, they are modestly opposed to affirmative action, and supportive of the death penalty, surprising heterogeneity in the minds of respondents across the different issue domains.

This suggests several possibilities. A simple explanation could be that, as a whole, subjects failed to draw a connection between racial stereotypes and the items which comprise the punitive dimension, mitigating any priming effects, a claim which seems unlikely however, given past work considering the structure of opinion and rhetorical frames regarding the death penalty (Baumgartner, Boef, and Boydston 2008) and crime (Hurwitz and Peffley 1997, 2005; Peffley and Hurwitz 2002; Peffley, Hurwitz, and Sniderman 1997). One might also consider that too strong a connection existed between racialized considerations and the policy dimension, leading to a sort of ceiling effect which masked any effects of the treatment, an outcome which would seem more likely given the nature of the stimuli and judgment task, and that the treatments had the expected effect on a separate dimension of racialized opinion.

However, when considering the problem more deeply, these unexpected patterns of results across both policy dimensions suggest an additional dynamic occurring that alters the activation and application of stereotypical considerations to racialized judgments. A first consideration is whether the racial heterogeneity of the sample in some way biased the subjects' responses to the experimental manipulations. While the majority of published work examining the effects of racialized primes on opinion focuses on White, non-Hispanic samples (Mendelberg

2008), there is some evidence of diversity in patterns of response to race primes between Whites and African Americans (White 2007). It may also be the case that the accessibility of subjects' racialized considerations condition patterns of response, as supposed by H4. I consider each of these cases separately by replicating the analyses in Table 1, splitting the sample by stereotype accessibility (Tables 2 and 3), and racial subgroup (Tables 4 and 5).

To consider these questions further, as well as to explicitly test H4, I begin by considering the conditioning effect of chronic stereotype accessibility on the effects of subconscious primes on opinion. For simplicity of interpretation, I reestimate the models from Table 1, splitting the sample into two discrete groups – those whose explicit stereotypes toward African Americans are less accessible, on average, than their stereotypes toward other groups, and those whose stereotypical considerations are more accessible. This does not differentiate between positive and negative stereotypes<sup>6</sup>, but simply their availability in memory. The results of these analyses appear in Tables 2 (low accessibility) and 3 (high accessibility).

Among subjects with less accessible stereotypes toward African Americans, only the measure of explicitly endorsed stereotypes consistently shapes opinion, having a statistically discernible effect in three of the five models (opinion toward prison spending, the death penalty, and antipoverty spending). The treatments themselves are only weakly influential of opinion, having a significant effect in three instances (both the implicit verbal treatment twice, on fear of crime and opinion toward prison spending, and the implicit visual treatment twice, on opinion toward affirmative action and antipoverty spending). This would seem to suggest that the effects of unconscious priming are mitigated to some extent by inaccessible stereotypical considerations, and only explicitly endorsed beliefs come into effect when making conscious judgments.

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<sup>6</sup> A difference-of-means test shows that subjects with more accessible stereotypes toward African Americans are slightly more negatively disposed, although the difference is not statistically significant.



The treatment effects for subjects with highly accessible stereotypical considerations are more consistent for four of the five issues, only failing to produce discernible results for opinion on prison spending. More interestingly however, is that, across issues, we observe variability in both the *direction* of the treatment effects, as well as in the effectiveness of the primes across both treatment conditions and issues. On the same outcome, we see treatments having divergent effects, leading some subjects to respond more liberally than those in the control, and more conservatively in others.

Substantively, we see that stereotype accessibility appears to drive the effects of the treatments. Figure 2 and 3 plot the effects for inaccessible and accessible stereotypes, respectively. The patterns of effects are similar to those observed in the full sample, with respondents being most liberal on crime, prison spending, and aid to the poor, and most conservative on affirmative action and the death penalty. Additionally, while the impact of the treatments remains similar across outcomes, some variation does emerge. The interesting differences emerge in the effectiveness of the treatments in shaping opinion. Across each of the outcomes, we see that the primes have a stronger impact on opinion among respondents with more accessible stereotypes toward African Americans, particularly in the case of opposition to affirmative action and the death penalty, an increase of the likelihood of approximately 10 points across conditions.

Stereotype accessibility appears to be a component that shapes subjects' responses to priming treatments, enhancing the impact of the primes among those whose stereotypes are more accessible. The differences in response induced by stereotype accessibility are, however, somewhat small, suggesting other moderating factors may be at work. Random assignment to conditions has theoretically produced an equal distribution of stereotypical considerations and

stereotype accessibility across conditions; additionally, random ordering of questions should mitigate concerns of order effects. This discrepancy would seem to add further credence to the notion posited above, that heterogeneity in response to race primes has altered subjects' patterns of response. To consider this issue I reestimate the models from Table 1 across White and Nonwhite subsamples in Tables 4 and 5.

The results presented in Table 4 use a subsample of White respondents as a test of whether race-of-respondent shapes reactivity to subconscious racial priming. Across three of the five models (Crime, Prison spending, and the Death Penalty) we see much more consistent effects of the treatments on opinion. Again, as with the findings from Table 1, the point estimates are largely negative, suggesting more *liberal*, rather than *conservative* responses. Only for opinion on spending on prisons do the treatments have the expected effect, *increasing* support for greater spending on prisons for three of the four treatments (the implicit verbal treatment fails to reach statistical significance). Also surprising is the lack of consistent effects for the explicit measure of racial stereotypes; while the measure approaches or reaches conventional levels of statistical significance in three of the five models (crime, the death penalty, and antipoverty spending), it is in the expected direction in only two of those three models.

