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# Media and the Shooter Bias: Investigating the Relationship Between Implicit Racial Biases and News Coverage

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Abstract

Past research has suggested that the media is likely to depict Black individuals in a more negative and/or threatening manner than White individuals (Dixon & Linz, 2000; Sommers et al., 2006). Additionally, past research investigating the effect of race on the decision to shoot or not shoot in a simple shooter videogame suggests that people are both faster and more accurate when deciding to shoot armed Black targets and when deciding to not shoot unarmed White targets (Correll et al., 2002). This phenomenon is known as shooter bias. This study investigated the effect of media exposure, specifically exposure to an online news article, on an individual's shooter bias. Participants read an article depicting either a Black or White individual committing a crime directly before completing a shooter game. Contrary to past research, results revealed no main effects of race or item (gun vs. no gun) on reaction time. However, a race x item interaction was observed for reaction time, as was an item x condition interaction for inaccuracy. Participants were faster to react to targets if the target was Black and held a random object. They were also more inaccurate in their decisions while playing the game if they had read the media article with the White criminal and the target was holding a random object. Results revealed a main effect of item for both shooting and not shooting, such that participants were more likely to shoot armed targets and more likely to not shoot unarmed targets. A main effect of condition on participant's likelihood to not shoot targets was also observed, such that participants who read the article with the White criminal were less likely to shoot targets while playing the shooter game. Neither explicit attitudes towards racial minorities nor explicit ratings of fear experienced while reading the media article correlated with reaction times.

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**Historical Context**

To say that racial inequality is a problem within the United States would be a severe

understatement. Racial inequality and the oppression of racial minorities in America dates back

to even before legal slavery, and has continued to exist in American society in various ways,

never truly being eradicated (Feagin, 2004). Racism and racial inequality are closely linked with

one another, and while slavery has not been legal in America for over a hundred years, racist

beliefs are not simply limited to the endorsement of owning and dehumanizing another person

based on the color of their skin.  The extent to which racism has actually declined in America

differs depending on whether the type of racism being discussed is the endorsement of "old-

fashioned" racist beliefs that most people recognize as racism, or the more "modern" racism that

has become more commonplace since the Civil Rights Movement (McConahay, Hardee, &

Batts, 1981).

This modern form of racism differs from old-fashioned racism in that it isn't necessarily

related to an explicit belief that racial minorities are inferior to whites, but is more closely

associated with racial discrimination through systemic oppression and "racial resentment". This

type of racism is less easily identifiable, but can be observed through a sociological lens in the

discrimination against Black individuals when it comes to accessing employment, housing, or

credit opportunities (Pager & Shepherd, 2008). This type of racial discrimination is made more

easily possible by the existence of "racial resentment", which is a modern, anti-Black mindset

that is rooted in the idea that many Black individuals "violate" the traditional American values

such as hard work and self-reliance (Tuch & Hughes, 2011). This racial resentment drives much

of the White opposition to policies that would give support to disadvantaged communities within the United States, specifically the Black community. Evidence suggests that this white opposition hasn't significantly changed since the 1980's (Tuch & Hughes, 2011).

With the election of Barack Obama as president of the United States in 2008, the beliefs that racial issues in America were now gone for good, and that racism and discrimination based on race in the United States was either a thing of the past or on a significant decline, became more prevalent among attitudes concerning race (McWhorter, 2008; Valentino & Brader, 2011). However, there is also evidence suggesting that the election of Obama resulted in the return of old-fashioned racism having significant influence over partisan preferences (Tesler, 2012). Implicit racial prejudices were also found to predict not only a reluctance to vote for Obama, but opposition to his health-care plan (The Affordable Care Act) and opposition to health-care reform in general when the plan was attributed to Obama as opposed to Bill Clinton (Knowles, Lowery, & Schaumberg, 2010). These findings suggest that Barack Obama's presidency was not actually the sign of racism being destroyed forever; it may have instead exposed how racist America still is. The existence of these more subtle forms of "modern racism" and implicit racial prejudices tie into the premise of the current study, which concerns the media and implicit racial biases, specifically through the contextual lens of law enforcement.

In addition to racial tensions existing within America due to both the systemic oppression that negatively impacts the Black community (Doane, 2006) and the White opposition to eliminating this oppression (or even the outright denial of its existence and/or claims of "color-blindness") (Doane, 2006), there is also a tense relationship between the Black community and law enforcement that is likely related to the frequent unjustified shootings of Black males by police officers, among other factors. Some recent examples of well-publicized police shootings

of Black men and/or police brutality that ended in death include the shooting of Michael Brown in 2014, the death of Eric Garner in 2014, and the death of Freddie Gray in 2015. However, the unjustified killing of Black men by police has now been occurring for decades, at an alarming rate, despite the media not covering most of these cases (Chaney & Robertson, 2013). This unequal treatment received by Black individuals (Black men in particular) from police officers has been covered and discussed in an extensive amount of empirical literature. Evidence has suggested that black individuals are given disproportionately harsher treatment from both police officers (Najdowski, Bottoms, & Goff, 2015) and law enforcement officials in general (Glaser, Martin, & Kahn, 2015; Eberhardt et al., 2006). Although both Black and White individuals are equally as likely to be calm and polite when stopped by a police officer, Black individuals are over two and a half times more likely to be stopped by police than the proportion of Black individuals within the U.S. population would suggest (Norris et al., 1992). Research findings also suggest that White's approval of the use of force by police might derive partly from racial prejudice against Black individuals, with negative stereotypes of Black people contributing to White people's support for the use of excessive force by police officers (Barkan & Cohn, 1998). These negative stereotypes of Black individuals and their effects on people's perceptions of members of this community will play a central role in this study, and will be discussed later on in further detail.

The sheer amount of police violence against black individuals disproportionate to individuals of other races has lead to the creation of several groups centered around social awareness and social justice, such as the recent creation of the Black Lives Matter movement (BLM) in 2014. This movement aims to reduce police brutality in general but also aims to bring attention to the specific issue of lack of justice in law enforcement when it comes to interactions

with African-Americans (Cullors, Tometi, & Garza, n.d.). The movement also stresses the point of how, given the historical treatment of Black individuals by law enforcement, the belief that a police officer is more likely to shoot a black person than a white person, regardless of context, is not simply a baseless claim (Cullors, Tometi, & Garza, n.d.).

This claim, along with the empirical research that has been conducted on this topic , forms the backbone of this current study, which aims to examine the likelihood of individuals placed in a simulation of a police officer's field experience to shoot Black individuals over White individuals. Specifically, this greater likelihood to shoot a Black person than a White person will be examined through the context of media and it's effect on individual's perceptions of Black people versus individual's perceptions of White people. Given the findings in past literature, I believe that the media has a significant effect on a police officer's immediate decision of whether or not to shoot a Black individual or a White individual. This is due to the historical portrayal of black individuals by the media as more threatening, violent, and/or dangerous, as well as the existence of the shooter bias.

**Shooter Bias**

The belief that police are more likely to shoot or be more aggressive with Black individuals than white individuals (Brunson, 2007) is not without scientific backing. Past research has shown that police officers, when having to decide whether or not to shoot Black or White criminal suspects in a computer simulation, were more likely to accidentally shoot an unarmed Black suspect than an unarmed White suspect (Plant & Peruche, 2005). Correll, Park, Judd, and Wittenbrink (2002) published a paper "The Police Officer's Dilemma: Using Ethnicity to Disambiguate Potentially Threatening Individuals", which investigated race/ethnicity on an individual's decision to shoot or not shoot a target. In this paper, a phenomenon known as

"shooter bias" is discussed. Shooter Bias is here described as the lower response time for people to shoot Black targets over White targets when the target is armed, and the lower response time for people to not shoot White targets over Black targets when the target is not armed. Additionally, this decision to shoot an armed target is made more accurately if the target is Black than if the target is White, and the decision to not shoot is made more accurately if the target is White (Correll et al., 2002).

The original shooter bias study (Correll et al., 2002) consisted of participants playing a simple videogame. In the game, participants are sitting at a computer with a keyboard where they could choose to hit one of two keys to either "shoot" or "not shoot". They would look at a screen where visual stimuli would appear, and were instructed at the beginning of the task to only shoot a target if the target was armed, and to press the other button if the target wasn't holding a gun (if the target was unarmed, they would be holding a random alternative object, such as a camera, cell phone, or wallet). Images would then pop up on the screen of either an armed or unarmed individual whose race would also vary between Black and White. Targets would then continue to pop up on the screen, one at a time, for several minutes. Participants had a very short time window (less than a second) to decide whether or not to shoot, in order to ensure that implicit reactions were being tested rather than explicit (if participants had time to think about it, their implicit biases may no longer be being tested). Participants were asked to try and pay close attention during the task, and were awarded points based on their accuracy. This was in order to try and ensure that participants weren't simply randomly pressing shoot or don't shoot, and thus not giving an accurate reading of any biases that may be present.

The purpose of the 2002 shooter bias study was to measure both the reaction time and the errors made by the participants for each image to get an idea of how they reacted to the varying

types of visual stimuli in the game. The existence of this phenomenon known as shooter bias suggests that there is an implicit racial bias present in the people who participated in the study, such that participants are faster to notice a weapon in the hand of a Black individual and faster to notice the absence of one in the hand of a White individual. This implicit racial bias also affects the participant's accuracy such that they are also less likely to mistake a gun in a target's hand for a random object when the target is Black, and are less likely to mistake a random object in the target's hand for a gun when the target is White.

As said before, Correll et al. (2002) found that participants were quicker to shoot armed Black targets and not shoot unarmed White targets, and were more accurate in both their decision to shoot armed Black targets and to not shoot White targets. Of additional interest was the fact that an equivalent level of bias was found among White and Black participants. These findings concerning shooter bias were found again in a meta-analysis by Mekawi & Bresin (2015), who also found that this false alarm rate (shooting a target when they are unarmed) was higher in states with less restrictive gun laws. This finding suggests that individuals who have more access/easier access to firearms may demonstrate a higher likelihood to shoot unintentional targets, which could have devastating consequences, particularly if the individual was a police officer. Correll, Park, Judd, Wittenbrink, Sadler, & Keesee (2007) ran another shooter bias study where they compared the performance of police officers on the shooter bias task with that of non-police participants. Their goal was to investigate whether or not police officers, who receive extensive firearm training and are required to carry out tasks such as detecting a gun regularly as part of their job, would demonstrate a resistance of sorts to this previously established shooter bias that existed among non-police. The results of the study showed that, while police officers were generally faster and more accurate with their shooting when compared to the non-police

sample, their reaction times in the shooter game still demonstrated the same bias that the non-police sample did. In other words, the police officer participants were still faster to shoot armed Black "perpetrators" and faster to not shoot White "bystanders" (Correll et al., 2007).

These findings are rather troubling, as they suggest that even with all the extensive training that police officers receive, both in firearm use and threat detection, there is still a shooter bias present among these individuals. Since police officers regularly have to decide whether or not a threat is present and whether or not to shoot their gun at a target (which was the entire idea behind the methodology of the original shooter bias task), it should come as worrying news that these police officers are just as prone to demonstrating racial bias in their response to a potential threat as non-police are. They shoot faster and are more accurate, but the underlying implicit racial bias is still present.