For nonwhite subjects in the sample, the patterns of results are far less clear, as we may see from Table 5. While the implicit verbal prime has the most consistent effect, significantly influencing opinion in three of the five models (affirmative action, prison spending, and antipoverty spending), all are *negative*, suggesting more liberal patterns of response relative to the control. In addition to these results, both verbal priming treatments have a significant impact on fear of crime, but, once again, the estimates are in the opposite direction of expectations.

Again, surprisingly, the measure of explicit stereotypes is inconsistently related to opinion, obtaining statistical significance in the expected direction two of the five models (affirmative action and the death penalty).

The substantive impact of the treatments across white and nonwhite subsamples on racialized issue opinions are presented in Figures 4 and 5 respectively. Unlike the accessibility models, we see much starker differences between white and nonwhite subjects. While the most conservative responses across subsamples remain opinion on affirmative action and the death penalty, Whites are far more likely to be conservative on Affirmative action than nonwhites, by 25-30 points across conditions. Whites are also somewhat more likely to oppose aid to the poor, and, surprisingly, also seem less concerned about crime.

Taken together, these results provide further support for previous research, which has shown heterogeneity in responses to racial priming across different racial groups. The inconsistent pattern of effects for the nonwhite subjects in the studies also raises questions as to whether members of less-frequently studied racial groups (such as Asians and Hispanics) are in fact relatively unaffected by, or in fact themselves respond differently to subconscious racial priming, a notion posited but largely untested thus far in work on race priming (Hutchings and Jardina 2009). Unfortunately this premise cannot be tested directly by this study due to limited numbers of respondents in these groups in the sample; however, the apparent heterogeneity in priming effects across racial groups would seem to suggest an area ripe for future work.

### *Discussion and Conclusions*

The focus of this project was to consider the differential effects of varying forms of subconscious appeals on opinion. Given recent attention in not only political science research,

but mainstream politics as well to the effects of subliminal appeals on opinion and evaluation of political figures, the findings, while tentative, represent an important step forward in understanding not only the implications of these appeals for judgments, but also how those effects may be altered by characteristics of the target. While as a first test comparing the relative effectiveness of classes of subtle appeals, the study could be said to be inconclusive. Contrary to expectations, subjects exhibited limited variation in the impact on opinion across the priming treatments. However, subjects did exhibit interesting variation across policy domains (with larger priming effects observed for the affirmative action and the death penalty, but not the other issues), raising questions for further research.

A caveat should be placed upon the nature of the study itself. The recent trend in political science research to use laboratory experiments based upon student samples raises a number of issues regarding the generalizability of the inferences taken from the sample to the general population. This debate is similar to one raised years before in psychology (Sears 1986). This concern, while valid, does not suggest that there is nothing to be learned from collegiate samples, particularly given recent work on the topic by Druckman and Kam (2011) which suggests the concern should not necessarily be the sample. Rather, it opens the door for future research, particularly the replication and extension of such studies.

Additionally, there is the possibility that subjects' responsiveness to the primes may have been affected by the study design. As noted, subjects' group stereotypes were measured immediately prior to the experimental manipulation. Doing so explicitly may have made subjects' reactive to the experimental manipulations, either diminishing their effectiveness, or producing the counterintuitive findings observed in the first set of analyses. It seems plausible that a replication of this design using a less overt means of assessing group perceptions, such as

the Implicit Attitude Test could feasibly produce a different pattern of results, providing for a better test of the expectations delineated above.

Despite some limitations, these analyses have suggested a number of points for future research. Across a number of issues which fall into differing policy domains (beneficial and punitive), the subliminal and implicit treatments appear to have limited effects in the sample as a whole, and when they did appear to shape opinion it was in the opposite direction than expectations would dictate. Closer consideration of the empirical findings, taking into account not only variation in individual-level characteristics demonstrate that these characteristics appear to moderate the ways in which individuals respond to racialized primes. Subjects whose stereotypes are more chronically available appear to be more susceptible to racial priming across a battery of judgments, while those whose stereotypical considerations were less accessible were only weakly influenced by the same treatments. While this finding stems from the accessibility of consciously expressed attitudes, one could also consider the effects that *unconscious* attitudes may have in moderating priming effects as these unexpressed beliefs have been shown to have their own independent influence on opinion that is discernible from explicitly expressed views. (Kam 2007; Pérez 2010).

In addition to the effects of attitude accessibility, priming effects were also moderated by subjects' racial background. Comparing a subsample of White respondents to a pooled subsample of Nonwhites (including Hispanics, Asians, and African Americans), priming effects were much more consistent for Whites; however, different patterns of results were observed under particular circumstances for Nonwhite respondents under certain circumstances. Further research should delve into this domain further, considering whether the differential effects are simply across the White-Nonwhite domain, or if each group responds differently to race priming.

While this paper has endeavored to make inroads into our understanding of the power of varying forms of subconscious priming, and the manner with which such effects may be altered, it has also raised further questions for future research. Indeed, given the findings and the changing nature of politics and political campaigning, it is clear that there is much work to be done to understand these phenomena.

**Table 1. Priming Effects on Racialized Issue Opinion – Full Sample**

	<b>Fear of Crime</b>	<b>Affirmative Action</b>	<b>Prison Spending</b>	<b>Death Penalty</b>	<b>Antipoverty Spending</b>
Implicit Verbal treatment	<b>-0.15*</b> (0.06)	-0.01 (0.20)	0.04 (0.18)	<b>-0.22+</b> (0.13)	-0.03 (0.14)
Implicit Visual treatment	-0.08 (0.14)	-0.01 (0.03)	<b>-0.01**</b> (0.003)	-0.10 (0.14)	<b>-0.13**</b> (0.01)
Subliminal Verbal treatment	<b>-0.22**</b> (0.01)	0.15 (0.18)	0.04 (0.04)	-0.004 (0.12)	0.08 (0.17)
Subliminal Visual treatment	<b>-0.16**</b> (0.04)	-0.10 (0.08)	0.07 (0.10)	-0.07 (0.07)	-0.04 (0.06)
Explicit Stereotypes	0.03 (0.07)	<b>0.59**</b> (0.18)	0.04 (0.08)	<b>0.57*</b> (0.18)	<b>0.63**</b> (0.04)
Accessibility of Stereotypes	-0.003 (0.11)	0.01 (0.02)	0.05 (0.07)	0.03 (0.12)	<b>0.12**</b> (0.04)
Cut 1	-0.71 (0.11)	-1.16 (0.13)	0.44 (0.01)	-0.93 (0.09)	0.11 (0.19)
Cut 2	0.46 (0.11)	-0.21 (0.11)	1.60 (0.05)	-0.37 (0.11)	1.26 (0.16)
Cut 3	1.12 (0.20)	0.34 (0.09)		-0.02 (0.10)	
Cut 4	1.74 (0.22)	1.02 (0.09)		0.93 (0.03)	
<i>Log Likelihood</i>	-882.10	-1033.52	-538.80	-1030.18	-614.01
N	667	667	667	667	667

Estimates are ordered probit coefficients with robust standard errors in parentheses; + significant at 10%; \* significant at 5%; \*\* significant at 1%. DV: 1 (spending should be decreased) to 3 (spending should be increased).

**Table 2. Priming Effects on Racialized Issue Opinion – Low Stereotype Accessibility**

	<b>Fear of Crime</b>	<b>Affirmative Action</b>	<b>Prison Spending</b>	<b>Death Penalty</b>	<b>Antipoverty Spending</b>
Implicit Verbal treatment	<b>-0.40*</b> (0.18)	-0.19 (0.39)	<b>0.45*</b> (0.19)	-0.20 (0.20)	-0.11 (0.48)
Implicit Visual treatment	-0.10 (0.14)	<b>-0.18**</b> (0.04)	0.13 (0.11)	-0.04 (0.15)	<b>-0.21**</b> (0.02)
Subliminal Verbal treatment	-0.15 (0.11)	0.01 (0.30)	0.10 (0.12)	-0.05 (0.18)	-0.04 (0.33)
Subliminal Visual treatment	-0.06 (0.09)	-0.27 (0.20)	0.28 (0.18)	<b>-0.14+</b> (0.08)	-0.25 (0.17)
Explicit Stereotypes	-0.04 (0.09)	0.43 (0.32)	<b>0.21**</b> (0.01)	<b>0.41**</b> (0.07)	<b>0.58**</b> (0.19)
Cut 1	-0.72 (0.20)	-1.34 (0.28)	0.55 (0.05)	-0.93 (0.17)	-0.01 (0.32)
Cut 2	0.45 (0.13)	-0.28 (0.16)	1.88 (0.26)	-0.38 (0.14)	1.27 (0.26)
Cut 3	1.15 (0.22)	0.24 (0.16)		-0.02 (0.16)	
Cut 4	1.73 (0.23)	0.92 (0.14)		0.98 (0.01)	
<i>Log Likelihood</i>	-396.27	-459.76	-230.90	-463.22	-262.39
N	300	300	300	300	300

Estimates are ordered probit coefficients with robust standard errors in parentheses; + significant at 10%; \* significant at 5%; \*\* significant at 1%. DV: 1 (spending should be decreased) to 3 (spending should be increased).