In addition to the presence or absence of a weapon being a determining factor in a participant's decision to shoot, it is also possible that this implicit racial bias demonstrated by participants playing the shooter game is not simply due to the presence of a weapon in a target's hand. Another significant factor could be the level of perceived threat from the target themself (regardless of a weapon being present) by the participant. In their introduction, Correll et al. (2002) touch on how mildly aggressive behavior can be perceived as more threatening when the person in question is Black rather than White. In other words, a White person lightly pushing someone would be the equivalent of a Black person violently shoving someone (Duncan, 1976). Building on this idea, Sagar and Schofield (1980) found that when an actor was depicted as Black, their behavior was interpreted as more mean and threatening by participants than if the actor was depicted as being White. And again, these findings were not exclusive to White participants; the observer's ethnicity did not change the overall tendency to view African-

American's behavior as more threatening. Interestingly, Mekawi, Bresin, & Hunter (2016) found that, when completing the shooter task, White participants' fear of racial minorities (which was called "White fear" by the authors) was associated with racial shooting bias, and that dehumanization and empathy moderated this effect. In other words, individuals high in White fear showed a significantly higher shooter bias, and these effects were stronger when participants dehumanized Black individuals, but weaker when participants had higher empathy for Black individuals.

Correll, Wittenbrink, Park, Judd, & Goyle (2011) followed up on and investigated this idea of perceived threat and its effect on shooter bias by investigating danger cues other than race, and how these non-race related cues could prompt a participant to shoot, thus increasing their shooter bias. They had the targets in the shooter game be in front of either safe or threatening backgrounds, with their logic being that if the threatening background functioned as a sufficient danger cue, it should increase the likelihood of participants to shoot armed targets regardless of the targets race, which would be demonstrated by an increased tendency by the participant to shoot White targets (decreasing or eliminating observable racial bias). They also had a second hypothesis that the threatening backgrounds may actually cause participants to see White targets as even less dangerous, resulting in them shooting White targets *less* instead of more. They found that the background context of the images in the game did indeed have an effect on the participant's likelihood to shoot the targets;  a racial bias was observable for the targets embedded in safe backgrounds, but when the targets were placed over dangerous/threatening backgrounds (background images featuring dilapidated buildings and inner-city streets that were generally evocative of crime and/or poverty), this observable racial

bias disappeared. This was due to the participants increased tendency to shoot White targets

during the game depending on the background of the image (Correll et al, 2011).

This role of threat perception while playing the shooter game has also been investigated

in the context of stereotypes concerning Black and White individuals. Correll, Urland, & Ito

(2006) measured long-standing stereotypes in their participants by asking them (week before

they played the shooter game) questions concerning their personal views on Black and White

individuals and how threatening they perceived members of each group to be. Measures of the

cultural stereotypes concerning threat and aggression levels in each of those two racial categories

were also taken. Participants then completed the shooter task weeks later, Event-related brain

potentials (ERP's) were observed while participants completed the game, in order to better

observe the participant's differentiation between Black and White targets, as well as the presence

of an object or a weapon. The authors found that the presence of cultural stereotypes concerning

both Black and White people predicted racial differentiation and racial bias while playing the

game. Specifically, participants who had stronger personal and cultural stereotypes were

significantly more likely to respond to Black targets as more threatening (with a more consistent

threat-related response, in this case the decision to shoot), with the presence of a gun or random

object not moderating this effect (Correll, Urland, & Ito, 2006). These findings suggest that an

individual's regular beliefs concerning racial groups can influence both the level of threat

associated with them and their decision to shoot when presented with a potentially threatening

member of a group. If they fail to inhibit the dominant "shoot" response when presented with an

armed target that is also a member of a group deemed threatening by the individual, they will

likely make the correct decision to shoot the target. However, if the target is not actually armed

but is still a member of the group that is deemed threatening (in this case, an unarmed Black

target), the individual must overcome this dominant tendency to shoot in order to make an accurate decision. This research will be further discussed in the section on the neural mechanisms of implicit racial bias.

The racial stereotypicality of the targets in the shooter game can also influence participant's reactions during the shooter game and thus influence their shooter bias. Kahn & Davies (2010) investigated the effects of phenotypic racial stereotypicality on shooter bias and found that high stereotypical Black targets (targets with more Afrocentric features such as darker skin or broader noses) elicited a stronger implicit racial bias in participants completing a shooter task when compared to targets with lower racial stereotypicality. There was a lower shooting criterion for the high stereotypical  targets, resulting in a higher likelihood to shoot these targets. These results suggest that the more stereotypical to one's race a target in the shooter game appears, the more likely it is that the stereotypes associated with their race will be accessible to the participant. Depending on the negativity or positivity of these stereotypes, this could increase racial bias while playing the game, influencing shooter bias (Kahn & Davies, 2010). Additionally, since Black individuals were used as participants in this study, these results provided the first empirical evidence that Black individuals are susceptible to stereotypicality biases when evaluating in-group members (Kahn & Davies, 2010).

There is also evidence that the spontaneous behavior associated with shooter bias can be changed and/or moderated depending on certain variables that aren't related to the actual in-game stimuli. Specifically, there is evidence suggesting that the effect that cognitive depletion can have on the spontaneous discriminatory behavior involved with the shooter bias can be moderated by an individual's implicit motivation to control prejudice.  Park and Glaser (2008) manipulated participant's cognitive resource depletion by having them complete either difficult

anagrams or easy anagrams, and then had them complete a shooter task. Implicit motivation to

control prejudice and an implicit race-weapons stereotype were measured last. Their data

suggested that the effect that cognitive depletion had on the shooter bias was moderated by an

individual's implicit motivation to control prejudice, with depletion resulting in a higher shooter

bias only for participants who scored low on implicit motivation to control prejudice. Park and

Glaser (2011) also found that the effects of the shooter bias could be reduced through both

implicit motivation to control prejudice and exposure to counterstereotypic instances. Evidence

also suggests that being a resident in a state with more permissive gun laws (laws that allow for

less regulated usage of firearms) has an effect on both the false alarm rate and the shooting

threshold while completing the shooter task (Mekawi & Hunter, 2015). When discussing this

finding, the authors mention past research concerning both how more states with more

permissive gun control have been linked to a higher level of political conservatism (Branscombe,

Weir, & Crosby, 1991) and how political conservatism is related to the presence of racial

prejudice against Black individuals (Sidanius, Pratto, & Bobo, 1996). Thus, it is possible that

these findings concerning the relationship between lower gun control and higher rates of shooter

bias may be explained by political conservatism (Mekawi & Hunter, 2015). Lastly, in addition to

these findings it should also be noted that the Department of Justice has begun to make training

and/or exercises available for police officers that aim to reduce the association of people of color

with fear, and to reduce the association of violent response with impulse (Beatty, 2014).

**Implicit Bias**

The phenomenon of the shooter bias is potentially driven by implicit (racial) biases, as

well as racial prejudice and/or awareness of cultural stereotypes concerning Black and White

individuals (Correll et al., 2002; Correll et al., 2006). Implicit biases are biases that we may have

that we are either not aware of at all or that we are not aware of when we are acting upon them.

A common method of examining implicit biases in individuals for psychological research is the

Implicit Association Test (IAT). The IAT examines these implicit attitudes that people have

towards certain concepts by looking at how individuals associate two concepts with a particular

attribute. The original IAT study was conducted  by Greenwald et al (1998), and consisted of

participants having to associate certain concepts (for example. White versus Black) and an

attribute (ex. pleasant versus unpleasant words) by clicking a response key indicating that those

categories are associated with each other. They found that for highly associated concepts that

shared a response key, performance on the test increased in speed and for less associated

categories, response speed decreased. This suggests that our implicit biases are based off of

mental associations that we have made between certain concepts and attributes, and that we will

react quicker to certain stimuli if they are associated with a specific attribute that we already

mentally associate it with. IATs are still frequently used in psychological research to examine

implicit biases and associations, such as the common association between African-Americans

and danger and/or threat. Additionally,  despite these implicit biases existing, there is also

evidence that they can be reversed. In their 2005 study, Plant & Peruche found that, in addition

to their findings concerning police being more likely to shoot black individuals than white

individuals, this bias could be eliminated after exposure to an extensive training program that

aimed to get rid of the association between the presence of a weapon and the suspect.

Nosek, Smyth, Hansen, Devos, Lindner, Ranganath, Smith, Olson, Chugh, Greenwald, &

Banaji (2007) presented a review of data from IAT's and self-report measures between July 2000

and May 2006 for 17 different topics, complete with correlations of implicit and explicit

measures for multiple demographics. For race, it was found that Black participants showed an

overall weaker implicit preference than other groups, particularly less than White participants.

(Nosek et al, 2007). Black individuals showed no preference between Black and White on

average, while Whites in particular showed a strong preference for White (Nosek et al., 2007).

Additionally, conservatives (when compared to liberals) consistently demonstrated a stronger

implicit and explicit social preference and stereotypes for groups that were higher-status (Nosek

et al., 2007). These findings helped provide explicit measures questions for participants in the

current study, specifically questions aiming to get an idea of whether or not political affiliation

correlated with racial preferences and whether or not a participant's race correlated with racial

preferences.

**Neural Mechanisms of Implicit Racial Bias**

Past research suggests that these implicit racial biases have a neurological basis. The past

literature on the topic has found that the amygdala seems to be the main brain structure that is

most consistently involved with prejudice, discrimination, and racial biases. Phelps et al. (2000)

conducted a study in which the authors utilized an fMRI to examine the brains of individuals

who were making unconscious evaluations of either Black or White social groups. The fMRI

examinations in this case were focusing specifically on the amygdala. The researchers found that

the strength of activation in the amygdala was correlated with two implicit measures of race

evaluation, including an IAT, but did not correlate with explicit racial attitudes. They also found

that these correlations were not observed when participants were presented with familiar and

positively regarded Black or White faces. Together, these research findings suggest that the

amygdala's response to the race of an individual reflects "cultural evaluations of social groups

modified by individual experience" (Phelps et al., 2000). In other words, any racial biases or

prejudices can potentially be observed in an individual's amygdala response to someone's race,

as their personal beliefs concerning that group (modified by their individual life experiences with members of that same group) would affect the amygdala's response, as opposed to explicitly stated beliefs about the group.

There is also evidence to suggest that the amygdala is more involved with the process of threat detection in the context of racial cues, as opposed to racial bias itself. In a review of past research, Chekroud et al. (2014) examined social neuroscience studies related to the amygdala and race-related prejudice. They came to the conclusion that, rather than the popular belief that activity in the amygdala suggests the presence of a racial bias, activity in the amygdala actually suggests the detection of a threat. This type of amygdala activity is explained by negative culturally-learned associations between danger and Black individuals. In other words, the amygdala may not necessarily be involved with race, but instead with a fear reaction that is initiated when danger or threat is detected, which can be triggered by members of particular races that have come to be implicitly associated with danger due to cultural and societal beliefs, processes, and structures.