**Table 3. Priming Effects on Racialized Issue Opinion – High Stereotype Accessibility**

	<b>Fear of Crime</b>	<b>Affirmative Action</b>	<b>Prison Spending</b>	<b>Death Penalty</b>	<b>Antipoverty Spending</b>
Implicit Verbal treatment	<b>0.03**</b> (0.01)	<b>0.15**</b> (0.04)	-0.29 (0.21)	<b>-0.26**</b> (0.08)	0.03 (0.14)
Implicit Visual treatment	-0.06 (0.14)	0.14 (0.12)	<b>-0.11+</b> (0.07)	-0.16 (0.15)	<b>-0.06**</b> (0.01)
Subliminal Verbal treatment	<b>-0.28**</b> (0.09)	<b>0.26**</b> (0.07)	-0.02 (0.01)	0.03 (0.07)	<b>0.18**</b> (0.03)
Subliminal Visual treatment	<b>-0.24**</b> (0.01)	0.04 (0.03)	-0.08 (0.07)	-0.03 (0.06)	<b>0.12+</b> (0.06)
Explicit Stereotypes	0.07 (0.06)	<b>0.73**</b> (0.07)	-0.07 (0.17)	<b>0.71*</b> (0.28)	<b>0.68**</b> (0.22)
Cut 1	-0.71 (0.06)	-1.01 (0.02)	0.29 (0.07)	-0.96 (0.14)	0.09 (0.02)
Cut 2	0.47 (0.01)	-0.16 (0.02)	1.37 (0.01)	-0.39 (0.21)	1.16 (0.03)
Cut 3	1.12 (0.08)	0.42 (0.01)		-0.05 (0.18)	
Cut 4	1.78 (0.10)	1.11 (0.01)		0.87 (0.17)	
<i>Log Likelihood</i>	-482.73	-570	-302.94	-565.17	-349.29
N	367	367	367	367	367

Estimates are ordered probit coefficients with robust standard errors in parentheses; + significant at 10%; \* significant at 5%; \*\* significant at 1%. DV: 1 (spending should be decreased) to 3 (spending should be increased).

**Table 4. Priming Effects on Racialized Issue Opinion – White Subsample**

	<b>Fear of Crime</b>	<b>Affirmative Action</b>	<b>Prison Spending</b>	<b>Death Penalty</b>	<b>Antipoverty Spending</b>
Implicit Verbal treatment	0.01 (0.03)	-0.06 (0.36)	0.08 (0.10)	<b>-0.20**</b> <b>(0.03)</b>	-0.18 (0.17)
Implicit Visual treatment	<b>-0.24**</b> <b>(0.05)</b>	<b>0.16*</b> <b>(0.07)</b>	<b>0.23**</b> <b>(0.07)</b>	<b>-0.26**</b> <b>(0.08)</b>	-0.14 (0.12)
Subliminal Verbal treatment	<b>-0.31**</b> <b>(0.07)</b>	0.18 (0.19)	<b>0.32**</b> <b>(0.005)</b>	<b>-0.16**</b> <b>(0.02)</b>	0.24 (0.22)
Subliminal Visual treatment	<b>-0.28**</b> <b>(0.04)</b>	-0.08 (0.14)	<b>0.13**</b> <b>(0.04)</b>	<b>-0.26**</b> <b>(0.05)</b>	0.03 (0.08)
Explicit Stereotypes	<b>-0.15*</b> <b>(0.05)</b>	0.90 (0.50)	0.01 (0.06)	<b>0.69*</b> <b>(0.27)</b>	<b>1.07*</b> <b>(0.46)</b>
Accessibility of Stereotypes	0.21 (0.20)	-0.17 (0.08)	<b>0.15**</b> <b>(0.03)</b>	-0.01 (0.10)	-0.10 (0.09)
Cut 1	-0.44 (0.16)	-1.67 (0.06)	0.67 (0.04)	-1.03 (0.12)	-0.25 (0.20)
Cut 2	0.94 (0.11)	-0.63 (0.03)	1.80 (0.06)	-0.49 (0.07)	0.99 (0.15)
Cut 3	1.74 (0.27)	-0.18 (0.03)		-0.23 (0.06)	
Cut 4	2.69 (0.18)	0.60 (0.03)		0.72 (0.11)	
<i>Log Likelihood</i>	-312.48	-413.69	-220.14	-423.43	264.10
N	279	279	279	279	279

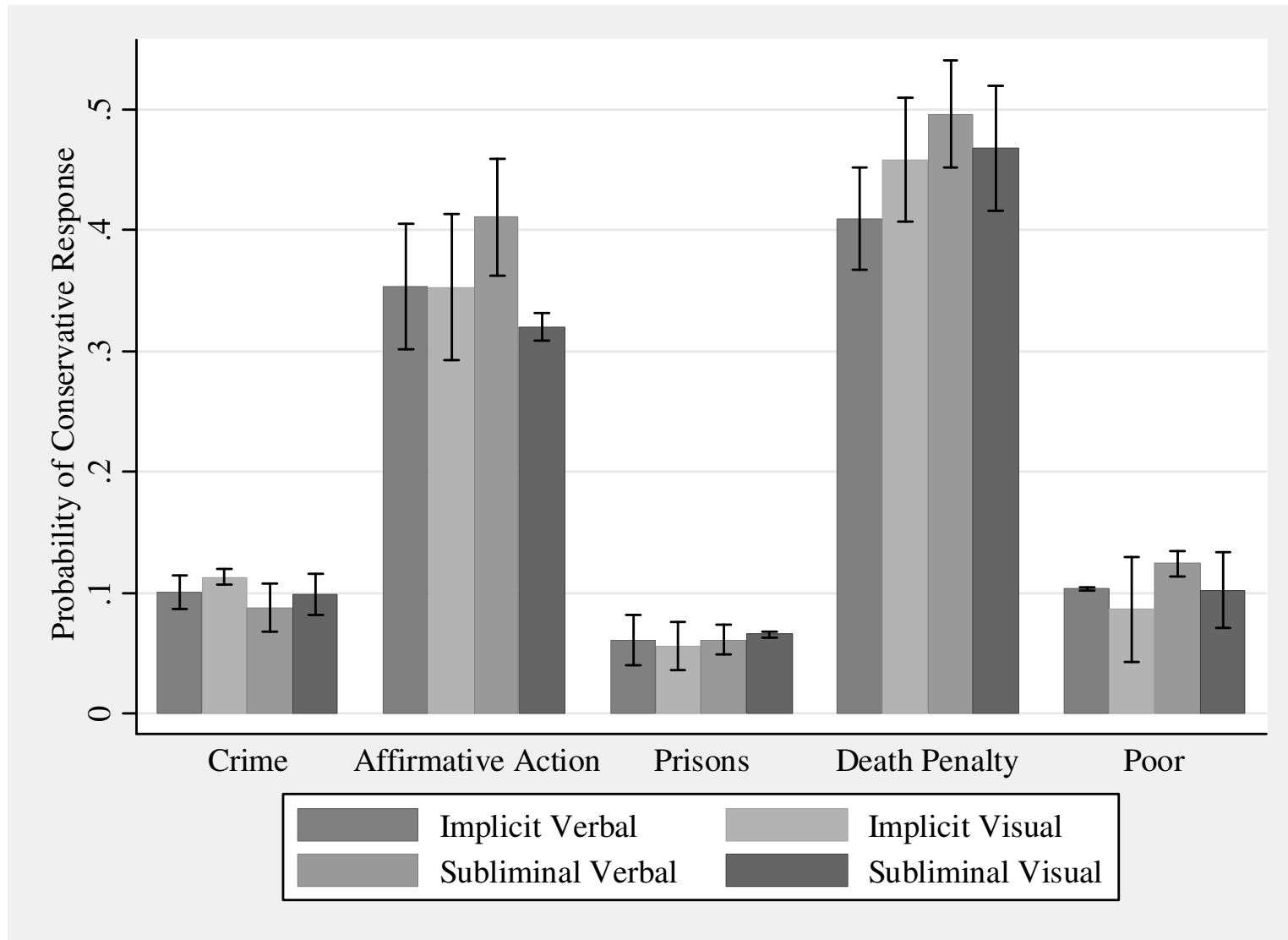
Estimates are ordered probit coefficients with robust standard errors in parentheses; + significant at 10%; \* significant at 5%; \*\* significant at 1%. DV: 1 (spending should be decreased) to 3 (spending should be increased).