Ronquillo et al. (2007) conducted a study that investigated the effects of skin tone on race-related amygdala activity. The authors discuss past research, specifically behavioral studies, that have shown people to have a skin tone bias. This skin tone bias is oriented to preferring light over dark skin. In their study, the authors used fMRI to examine skin tone along with any potentially moderating effects that it may have on the different amygdala activation levels when exposed to either a White or Black face. Eleven White participants were shown pictures of unfamiliar Black and White faces, all with varying skin tones. It was found that the amygdala displayed more activity for Black faces than White faces. Additionally, the amygdala showed more activity for dark skinned faces than light skinned faces. A significant interaction between

race and skin tone was observed, such that amygdala activity was equal for light skinned or dark skinned Black faces, but was greater for dark skinned white faces than light skinned White faces. The authors discuss a parallel between their findings and the findings of Eberhardt et al., (2006), who found that Black and White individuals with more afrocentric features were given harsher prison sentences than those with fewer afrocentric features.

Together, these findings all suggest that the amygdala is involved with implicit racial biases, but perhaps not in ways directly related to race so much as fear/threat. It also seems possible, based on these findings, that the fear reaction to Black individuals may be stronger for individuals who appear more "stereotypically Black", in both skin tone and facial features (afrocentric features), and general appearance (dress, etc.). This could be brought on, as the research suggests, by cultural and societal beliefs and structures that reinforce this idea into people's minds as they develop. This fear reaction, combined with a racial bias against Black individuals, is likely to be the main mechanism behind the shooter bias. Correll, Urland, & Ito (2006) investigated the cognitive roots of shooter bias by looking at event-related brain potentials (which are fluctuations in an individual's electrical brain activity) while the individual was completing the shooter bias task. Their logic was that by measuring these brain potentials, they would be able to see when exactly an individual detected a threat and when they had a desire to control some sort of behavioral response. They found that participants showed more threat-related brain activity when they saw a Black target during the game than when they saw a White target (regardless of whether or not the target was holding a gun) (Correll, Urland, & Ito, 2006). There was also more control response activity for the White targets. Their findings were consistent with the participant's shooter bias data as well; the more biased brain activity observed, the more exacerbated the shooter bias became (Correll, Urland, & Ito, 2006).

**Media Effects**

The current study's interest lies in investigating and furthering the literature on shooter bias by examining the media, and how the news can influence individual's implicit racial biases (consequently influencing shooter bias). This study's contribution to the literature adds an element of media exposure (specifically the exposure of an online news article) directly before participant's play the shooter game, with the goal being to investigate whether or not this exposure to the media influences participant's shooter bias. However, instead of being exposed to any media article, participants read an online news articles that concerned a crime that was being committed by either a Black or White individual. The study aimed to see whether or not the media's depiction of crime in these articles possibly affected how participants reacted to the visual (potentially threatening) stimuli in the shooter game.

Past research suggests that the media is likely to depict African-Americans in a more negative, devalued, and/or threatening light than white individuals are depicted. Weiss and Chermak (2012) examined the ways that the media presented cases of homicide, specifically the differences between the presentation of Black victims of homicide and White victims of homicide. They found that White victims of homicide received more attention in the news than Black victims, implying a devaluation of African-Americans in this country. Dixon & Linz (2000) examined the portrayal of lawbreakers in the media, specifically how the news portrayed African-American and Latino lawbreakers and how that compared to the portrayal of White lawbreakers. They found that African-Americans and Latinos were significantly overrepresented as lawbreakers on the news, while White individuals were more likely to be portrayed or described as "defenders". Another example of the media's pattern of portraying African-Americans in a negative light is the news coverage of Hurricane Katrina and the aftermath of the

storm in New Orleans, Louisiana. There was an enormously disproportionate association between Black individuals and crime/violence in the media coverage of Hurricane Katrina. Black individuals were consistently described as "looting" or other words associated with crime and violence, while White individuals doing the exact same thing were described as victims trying to get food, shelter, etc. (Sommers et al., 2006).

In two studies on modern racism and the portrayal of Black individuals in television news, findings suggest that local TV news programs actually (perhaps unintentionally) reinforce modern racism by responding to the viewing tastes of Black audiences, while seeking to overcome old-fashioned racism (Entman 1990; Entman 1992). Here, modern racism is defined as a combination of an anti-Black affect and a resentment towards the still continuing claims of Black individuals on White resources and sympathies. Old-fashioned racism is defined here as the belief that Black people are simply inferior and should be segregated. This research suggests that the media (specifically the news), while trying to eliminate or invalidate these old-fashioned, blatantly racist beliefs, they are simultaneously perpetuating a lowering of sympathy and increased resentment of Black individuals by White individuals. The author suggests that the people controlling the output of news may not even be aware of this, which in some ways may make the issue even more problematic. Lastly, in a study on media consumption and public attitudes towards crime and justice, Dowler (2003) examined the effect of media on fear of crime, punitive attitudes, and perceived effectiveness of police. The results of the study suggest that a relationship exists between media consumption and fear of crime. Media consumption, fear of crime, race, perceived police effectiveness, and punitive attitudes were all related to one another as well (Dowler, 2003). These results further support the idea that there is a relationship between exposure to the media and perceptions of race and how it relates to danger/threat.

**The Current Study**

The current study is concerned with investigating these regular negative portrayals of Black individuals in the media compared to White individuals, specifically how these differing portrayals in the media affect people's shooter bias. The form of media that was used in this study was online media articles, under the assumption that most people in  population pool for the study (college students) use either online media articles or an online app for  a media outlet to access their news information. In this study, participants read an article that they believed to be a real media article from CNN (specifically a news report about a crime committed in Washington, D.C.) in which the criminal is described as either White or Black. They then completed a shooter game and answered explicit measures questions concerning attitudes towards racial minorities. The goal of the study is to see if the media article has an effect on participant's response times and accuracy when playing the shooter game, as well as investigating the relationship between explicit attitudes towards racial minorities and reaction times in the game (implicit responses). .

There are several hypotheses for this study (eight in total). The first hypothesis is that the article where the crime is perpetrated by a Black individual will exacerbate the shooter bias a significant amount more than the article with the White criminal, such that participants will be significantly faster than those who read the article with the White criminal to react to armed Black targets and unarmed White targets. The second hypothesis is that the article where the crime is committed by a Black criminal will exacerbate the shooter bias a significant amount more than the article with the White criminal, such that participants will be significantly more accurate in their decisions, specifically for armed Black targets and unarmed White targets. This increased accuracy will be significantly higher than that of the participants who read the article with the White criminal.   The third hypothesis is that the article with the Black criminal will

exacerbate the shooter bias a significant amount more than the article with the White criminal, such that participants who read the article with the Black criminal will be significantly less accurate in their decision concerning unarmed Black targets and armed White targets. The fourth hypothesis is that the article with the Black criminal will exacerbate the shooter bias such that participants who read the article with the Black criminal will be significantly more likely to shoot armed Black targets when compared to participants who read the article with the White criminal. The fifth hypothesis is that the media article with the Black criminal will exacerbate the shooter bias such that participants who read the article with the Black criminal will be significantly more likely to not shoot unarmed White targets than participants who read the article with the White criminal. The sixth hypothesis is that participants who read the article with the White criminal will still demonstrate a shooter bias such that they are faster and more accurate when shooting armed Black targets and not shooting unarmed White targets, but this shooter bias will not be significantly exacerbated by the media article compared to participants who read the article with the Black criminal.

The seventh hypothesis for this study concerns the explicit measures and attitudes towards racial minorities; conservatism, negative attitudes towards Bard's scholarship programs, low awareness of income inequality, low awareness of Black Lives Matter, low levels of sympathy for Black Lives Matter, high levels of sympathy for All Lives Matter, high external motivation to respond without prejudice, overall negative attitudes towards Black individuals, and high levels of fear while reading the media article will all positively correlate with reaction times. The eighth and final hypothesis is that positive explicit attitudes towards racial minorities (positive attitudes towards Bard's scholarship programs, high awareness of income inequality, high awareness and sympathy for Black Lives Matter, low level of sympathy for All Lives

Matter, high internal motivation to respond without prejudice, overall positive attitudes towards

Black individuals) and low levels of fear while reading the media article will all negatively

correlate with reaction times.

**Methods**

**Participants**

Participants consisted of 80 Bard College undergraduate students (14 freshman, 12

sophomores, 20 juniors, 29 seniors, and five unspecified). Their age ranged from 18 to 25, with

the average reported age being 21 years old. 39 participants identified as male, 40 identified as

female, and one identified as "other". 36 participants were White, 29 were Black, nine were

Hispanic or Latino, three were Asian, and three did not specify their race. 21 participants were

majoring within the Division of Arts, 16 within the Division of Science, Mathematics, and

Computing, 10 within the Division of Languages and Literature, 31 within the Division of Social

Studies, and two did not specify their academic division.

Participants were recruited using three different methods. Recruitment flyers were placed

around campus, indicating a compensation (free baked goods and a chance to win a $90 Amazon

gift card) available for participating in a psychological study, with contact information included

(for an example of this recruitment flyer, see Appendix A). There was also a recruitment table

set up at specific times for a three-week period in Bard's Campus Center so that participants

who were interested in the study could come up to the table and sign up in person . Upon their

contacting me with interest in participating in the study, whether by email or in person at the

table, an e-mail was sent to participants with more details and logistics about the study (for an

example of this confirmation e-mail, see Appendix B). Lastly, individuals who were interested in

participating but who not sure about their scheduling and didn't know when they would be free were given the option to complete the study at that current time. The majority of the data ended up being collected in this fashion, as many participants signed up for particular dates/times and didn't show up, while many others showed interest but didn't know when they would be able to participate in the future.  Participants were compensated with baked goods at the time of their participation, as well as by being entered into a raffle to win one of two $90 Amazon gift cards. IRB approval was applied for and received before the recruitment process began (for the IRB application, approval letter, and certification of completion for the "Protecting Human Research Participants" training course, see appendices C, D, and E)

**Materials**

**Media Articles:** The media articles used in this study are not real media articles. They were written for the purpose of this study and were made to appear as if they were written and published by CNN. They are both identical to one another, with the exception of the race of the criminal in the article; one is described as White, while the other is described as Black. The article is said to be an excerpt from a longer news piece on rising crime within college campuses in Washington, D.C. Both articles describe a family of three ("the Jackson family") leaving the metro station for the Catholic University of America, located in Northeast, Washington D.C. A criminal is then described as coming up to them and mugging them before fleeing towards the college dorms. It is made clear that the police have not found the criminal yet, and that the family is badly shaken and, in the husband's case, badly injured and in the hospital. For examples of both media articles in their entirety, see Appendices F and G.