**Table 5. Priming Effects on Racialized Issue Opinion – Nonwhite Subsample**

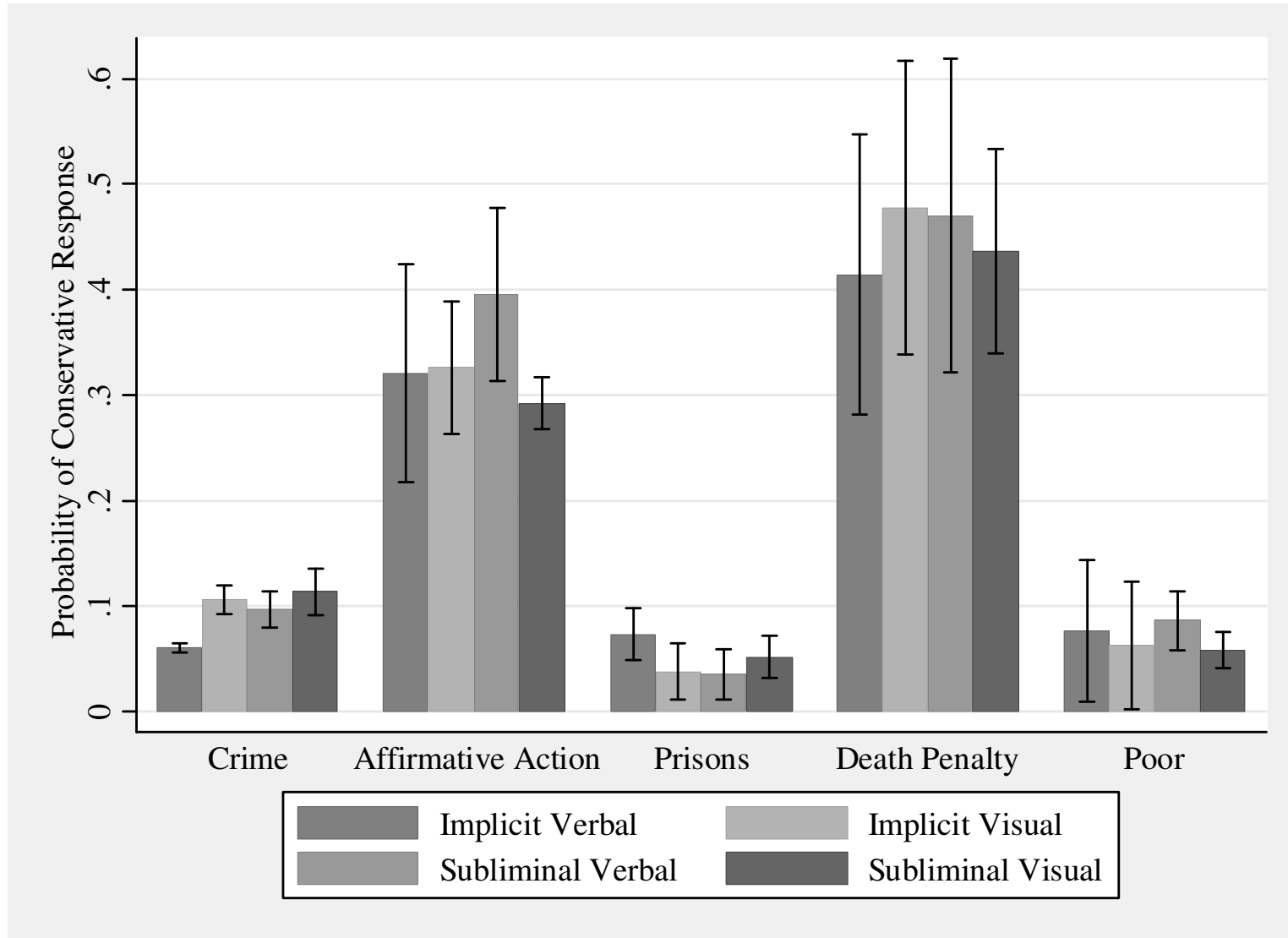
	<b>Fear of Crime</b>	<b>Affirmative Action</b>	<b>Prison Spending</b>	<b>Death Penalty</b>	<b>Antipoverty Spending</b>
Implicit Verbal treatment	<b>-0.24**</b> (0.07)	0.04 (0.16)	-0.01 (0.23)	-0.22 (0.23)	0.07 (0.13)
Implicit Visual treatment	0.03 (0.12)	<b>-0.18**</b> (0.03)	<b>-0.18**</b> (0.04)	0.003 (0.20)	<b>-0.15**</b> (0.04)
Subliminal Verbal treatment	<b>-0.20**</b> (0.06)	0.15 (0.25)	<b>-0.16**</b> (0.03)	0.11 (0.21)	0.002 (0.21)
Subliminal Visual treatment	-0.06 (0.05)	<b>-0.18*</b> (0.07)	0.06 (0.11)	0.05 (0.16)	<b>-0.16*</b> (0.08)
Explicit Stereotypes	0.06 (0.07)	<b>0.55**</b> (0.02)	0.08 (0.11)	<b>0.50**</b> (0.12)	0.41 (0.26)
Accessibility of Stereotypes	-0.09 (0.06)	0.10 (0.08)	-0.01 (0.11)	0.04 (0.13)	<b>0.26+</b> (0.16)
Cut 1	-0.89 (0.05)	-0.95 (0.20)	0.29 (0.01)	-0.88 (0.07)	0.32 (0.23)
Cut 2	0.21 (0.09)	-0.002 (0.21)	1.50 (0.09)	-0.31 (0.15)	1.46 (0.25)
Cut 3	0.88 (0.16)	0.69 (0.19)		0.11 (0.15)	
Cut 4	1.55 (0.18)	1.36 (0.21)		1.07 (0.15)	
<i>Log Likelihood</i>	-544.68	-581.36	-314.60	-600.23	-335.81
N	387	387	387	387	387

Estimates are ordered probit coefficients with robust standard errors in parentheses; + significant at 10%; \* significant at 5%; \*\* significant at 1%. DV: 1 (spending should be decreased) to 3 (spending should be increased).

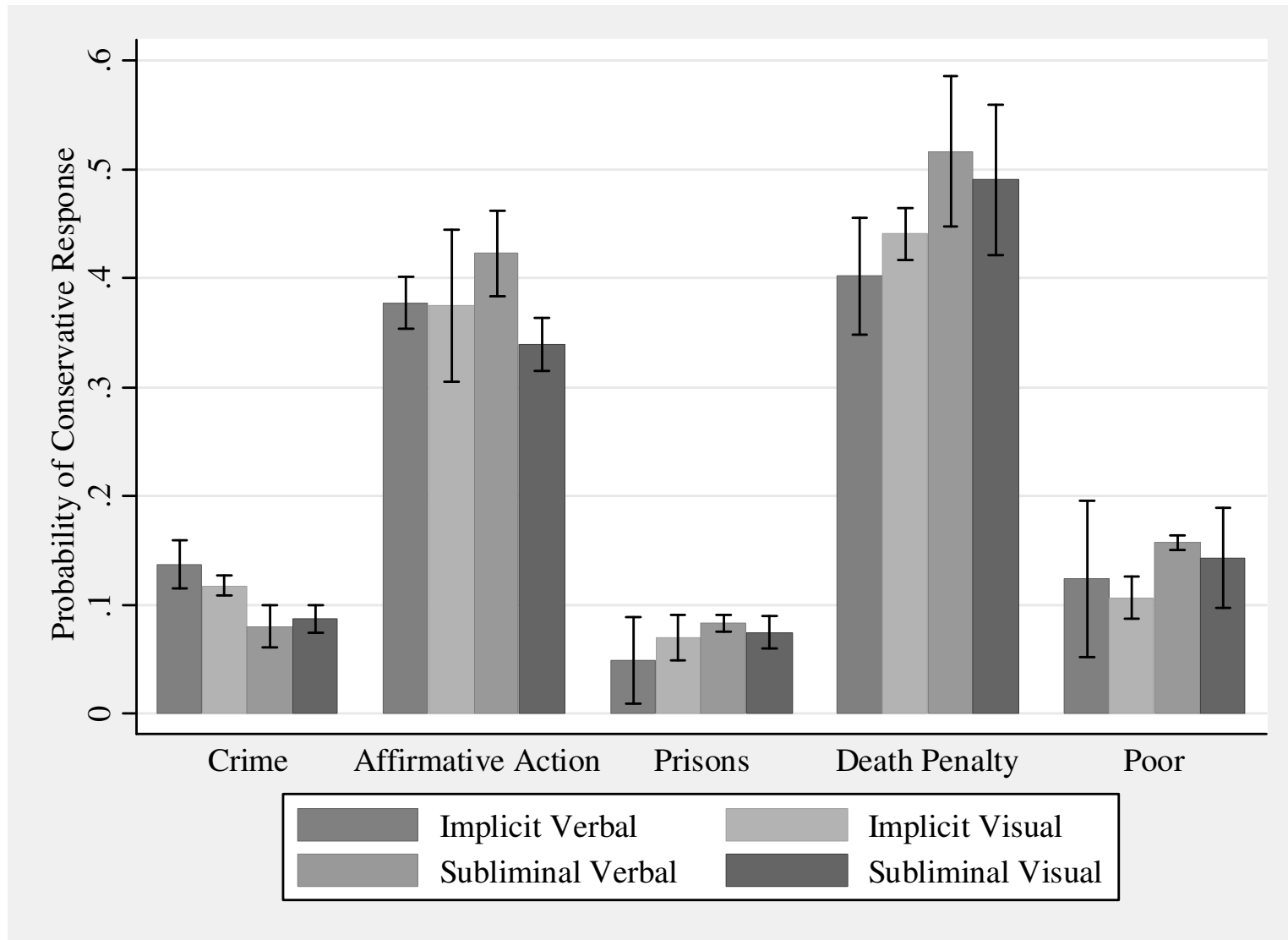
**Figure 1. Priming Effects on Racialized Policy Opinion – Full sample**



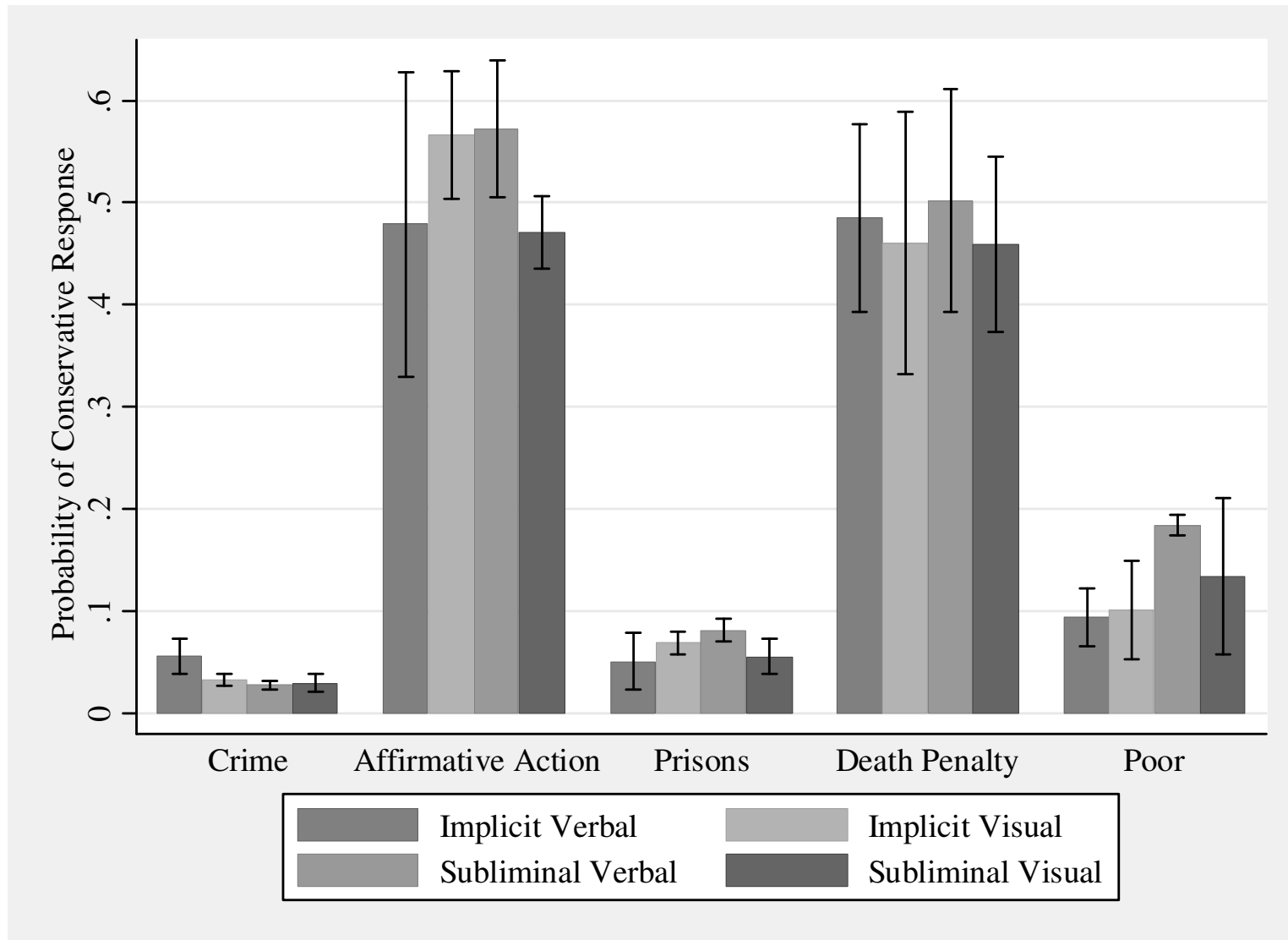
**Figure 2. Priming Effects on Racialized Policy Opinion – Inaccessible Stereotypes**