**Shooter Game:** The shooter bias task used in this study was identical to the original "Police Officer's Dilemma" shooter bias game designed by Correll et al., and was downloaded

from millisecond.com. The in-game text informed participants of the rules of the game, instructing them to shoot any armed individual who pops up on the screen by pressing either the "L" key or the "A" key (the game randomly switched what these two keys did for each playthrough) and to not shoot any unarmed individual who pops up on the screen by pressing either the "A" key or the "L" key. It  also informed them of the very small time frame in which they have to decide whether or not to shoot (less than a second). The game also informed them that they would receive points based on their performance on the task. The game consisted of images of human "targets" briefly popping up over a random picture background. These "target" images in the game were of either White or Black men holding either a gun or an inanimate object (such as a wallet or a cell phone). The targets in the game would be either standing or crouching, and would be either holding/brandishing the gun/random object or holding it down by their side. The game consists of a short practice round, followed by 80 trials, with 20 trials for each of the four types of target (unarmed White, armed White, unarmed Black, armed Black). If the participant was too slow to react to an image, the game would inform them that they were too slow and that they lost points. Participants would also receive feedback from the game after each trial, informing them whether or not they had made an accurate decision and what type of decision it was or should have been (for the full in-game text, see Appendix H). The game informed participants when the last trial had been completed and the game was over.

**Explicit Measures Questions:** The explicit measures questions aimed to get a measure of explicit racial bias by measuring attitudes towards racial minorities, and were given to the participants after they had finished the shooter game (for the full set of explicit measures questions and possible answers, including the manipulation check, see Appendix I ). The first question asked participants about their political affiliation, as past research suggests that there is

a relationship between political party (liberal versus conservative) and stronger negative

associational biases to darker images of a prominent political figure (Nevid & McClelland,

2010), a relationship between political party (liberal versus conservative) and level of preference

for higher-status groups (Nosek et al., 2007), and a relationship between political conservatism

and prejudice against Black individuals (Sidanius, Pratto. & Bobo, 1996; Reyna, Henry,

Korkfmacher, & Tucker, 2006). The second question aimed to get a measure of the participant's

attitude towards the scholarship programs at Bard College, with the assumption being that a

more negative view towards these programs may reflect a more negative view towards racial

minorities. The third question asks the participant what their primary source of news information

is. The fourth question aimed to get a measure of the participant's attitude toward/awareness of

income inequality in America, with the assumption being that a lower awareness of these issues

may reflect a more negative attitude towards racial minorities. Questions 5-10 aim to get a

measure of the participant's level of empathy towards the Black Lives Matter and All Lives

Matter movements., with the assumption being that a higher level of empathy towards the Black

Lives Matter movement would indicate a higher level of empathy for black individuals, while a

higher level of empathy towards the All Lives Matter movement would indicate a lower level of

empathy for black individuals. Questions 11-20 consist of questions written by Plant & Devine

(1998) to measure internal and external motivation to respond without prejudice. The idea here is

that higher external motivation to respond without prejudice would indicate a more negative

view towards Black individuals, while a higher internal motivation to respond without prejudice

would indicate a more positive view towards black individuals. Questions 21-23 consist of

questions written by Katz & Hass (1988). These questions (taken from The "Pro-Black Scale and

Anti-Black Scale) aim to measure one's general attitudes towards black individuals by

examining the participant's beliefs about opportunities that Black individuals have in society

compared to White individuals. Lastly, a question intended to get an explicit measure of fear

from the participant (concerning which emotions they felt while reading the article, and how

high they would rate each one) is asked in the explicit measures questions in order to see if fear

could potentially be a mechanism involved with racial biases while playing the game.

**Procedure**

All data was collected on a laptop computer in the Bard College Campus Center.  Upon

their arrival, participants were given an informed consent form, and the importance and purpose

of informed consent was carefully explained to them orally (for the full script that was recited to

the participants for the duration of the study, see Appendix J). Participants were given an

informed consent form upon their arrival (for the full consent form, see Appendix K).  In the

consent form, participants are told that the purpose of the study is to investigate the effects of

reading emotional material on cognitive performance. This was to try and ensure that participants

will be unaware that they are being tested for implicit racial bias while reading the media article

and playing the shooter game, which would affect the results if they thought otherwise (since

their implicit bias would no longer truly be being tested). There were two media articles used in

the study (one for each condition). Though participants are informed that these articles were

taken from an online source (specifically CNN), in reality only the article for the control group

will be a real media article from CNN. Both articles were written by me, and are made to look

like they are real CNN media articles. They depict "emotional material" of a either a Black or

White individual mugging a family outside of a D.C. metro stop (the articles were said to be an

excerpt from a longer written piece on rising crime on D.C. college campuses).

If the participant chose to participate and signed the consent form, they were then given

one of the two different news articles, The two conditions (which participants were sorted into

randomly upon their arrival) were the Black crime condition and the White crime condition.

Participants in the Black crime condition were given the article with the Black criminal to read,

while participants in the White crime condition read the article with the White criminal. After

reading the media article, participants completed the shooter bias task (the original "Police

Officer's Dilemma" shooter bias game designed by Correll et al). Participants were informed that

their reaction times in the game will be recorded in order to see if reading the emotional material

had an affect on their cognitive performance. Their scores in the game were said to be a

representation of their overall focus during the task. During the study, participants were

encouraged to try and focus as much as possible so as to get data that most accurately reflects

their cognitive performance and how it was affected by the emotionally stimulating material in

the media article. After completing the shooter bias task, participants completed the set of

twenty-five explicit measures questions on the computer in order to have explicit measures of

racial bias to see if there are any explicit measures that correlate  with their implicit measures.

After completing these questions on the computer, participants were then given the manipulation

check questions. The questions asked participants 1) what they felt the purpose of the study was,

2) if they felt like they were deceived in any way, 3) if they felt they were deceived, how so?, 4)

what the race of the criminal was, and 5) what happened to the criminal at the end. The

debriefing form explained the true purpose of the study, as well as the deception and the reasons

behind using it. The shooter bias was fully explained in the debriefing, as was implicit bias and

how it can exist in a racial context. The debriefing form encouraged participants to ask any

questions that they may have had, and also reassured them that they need not feel weak or stupid

for believing the deception, as deception is used frequently in research and has been for years. It also reassured them that the implicit racial bias that was investigated in the study is not unique to them, and that these implicit biases exist everywhere and are not necessarily indicative of any explicit biases or any prejudices that people may hold. In other words, participants were reassured (without being overbearing) that they didn't have to leave the study distressed because they're racist (for the full debriefing form, see Appendix L). Lastly, a contact form with contact information for me, my project advisor, and Bard's Health and Counseling Services was distributed at the very end of the study as the participants left, in case any participants should feel the need to get in touch with any of those contacts. For this contact information sheet, see Appendix M

**Results**

**Design**

This study utilized a 2 x 2 x 2 design (race x item type x condition). Results of the shooter game were analyzed using a mixed-model analysis of variance for repeated measures (ANOVA). This analysis was run five separate times, once for each of the following variables: reaction time (in milliseconds), accuracy, inaccuracy, likelihood to shoot, and likelihood to not shoot. For each of these five mixed-model ANOVAs, target race and item were treated as within-subject variables. Each within-subject variable had two levels, with target race being divided into White and Black and item being divided into gun and object. Condition (reading the media article with the White criminal and reading the media article with the Black criminal) was treated as a between-subjects variable, differing on the race of the criminal in the news article that participants read before playing the shooter game. The goal of these analyses was to see if

participant's reaction time, accuracy, inaccuracy, likelihood to shoot, and likelihood to not shoot

significantly differed across any of the four within-subjects variables (White with object, White

with gun, Black with object, Black with gun) and/or either of the between-subjects variables

(reading the article with the White criminal and reading the article with the Black criminal).

Significance level for all five ANOVAs was set at $p < .05$. Trials in which participants reacted

too slowly (outside of the response window of 850 milliseconds) were removed from all

analyses. For the explicit measures of attitudes towards racial minorities, correlations were run

between the explicit measures and reaction times across the four levels of the dependent variable

(White with object, White with gun, Black with object, Black with gun), which in this case was

reaction time. Six participant's data was removed from these analyses, the first five being due to

the questions being formatted incorrectly (these had been the first five individuals to participate)

and the sixth because of the participant having to leave before having completed the questions.

Additionally, the IMS-EMS (internal and external motivation to control prejudice) scale

questions and the Pro-Black questions were left out of the final correlational analyses. This will

be explained in further detail in the limitations section. In describing the implicit results, a hit

will be defined as deciding to shoot an armed target, a miss will be defined as deciding to not

shoot an armed target, a false alarm will be defined as deciding to shoot an unarmed target, and a

correct rejection will be defined as deciding to not shoot an unarmed target.

**Shooter Game (Implicit) Analyses**

**Reaction Time**

Reaction times were analyzed by first log transforming the raw reaction time scores

across trials for each participant so that they could be more easily interpreted. These new

reaction time scores were then averaged for each of the 80 participants across each of the four

within-subject factors (White with gun, Black with object, Black with object, Black with gun) so that each participant had four average scores for reaction time.

**Within Group Differences:** The analysis of the within-group variables for reaction times revealed no significant main effects for race ($F(1,78) = .541$, $p = .46$) or item ($F(1,78) = .045$, $p = .83$). This indicates that participants were not significantly faster or slower to react to targets if they were White and held an object ($M = 2.75$, $SD = .04$), were White and held a gun ($M = 2.75$, $SD = .05$), were Black and held an object ($M = 2.74$, $SD = .05$), or were Black and held a gun ($M = 2.75$, $SD = .04$). There was also no significant interaction between race and condition ($F(1,78) = .74$, $p = .39$), no significant interaction between item and condition ($F(1,78) = .26$, $p = .61$), and no significant interaction between race, item, and condition ($F(1,78) = .25$, $p = .62$). Participants were not significantly faster or slower to react to targets, regardless of all but one combination of race, item, or condition factors; there was a significant race x item interaction ($F(1,78) = 6.47$, $p < .05$), such that participants were significantly faster to react to targets if the target was both Black and held an object ($M = 2.74$, $SD = .05$), than if the target was both Black and held a gun ($M = 2.75$, $SD = .04$), was both White and held an object ($M = 2.75$, $SD = .04$), or was both White and held a gun ($M = 2.75$, $SD = .05$). For a visual representation of this finding, see Figure 1.
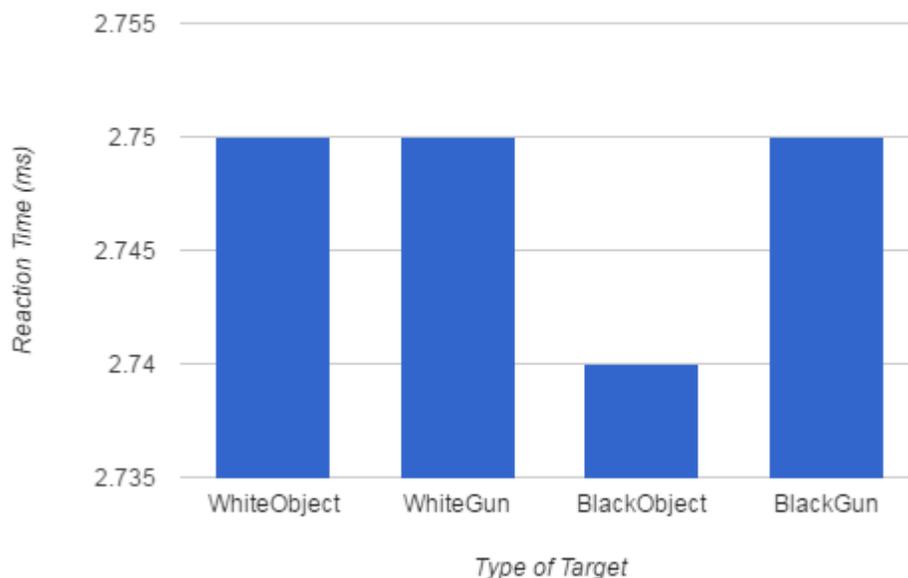
*Figure 1: Reaction time across the four different target categories, with a significant race x item interaction (F(1,78) = 6.47, p < .05)*

**Between Group Differences:** The analysis of the between-subjects variable revealed no significant main effect of condition ($F(1,78) = .233$, $p = .63$) on reaction time. Participants were not significantly faster or slower to react to targets regardless if they read the article with the White criminal or the Black criminal.