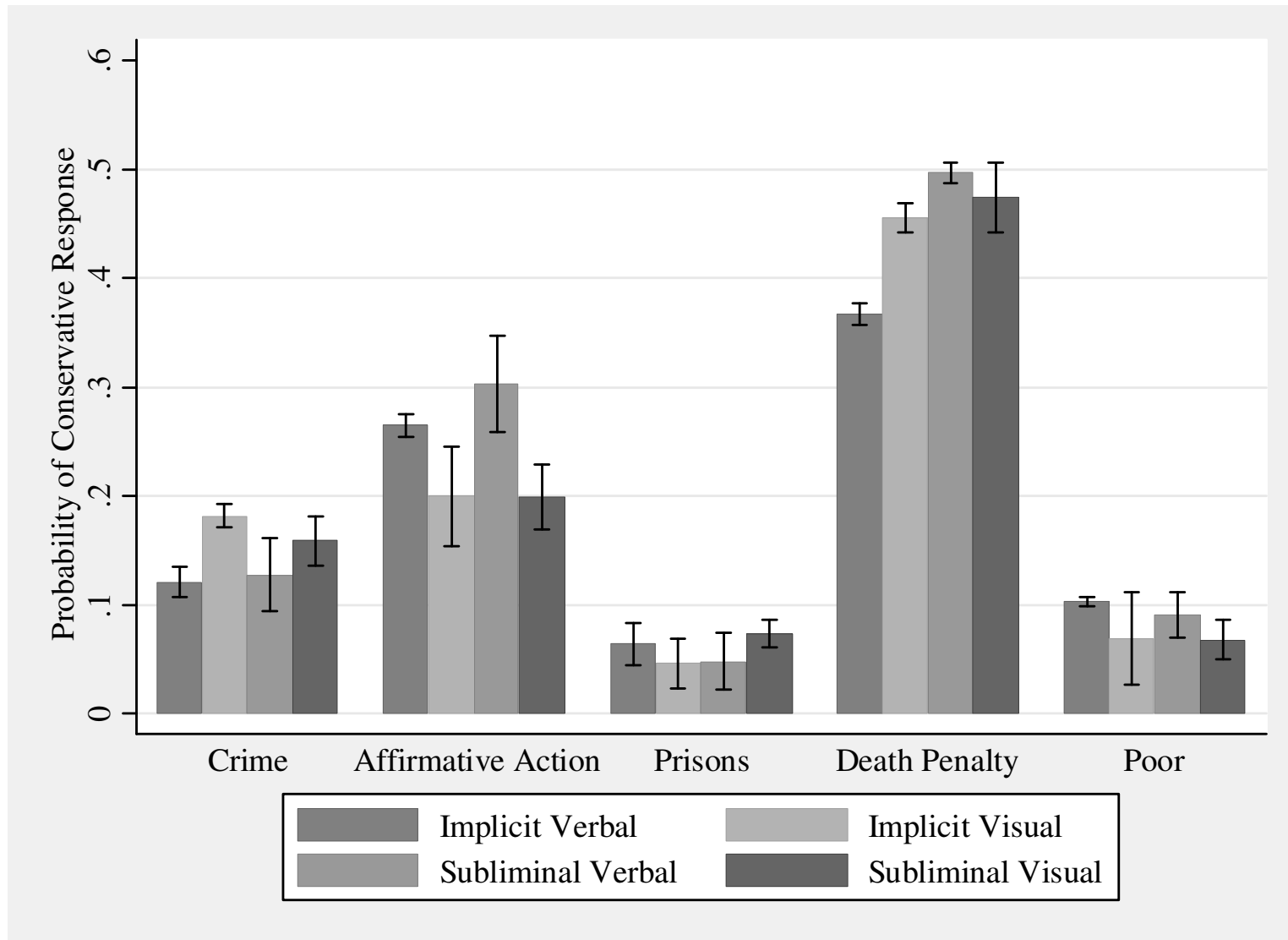
**Figure 3. Priming Effects on Racialized Policy Opinion – Accessible Stereotypes**



**Figure 4. Priming Effects on Racialized Policy Opinion – White subsample**



**Figure 5. Priming Effects on Racialized Policy Opinion – Nonwhite subsample**





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