**Accuracy**

Accuracy was calculated by adding up the number of correct decisions (hits and correct rejections) for each participant, for each of the four within-subjects factors so that each participant had four accuracy scores.

**Within Group Differences:** The analysis of the within-group variables for accuracy revealed no significant main effects for race ($F(1,78) = 2.90$, $p = .09$) or item ($F(1,78) = 2.28$, $p$

= .14). This means that participants were not significantly more or less accurate in their decisions

while playing the game if the targets were White and held an object ($M = 17.65$, $SD = 2.19$),

were White and held a gun ($M = 17.46$, $SD = 2.53$), were Black and held an object ($M = 18.06$,

$SD = 2.20$), or were Black and held a gun ($M = 17.60$, $SD = 2.40$). There was also no significant

interaction between race and condition ($F(1,78) = .05$, $p = .82$), no significant interaction

between item and condition ($F(1,78) = 5.12$, $p = .26$), no significant interaction between race and

item ($F(1,78) = .56$, $p = .45$) and no significant interaction between race, item, and condition

($F(1,78) = .08$, $p = .79$). Participants were not significantly more or less accurate in their

decisions while playing the game regardless of any combination of target race, item, and race of

criminal in the media article.

**Between Group Differences:** The analysis of the between-group differences revealed no

significant main effect of condition ($F(1,78) = .24$, $p = .63$) on accuracy. Participants were not

significantly more or less accurate in their decisions while playing the game regardless of the

race of the criminal in the media article.

**Inaccuracy**

Inaccuracy was calculated by adding up the number of incorrect decisions (misses and

false alarms) for each participant, for each of the four within-subjects factors so that each

participant had four inaccuracy scores.

**Within Group Differences:** The analysis of the within-group variables for inaccuracy

revealed no significant main effects for race ($F(1,78) = .42$, $p = .52$) or item ($F(1,78) = 1.50$, $p =$

$.22$). This indicates that participants were not significantly more or less inaccurate while they

were playing the game if the targets were White and held an object ($M = 2.00$, $SD = 2.22$), were

White and held a gun ($M = 1.83$, $SD = 2.03$), were Black and held an object ($M = 1.95$, $SD =$

2.31), or were Black and held a gun (*M* = 1.70, *SD* =1.78). There was also no significant

interaction between race and item (*F*(1,78) = .05, *p* = .82), no significant interaction between

race and condition (*F*(1,78) = 1.46, *p* = .23), and no significant interaction between race, item,

and condition (*F*(1,78) = .14, *p* = .71). Participants were not significantly more or less inaccurate

in their decisions regardless of all but one combination of race, item, and condition factors; there

was a significant item x condition interaction (*F*(1,78) = 8.75, *p* < .05), such that participants

were significantly more inaccurate in their decisions while playing the game if the target held an

object and the participant had read a media article with a White criminal (*M* = 4.55, *SD* =  3.42),

than if the target held a gun and the participant had read a media article with a White criminal (*M*

= 3.10, *SD* = 2.82), if the target held an object and the participant had read a media article with a

Black criminal (*M* = 3.35, *SD* = 3.42), or if the target held a gun and the participant had read a

media article with a Black criminal (*M* = 3.95, *SD* = 3.66). For a visual representation of this

interaction, see Figure 2.
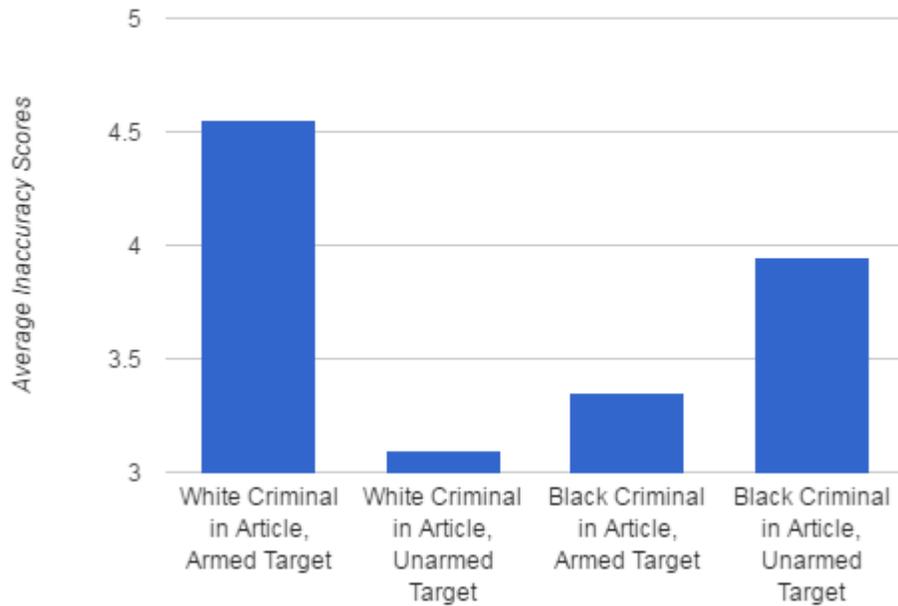
*Figure 2: Average inaccuracy scores across 4 condition (race of criminal in media article) x item (armed or unarmed target), with a significant item x condition interaction (F(1,78) = 8.75, p < .05). Participants were significantly more inaccurate in their decisions while playing the game if the target held an object and the participant had read a media article with a White criminal*

**Between Group Differences:** The analysis of the between-group differences revealed no significant main effect of condition ($F(1,78) = .05$, $p = .82$) on inaccuracy. Participants were not significantly more or less inaccurate in their decisions while playing the game regardless of the race of the criminal in the media article.

**Likelihood to Shoot**

Likelihood to shoot was calculated by adding up the number of times a decision was made to shoot (hits and false alarms) for each participant, for each of the four within-subjects factors so that each participant had four scores for shooting.

**Within Group Differences:** The analysis of the within-group variables for shooting revealed no significant main effects for race ($F(1,78) = 1.21$, $p = .28$). This indicates that participants were not significantly more or less likely to shoot a target if the target was White ($M = 19.45$, $SD = 2.99$) or Black ($M = 19.89$, $SD = 2.21$). There was a main effect of item on likelihood to shoot ($F(1,78) = 1552.211$, $p < .05$), such that participants were significantly more likely to shoot a target if the target was holding a gun ($M = 35.36$, $SD = 3.91$) than if the target was holding an object ($M = 4.36$, $SD = 4.17$). For a visual representation of this main effect, see Figure 3. There was no significant interaction between race and item ($F(1,78) = 1.35$, $p = .25$), no significant interaction between race and condition ($F(1,78) = .52$, $p = .47$), no significant interaction between item and condition ($F(1,78) = 2.03$, $p = .65$), and no significant interaction between race, item, and condition ($F(1,78) = 2.03$, $p = .16$). Participants were not significantly more or less likely to shoot a target while playing the game regardless of any combination of target race, item, and race of criminal in the media article. The only variable that influenced this decision was the item held by the target.

*Figure 3: Average number of "shoot" decisions for both armed and unarmed targets, with a main effect of item on likelihood to shoot (F(1,78) = 1552.211, p < .05), such that participants were significantly more likely to shoot a target if the target was holding a gun than if the target was holding an object*

**Between Group Differences:** The analysis of the between-group differences revealed no significant main effect of condition ($F(1,78) = 3.86$, $p = .53$) on likelihood to shoot. Participants were not significantly more or less likely to shoot targets in the game regardless of the race of the criminal in the media article.

**Likelihood to Not Shoot**

Likelihood to not shoot was calculated by adding up the number of times a decision was made to not shoot (misses and correct rejections) for each participant, for each of the four within-subjects factors so that each participant had four scores for not shooting.

**Within Group Differences:** The analysis of the within-group variables for not shooting revealed no significant main effects for race ($F(1,78) = 0.01$, $p = .91$). This indicates that participants were not significantly more or less likely to not shoot a target if the target was White ($M = 19.33$ , $SD = 2.43$) or Black ($M = 19.29$, $SD = 2.29$). There was a main effect of item on likelihood to not shoot ($F(1,78) = 1628.856$, $p < .05$), such that participants were significantly more likely to not shoot a target if the target was holding an object ($M = 35.08$, $SD = 4.51$) than if the target was holding a gun ($M = 3.72$, $SD = 3.29$). For a visual representation of this main effect, see Figure 4. There was no significant interaction between race and item ($F(1,78) = 1.39$, $p = .24$), no significant interaction between race and condition ($F(1,78) = .82$, $p = .37$), no significant interaction between item and condition ($F(1,78) = .07$, $p = .79$), and no significant interaction between race, item, and condition ($F(1,78) = 1.01$, $p = .32$). Similar to their decisions to shoot targets, participants were not significantly more or less likely to not shoot targets while playing the game regardless of any combination of target race, item, and race of criminal in the media article. As was the case with the decision to shoot, the only variable that influenced this decision to not shoot was the item held by the target.
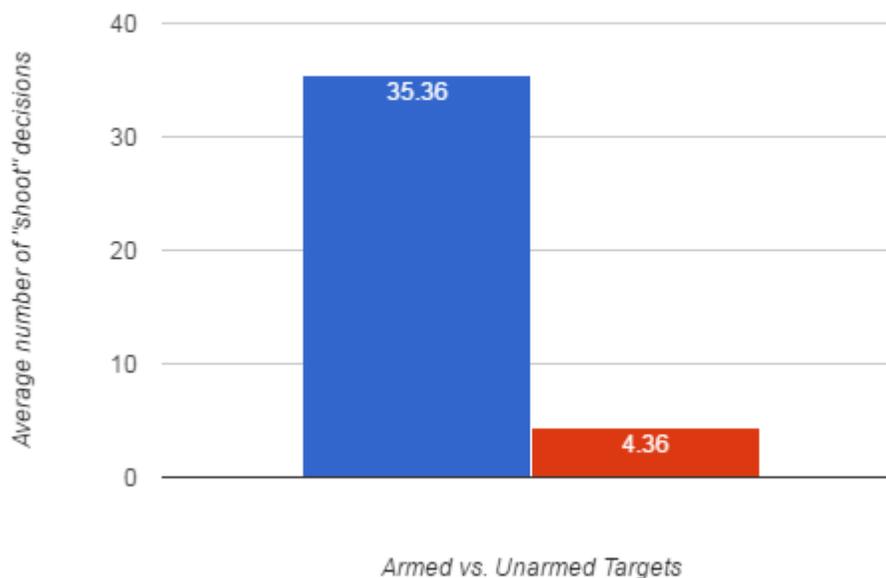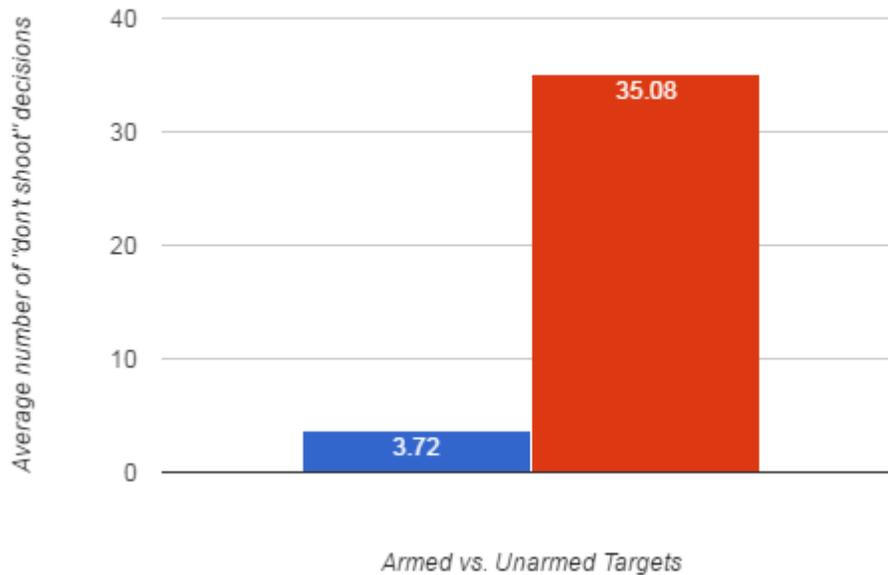
*Figure 4: Average number of "don't shoot" decisions for both armed and unarmed*

*targets, with a main effect of item on likelihood to not shoot (F(1,78) = 1628.856, p < .05), such*

*that participants were significantly more likely to not shoot a target if the target was holding an*

*object than if the target was holding a gun.*

**Between Group Differences:** The analysis of the between-group differences revealed a

significant main effect of condition ($F(1,78) = 6.441$, $p < .05$) on likelihood to not shoot.

Interestingly, and unlike the first four analyses, participants were significantly more likely not to

shoot targets in the game if they had read the media article with the Black criminal ($M = 9.91$,

$SD = 8.24$) before playing the game than if they had read the media article with the White

criminal ($M = 9.40$, $SD = 8.16$) before playing the game. For a visual representation of this

interaction, see Figure 5.
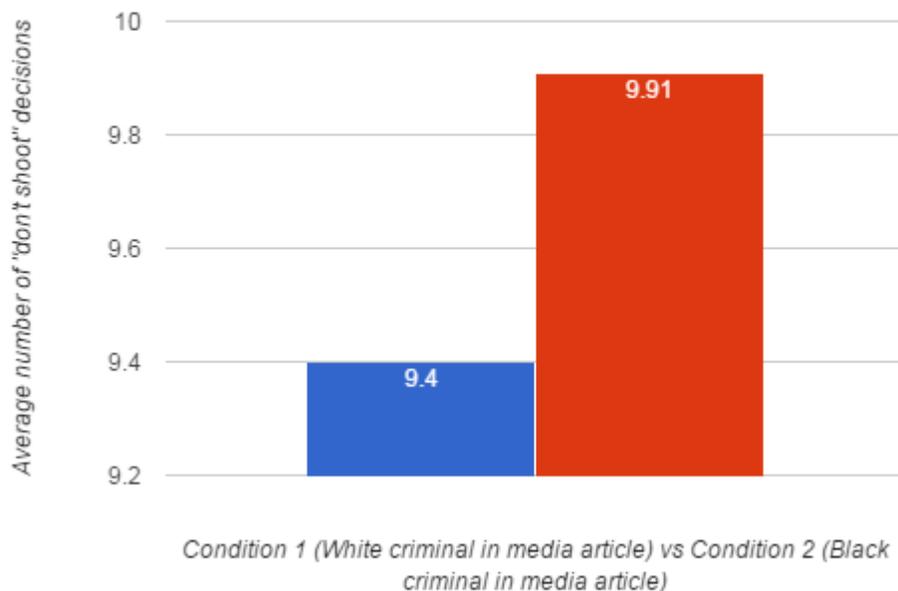
*Figure 5: Average number of "don't shoot" decisions for condition 1 (White criminal in media article) and condition 2 (Black criminal in media article), with a significant main effect of condition (F(1,78) = 6.441, p < .05) on likelihood to not shoot. Participants were significantly more likely not to shoot targets in the game if they had read the media article with the Black criminal before playing the game than if they had read the media article with the White criminal before playing the game.*

**Explicit Analyses**

None of the explicit measures correlated with reaction times for any of the four levels of the dependent variable (reaction time). There was no relationship between the reaction times and political affiliation, attitudes towards Bard's scholarship programs, attitudes towards income inequality, awareness of the Black Lives Matter movement, sympathy for the Black Lives Matter

MEDIA AND SHOOTER BIAS

movement, awareness of the All Lives Matter movement, sympathy for the All Lives Matter

movement, or explicit ratings of fear felt while reading the media article. For the specific values

of these (non-significant) correlations, see Table 1.

| Explicit Measure x Reaction Time (ms) | WhiteObject | WhiteGun | BlackObject | BlackGun |
|---|---|---|---|---|
| Political Affiliation | -.06 | .09 | -.15 | -.09 |
| Attitude Towards Bard Scholarship Programs | -.06 | -.02 | -.07 | -.03 |
| Attitude Towards Income Inequality | -.07 | .07 | -.15 | -.10 |
| BLM Awareness | -.05 | .156 | .06 | -.01 |
| BLM Sympathy | -.06 | -.02 | -.10 | -.04 |
| ALM Awareness | -.05 | -.01 | -.19 | -.12 |
| ALM Sympathy | -.14 | -.07 | -.01 | -.15 |
| Fear While Reading Article | -.16 | -.20 | -.11 | -.05 |

*Table 1:  All correlations are insignificant, as p > .05 for each analysis. Thus, there is no*

*relationship between any of the explicit measure variables and reaction times while playing the*

*shooter game.*

**Discussion**

This study investigated the relationship between the media, specifically online news coverage, and implicit racial biases. These implicit racial biases have been observed in the past through the completion of simple videogames by participants called shooter tasks, which track how fast and accurate the player is at deciding (within a timeframe of less than one second) to either shoot or not shoot a target when they are either armed or unarmed (instructions in the game specify that the player must only shoot armed targets). The race of the individual targets who pop up on the screen randomly varies between White and Black, with the goal being to bring out any implicit racial biases in an observable pattern by looking at participant's accuracy and reaction times for both shooting and not shooting armed White targets, unarmed White targets, armed Black targets, and unarmed Black targets. Past research using this game has found that participants are faster and more accurate when deciding to shoot armed Black targets, and when deciding to not shoot unarmed White targets (Correll et al., 2002; Correll et al., 2011), and that this phenomenon, known as shooter bias, can be manipulated by a number of variables, such as perceived contextual danger, fear of racial minorities or "White fear", racial stereotypicality, and phenotypical Afrocentric features (Correll et al., 2022; Kahn & Davies, 2010; Mekawi, Bresin, & Hunter, 2016).

In addition to these findings on shooter bias, Correll et al (2007) found that police officers were susceptible to this same shooter bias as non-police participants, regardless of the fact that they were more accurate with their shooting. Given the empirical literature suggesting that Black individuals are both treated in a more violent and negative manner by police officers than White individuals are (Najdowski, Bottoms, & Goff, 2015; Norris et al., 1992), and portrayed in a more violent, threatening, and overall negative manner by the media (Weiss &

Cher,ak, 2012; Dixon & Linz, 2000; Sommers et al., 2006), this study aimed to examine the relationship between the shooter bias (for which the original 2002 shooter game was named "The Police Officer's Dilemma Task") and the portrayal of Black versus White individuals in the media, specifically in news coverage. The relevance of this topic to both the current issues of police brutality against people of color and to that of implicit racial biases and racial prejudice in general, cannot be overstated. This study aimed to investigate the significance of the news coverage of Black individuals as a possible contributing or relevant factor (of which there are certainly many) to the existence of both shooter bias and implicit racial prejudices, both of which are themselves likely contributing factors to the issue of police brutality against Black individuals and to the issues of racism, racial discrimination, and racial oppression in America.

Participants were told that the study concerned emotions and the effect of strong emotional material on their cognitive performance, specifically on their concentration and their ability to focus on small details. They were then given a media article to read that they believed to be a news report from CNN. However, it was a fake news article written by the primary investigator. The article described the mugging of a family by either a White criminal or a Black criminal, depending on the condition that the participant was sorted into. After reading the article, participants completed a shooter task (the same shooter game used in the original 2002 shooter bias study) and then answered explicit measures questions concerning their attitudes towards racial minorities.

There were eight different hypotheses in this study; the null hypothesis was true for all eight of these hypotheses. Though some significant results were found, they were not congruent with the significant results that were expected. It was hypothesized that the media article with the Black criminal would significantly exacerbate the shooter bias such that participants who read

that article would be significantly faster to react to armed Black and unarmed White targets, more accurate when making decisions concerning those two types of targets, more inaccurate when making decisions concerning unarmed Black and armed White targets, more likely to shoot armed Black targets, and more likely to not shoot unarmed White targets, than participants who read the article with the White criminal. It was also hypothesized that positive explicit attitudes towards racial minorities would positively correlate with reaction times in the shooter game, while negative explicit attitudes towards racial minorities would negatively correlate with reaction times in the shooter game. However, not only did the media articles have no significant effect on the elements of the shooter bias that were expected to be affected, but the shooter bias itself wasn't fully observed among the 80 participants who completed the shooter game.. Additionally, there was no relationship between explicit attitudes towards racial minorities (neither positive nor negative attitudes) and participant's reaction times while playing the shooter game.

Despite the results not confirming any of the hypotheses, there were some significant findings from the implicit analyses. Participants were significantly faster to react to targets if the target was both Black and holding an object. Participants were also significantly more likely to make an inaccurate decision while playing the game (either a miss or a false alarm) if they had read the media article with the White criminal before playing the shooter game and the target in the game was also holding an object. The item held in the hand of the targets in the shooter game also had a significant effect on the participant's likelihood to both shoot and not shoot; participants were significantly more likely to shoot targets who were holding guns and significantly more likely to not shoot targets who were holding objects. The final (and perhaps most interesting) significant finding from the implicit analyses was that participants were

significantly more likely to not shoot targets if they had read the media article with the Black

criminal before playing the shooter game.

**Implications**

The results of this study do not show strong evidence of the shooter bias among the same

population. However, due to several limitations in the study and the extensive empirical

literature on the existence of the shooter bias, it would be a severe leap of logic to assume that

these results imply a lack of shooter bias or implicit racial bias among the undergraduate student

population at Bard College. Additionally, the significant findings from this study do suggest

some biases may be present among this population, though again due to limitations in the study

there is only a certain extent to which the external validity of this study can be assumed to be

valid. There were two significant findings involving the media article, the most important of

which was a main effect of condition (the race of the criminal in the media article) on a

participant's likelihood to not shoot a target; the analysis revealed that participants were more

likely to not shoot targets in the game if they had read the article with the Black criminal. This

finding is contrary to what was predicted concerning the effect of the media article with the

Black criminal, as it was predicted that this article would actually exacerbate the shooter bias

such participants would be *more* likely to shoot Black targets who were holding guns, while

being *less* likely to shoot White targets who were holding a random object. Instead, the article

with the Black criminal made a significant difference in participant's likelihood to shoot *all*

targets in the game. While this is both contrary to the hypotheses which were based off of the

findings from past literature concerning the portrayal of Black individuals in the media, it is not

completely nonsensical. A possible explanation for this effect is that, as they read the media

article with the Black criminal, the participants were reminded of the negative light in which the

media tends to portray Black individuals (as hypothesized), but instead of this causing them to

demonstrate a greater likelihood to react defensively when confronted with a Black target, this

caused them to go out of their way to appear as if they were going *against* the norm in terms of

how people may be affected by the media and its portrayal of Black people. In other words,

participants who read the media article with the Black criminal may have been more motivated

to appear unbiased in any way regarding race, as they were reminded of the presence of racial

bias in the media when they read a media article that described the race of the criminal multiple

times as Black, and also described that same criminal committing a violent act.  Additionally,

participants may have been motivated to not appear racially biased in any way because they were

aware of the fact that they were being tested for racial bias. This possibility will be further

discussed in the limitations section.

Participants in the study were extremely good at differentiating between a gun and a

random object in the targets hands. The main effect of item on both participant's likelihood to

shoot and to not shoot demonstrate that participants tendency to shoot and to not shoot was

strongly influenced by the presence of a gun in the targets hand, while the lack of race effect

suggest that their implicit reactions may not have been driven by race in the game. Again, this

lack of race main effects goes against the hypotheses and the past literature on the shooter bias.

However, as with the finding concerning the media article's effect on participant's likelihood to

not shoot all targets, there is a possibility that participants were simply aware of the fact that they

were being tested for racial biases and so were able to consciously only focus on the weapon in

the targets hand.  Additionally, there were many participants who were curious as to what the

"highest score" was that anyone playing the game for the study had achieved, and who were

extremely focused on the number of points that they had, trying to get as close to a perfect score

as possible. This occurred regularly even though participants were informed that their likelihood at winning one of the Amazon gift cards did not increase based on their personal score in the game (though this likely would have had also had a noticeable effect on participants concentration during the game). The point system is present in the game to give participants some incentive as to focus on the task instead of randomly pressing the buttons for shoot and don't shoot; however, it is possible that they became so focused on the point system that they lost all focus on everything that didn't concern the presence of an object or a gun in a target's hand. Though this would also be contrary to past research on the shooter bias, ruling out possible explanations such as this for the lack of findings concerning race effects would be ignoring factors that played a part in some way for several participants.

Participants were significantly faster to react to targets if the target was Black and was holding an object. This finding is peculiar, as it it the complete opposite of what is normally observed in participants playing this shooter game. Participants are typically faster to react to Black targets if they are holding a gun. It is possible that participants were either aware of the intent of the study and were going out of their way to not appear racially biased, or that they had heard about this sort of shooter game before and were trying to go against what they knew was typically observed from the game data. However, it is also a possibility that this process was implicit for participants, and that they were not even consciously aware that they were reacting faster to unarmed Black targets.

Participants were also significantly more likely to make an inaccurate choice if they had read the media article with the White criminal and the target was holding an object. This could mean that participants were actually affected by the media article with the White criminal such that their accuracy and/or concentration was influenced by having just read the news report; race

was not influencing their decisions (at least not significantly) in this scenario, which implies that there may have been something about the media article with the White criminal that had an effect *only* on their ability to differentiate random objects from guns. One possibility is that participants were not used to reading something in the media where a White individual was portrayed in such a negative way, and the unexpectedness of reading about something that they may have subconsciously expected mostly from Black people (the violent crime) had a significant impact on their focus throughout the task. In this scenario, the media article would not have necessarily influenced participant's racial biases to be even more biased against Black targets, but their pre-existing racial biases would have still influenced their concentration because of how they responded to reading about a White individual committing a violent crime.

The lack of parallel between the results found from the implicit analyses and the past findings in literature concerning the shooter bias, specifically the lack of increased bias against armed Black targets and decreased bias against White targets, can also be possibly attributed to participants tending to know that they were being tested for racial bias, or at least knowing that race had something to do with the study. This lack of success with the deception utilized in the study will be further discussed in the limitations section. Additionally, the lack of correlation between explicit attitudes towards racial minorities and reaction times can be explained the high likelihood of participants both wanting to appear explicitly non-biased against racial minorities but also going out of their way to not appear biased against Black people in the shooter game. Lastly, the lack of correlation between explicitly experienced fear while reading the article and reaction times can be explained by a large number of participants realizing that the media article was not real, and thus not becoming emotionally invested in what they were reading. This will also be further elaborated on the limitations section. The results of this study are implicative of a

low level or lack of racial bias against Black individuals among the sample population (Bard undergraduate students), but given the extensive literature on the topic of both shooter bias and bias against Black individuals in general, it seems unlikely that Bard College is somehow a racial bias-free haven, and seems more likely that the lack of observed shooter bias among participants has more to do with the extensive amount of limitations involved with this study.

**Limitations**

There were several limitations in this study. The first limitation concerns the fake media articles that were given to participants to read before playing the shooter game. The media articles were made to appear as if they had been published by CNN, and were part of a larger news story about rising crime rates on college campuses within Washington, D.C. The success of this study's investigation depended heavily on the success of the deception that was utilized for the perceived media effect (the belief that one had just read a real news article depicting either a White or Black person committing a violent crime). Unfortunately, a large number of participants were aware of the fact that that the media article was not a real article published by CNN. Some participants made this clear while they were reading the article or after they had finished reading, while others made it clear while answering the questions for the manipulation check. The fact that this part of the deception did not work on a large number of participants means that the effect of the media on implicit racial biases may not have been what was really being measured while participants were playing the shooter game. Most participants who questioned the legitimacy of the media article brought up how they felt it was strange that a news article would repeat the race of the criminal, as they felt it was unnecessary and over excessive. Other participants pointed out that it didn't make sense for the father/husband in the "Jackson family" to still be unconscious in the hospital, since the blow that he received to his head from

the criminal's should not have done that much damage to him. While this claim seems to be a bit of a stretch on the part of the participants, the fact remains that there were of number of participants who were frequently questioning the legitimacy of the media article, which could have had a significant impact on how much they were actually impacted by the media article in terms of their implicit biases being effected. Additionally, believing that the news article they were reading was fake could have possibly prevented participants from being emotionally invested and/or emotionally stimulated by what they were reading, which would explain the lack of correlation between explicitly expressed fear while reading the article and reaction times while playing the shooter game.

A second limitation for this study was the possible ineffectiveness of the deception concerning the topic of the study. When asked if they wished to participate, given the informed consent form, and given instructions, participants were informed that the topic of the study was emotions, specifically the effect of strong emotionally stimulating material on cognitive ability and/or the ability to pay attention to small details. This was done in an effort to prevent participants from knowing that they were being tested for their implicit racial biases; if participants knew that they were being tested for racial biases, they would likely go out of their way to not appear racially biased and/or racist, in an effort to have their behavior go along with what is socially acceptable. However, many participants indicated in their answers to the manipulation check questions that they believed the purpose of the study to have something to do with race.

While most participants who indicated this said that they simply believed the topic to be something to do with race, racism, and/or racism in the news, some participants said that they believed implicit racial biases to be the topic, while others even guessed exactly what the topic

and purpose of the study was, including the role of the media article and the importance of

reaction times/accuracy for shooting Black versus White targets in the game. While it is true that

due to the nature of the explicit measure questions after the shooter game, it may have been quite

obvious by the end of the study that race and racial biases played a large role, at the same time

participants would occasionally comment about the race of the targets while playing the game,

and/or ask questions while playing the game such as "Is this game trying to see if I'm racist?".

This all took place *before* the explicit measure questions were asked, which means that the

deception concerning the topic of the study may not have been particularly effective. If this was

to be the case, it would mean that there was a high possibility of the participant's data from the

shooter game not being an accurate measure of their implicit racial biases and/or prejudices, as

they would likely be going out of their way the entire time to not appear racially biased. The fact

that the shooter game also went on for a fairly long time (roughly 18 minutes, with 80 trials

consisting of 20 trials for each target type), means that participants had a sizeable amount of time

to realize that the game had something to do with race and was collecting data on their racial

biases. A shorter version of the game with fewer trials would likely reduce this problem, as it

shouldn't require such a large number of trials to assess the presence of an implicit racial bias

while playing the game.

The sample size for this study was rather small, with only 80 participants completing the

shooter game (40 in each condition) and 76 of those 80 participants completing the explicit

measures questions (the first six participant's explicit measures responses were discarded due to

the questions being coded and formatted incorrectly at the time of their participation. With a

larger sample size, the chances of statistically significant results may have increased in the

direction that was predicted, with the media articles having an effect on the participant's

likelihood to shoot armed Black targets and not shoot unarmed White targets. However, because

of the limitations already discussed, this would still not be guaranteed with a larger sample size.

Additionally, there was no control condition for this study. While the study was initially

designed with a control condition in mind, with participants reading a media article that had

nothing to do with crime or race before playing the shooter game, this idea was dropped in order

to maximize the number of participants in each condition, and thus maximize power for the

study. In a more ideal scenario in which participants did not have to be recruited and run one at a

time in person, a control condition would have been used in order to have a baseline to asses the

other two conditions against in terms of performance on the shooter task. Given the fact that the

population pool for this study was also limited to Bard College undergraduate students, the

extent to which the findings can be applied to the general population is limited, though the study

was designed with specifically Bard College students being the population of interest, as opposed

to then generalizing these findings to the outside world.

The explicit measure questions both for participant's internal and external motivation to

control prejudice, as well as the pro-Black and anti-Black scale questions, were formatted and

coded incorrectly such that participant's responses did not result in an accurate measure of either

variable. The cause of this was traced to human error, as a misinterpretation of the formatting for

the questions and accidental exclusion of some of the questions from the original questionnaires

resulted in participant's final responses for these questions not being representative of what the

questions intended to investigate. Lastly, it is possible that participants completing the study may

have been too distracted at times while playing the shooter game, as the controlled environment

chosen for completing the game (the 2nd floor hallway of the Bard College campus center)

wasn't nearly as controlled as the environment ideally should have been; although the hallway

was quiet, there was no way to guarantee that people wouldn't walk up and down the hallway randomly (though this only occurred a handful of times during data collection), which could distract participants, especially if the participant knew the individual who was walking by. Though no direct participant communication involving friends of participants walking by occurred, it is unknown how many people who walked by still knew the participant, and thus still could have distracted the participant while they were playing the game. Even if individuals who walked by didn't know the participant personally, distraction is certainly still possible if someone walks by while one is playing a task that requires concentration. A more controlled environment such as an empty room would have been more ideal for data collection.

**Future Research**

Due to the excessive amount of limitations present during this study, future investigations concerning this topic, specifically using the same or similar methodology, are recommended. A more effective deception, both for the media article being used and for the topic of the study, may be necessary. Additionally, a larger sample size and a better, more controlled environment for data collection would be needed. The possibility of re-doing the current study using real news articles should be considered, as this would eliminate the issue of having to imitate an actual news article and convince participants that what they are reading is legitimate news coverage. If a repeat of the current study was to be done, it would also be ideal to have a control condition. Different forms of media coverage would also be an interesting measure to change in a future investigation on this topic. While most participants indicated in their explicit measure responses that online news articles were indeed their primary source of news information, social media was the second most popular response for that question. An investigation the effects of social media on implicit racial biases could be carried out by using similar methodology to the current study,

but by changing the media articles to either illegitimate or actual social media posts regarding race.

Another future direction for this research would involve using police officers as participants, as opposed to college students. This could be done in a similar manner to the study done by Correll et al, (2007) that used police officers as participants in study involving the shooter bias. While the findings from that research suggest that police officers are susceptible to the shooter bias (while still being faster and more accurate with their shooting), it would be interesting to see if the media and it's portrayal of Black individuals has any effect on the reactions of police officers to potentially threatening targets who may or may not be Black. This would again be particularly relevant to the issue of police brutality against racial minorities, and would perhaps be even more relevant today than ever before due to the ease of access to different forms of electronic news and media today. It is likely that police officers are exposed to the media in the same way that non-police are, but due to the nature of their work and the way that their occupation approaches dangerous situations that are  covered in such news stories, it may be that the media has either a larger or smaller effect on their reaction to potentially threatening Black individuals.  Again, any further investigations concerning the topic of media and shooter bias should be done while limiting (to the largest extent possible) the limitations that were present in this study, as there is a chance that the lack of significant results involving racial biases and media effects had something to do with unsuccessful deceptions/unbelievable media articles, as opposed to a lack of racial bias among the sample population.

**Conclusion**

This study investigated the effect of online news articles and their portrayal of Black and White individuals committing a crime on a person's shooter bias. This was done in order to

investigate the media, specifically the way that the media has tended to historically portray Black individuals in a more threatening and generally negative light than White individuals, and the effect that this media portrayal can have on a person's implicit racial biases while playing a shooter game that requires them to make split-second decisions concerning whether or not to shoot an armed or unarmed target who pops on the screen. As the race of the targets in the game switches between White and Black, it was expected that, consistent with past research, a racial bias would be observed among participants such that they would be faster and more accurate to shoot armed Black targets and to not shoot unarmed White targets. It was also predicted that participants who read a news article portraying a Black person committing a violent crime would demonstrate a significantly exacerbated shooter bias when compared to participants who read an article with a White criminal.

Results indicated that this was not the case; while participants were significantly more likely to shoot armed targets and to not shoot unarmed targets, they were not more faster or more accurate when shooting armed Black targets or unarmed White targets. However, some interesting statistically significant findings from this study still suggest that the race of the criminal in the media article did affect certain aspects of participant's performance in the shooter game, while participants were also significantly faster to react to unarmed Black targets while playing the game. These findings, along with the large number of limitations involved with the study, encourage returning to this topic in the future with a less flawed research design and a better execution, in order to potentially observe either a more significant relationship between the shooter bias and the portrayal of Black individuals in the media, or a more definitive lack of a relationship between the two. Regardless of there being any relationship between the two, the existence of the shooter bias and the historic negative portrayal of Black individuals in the media

have both been well-documented in past literature, and neither one's relevance and/or

contribution to the current wealth of social injustices and rampant racial inequality should be

overlooked.

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Appendices

**Appendix A**: Recruitment Flyer

# Chance to win a $90 Amazon Gift Card!



# Free Baked Goods!

**If you wish to participate in this psychological study, please e-mail Matthew Phelps at mp7888@bard.edu for more information.**

**You must be at least 18 years old to be eligible for this study.**

**Appendix B**: Recruitment E-mail

Thank you for your interest in this psychological study. The study will investigate the effect of strong emotions on your cognitive performance, specifically concentration. If you choose to participate, your participation will take approximately 30 minutes, but time slots for participants will be one hour long so as to allow for any possible questions or subsequent discussion about the study. Please send me your hours of availability so that I can schedule a time for you to participate (participation must be completed before spring break). The study will take place on the second floor of the Campus Center (you will be notified if this location changes). You will be fully informed as to the details of the study upon your arrival. Your participation in this study will give you a chance to win a $90 Amazon gift card. There will also be free baked goods available for all participants.


Thanks,


Matt Phelps

MEDIA AND SHOOTER BIAS

**Appendix C**: IRB Application and Subsequent Addendums


Matthew Phelps
mp7888@bard.edu
443-852-1141
Psychology
Undergrad
Tom Cain
tcain@bard.edu
Date

I have read the IRB's categories of Review, and my proposal qualifies for an **Expidited Review**

I do not have external funding for this research. The only funding will be provided by the Bard College Psychology Program.

Begin date: January 30th, 2017

End date: April 1st, 2017

Title: Does the Media Make Us More Likely to Fear and Shoot Black Individuals?

Brief summary of research question (250 words or less):

For this research, I am interested in the media and implicit racial bias, specifically the shooter bias. The shooter bias is a phenomenon that has been studied for years, in which participants are more likely to shoot (by pressing a specific button on a keyboard) armed targets in a shooter game when they are black than when they are white, and are also more likely to not shoot (by pressing a different button on a keyboard) unarmed targets when they are white than when they are black. The original shooter bias study was conducted in 2002 by Correll et al. The media I am interested in investigating for this research is online news articles, since they are such popular sources of news information in the present day. I'm interested in the perceived media impact of online news articles on the shooter bias. Research in the past has suggested that black and white individuals are represented differently in the media, with black individuals being more frequently portrayed in a more negative light through dehumanization and/or different wording that suggests they are more violent and dangerous than white individuals. The goal of this study is to investigate whether a perceived media impact

(the belief that one has been exposed to the an online news article depicting white or black individuals committing a crime) directly before playing a shooter game will influence the shooter bias, which I believe it will.

-My research will not include participants from specific populations (i.e. children, pregnant women, prisoners, or the cognitively impaired).

Briefly describe how you will recruit participants: Participants will be recruited with flyers placed around Bard College Campus. The source of the participants will be Bard's student body.

**Procedure**

This experiment will require three groups of participants; two treatment groups and a control group. The two treatment groups will be the white perpetrator group and the black perpetrator group. The only difference in the procedure for the two treatment groups is the race of the criminal that is described in the media article that they read.

Participants (for all three groups) will enter individually, be asked to have a seat, and will be informed about the importance and necessity of consent in research. They will then be given a consent form and be told that they may take as long as they wish to read over it and to be sure to ask any questions that they may have. If they sign the consent form, they will then be given a media article to read, in printed paper format. Participants in both the white and black perpetrator groups will read an article describing either a white or black individual committing a crime. Participants in the control group will read a media article (also in printed paper format) that has nothing to do with race or crime, but that still contains emotional material. Subsequently, participants (in all three groups) will be asked to sit at a computer and will be instructed on the rules of the shooter task. They will be told that the focus of the game is on reaction time, as the study was introduced to them as concerning reaction time on a cognitive task after reading emotional material. They will be asked to pay as close attention as possible, and that they will be awarded points based on their performance.

After completing the shooter task, the participants (in all three groups) will be given questions for a manipulation check, and will then complete a set of questions (testing for explicit measures) on the same computer. They will be told that they do not have to answer any questions that they are not comfortable answering, and will be reminded that their answers will remain completely anonymous. After completion of the explicit measures questions, participants will be debriefed and encouraged to ask any questions that they may have. As they leave, participants will be given a contact

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handout with information on how to contact the primary investigator, project advisor, and the Bard IRB.

Each participant's participation will take no longer than one hour.

**Risks and Benefits**

Although there are no physical risks to this study, there is a chance that participants may begin to find the tasks tedious or stressful. This experiment requires reading an emotional piece of media writing, and some participants may be experience stress at what occurs in the article. Additionally, participants may discover something about themselves from their data that they are not happy with, specifically relating to the existence of implicit racial bias. Should the latter occur, it is made clear in both the consent form and the debriefing that they should discuss the research with me or consult with Bard's Health & Counseling Services.

Benefits of participation in this study (in addition to the baked goods and the chance to win a $100 dollar gift card) include a better understanding of cognitive functioning as it relates to emotion, and a better understanding of how psychological research is conducted in an experimental setting.

**Verbal description of the consent process**

As participants are given the consent form, the following shall be stated:

"Before we continue with the study, it is important that you understand the idea behind informed consent and why it is necessary in research. Unless informed consent is given by a participant, it is unethical to continue a study with that participant. Thus, your participation in this study will only occur if you give your consent. The informed consent form that must be signed in order for you to participate will let you know what the study is about, what your participation will consist of, what your compensation will be, and what any potential risks of participating may be. This is in order to protect the dignity and rights of the participants, as well as their psychological well-being. If one were to participate in research without consenting to it and/or understanding what the study is about and what their participation will entail, it is likely to cause distress for the individual. You will not have to do anything that you do not wish to do or are not comfortable with, and if you wish to not participate altogether, you may leave at any time with no questions asked and will still receive compensation. If you wish to not sign the informed consent form, you do not have to do so".

**Confidentiality**

The information of the participants will be kept completely confidential. The information from the participant's participation in the shooter task will be on a computer that is password protected. The participants responses to the explicit measures questions will be on the same computer. The computer will be in a room that can only be accessed (with a key) by myself and my project advisor. Further information from the participants will not be recorded.

**Explanation of deception**

My study makes use of a deception. In the consent form, it says that the purpose of the study is to investigate the effects of reading emotional material on cognitive performance (specifically, reaction time on a cognitive task). The media articles for two of the three conditions (white criminal and black criminal) describe scenarios that are emotional in nature, but also describe what I am actually interested in (the description of white versus black perpetrators of crime in the media and its subsequent effect on shooter bias). The control group will read an article that is emotional in nature but has nothing to do with race, crime, or individual people. Hopefully, this will ensure that all three conditions have a somewhat emotional response to the articles, but that the effect of race in the two treatment groups is significantly larger than a lone effect of emotional reading material.

This deception is necessary so that the participants don't know immediately that the study concerns implicit racial bias. If they were to know right away that the study was about implicit racial bias, their data from the shooter task would likely not be indicative of their actual levels of implicit racial bias, since they would likely be going out of their way the entire time to not appear racially biased. With this deception, they will hopefully not realize what the study is actually testing until they are at least a part of the way through the shooter task, so that their data from early on in the game will be truly indicative of any implicit racial biases.

This deception will be explained fully in my debriefing. The participants will be told the true topic of the study, be given background information on shooter bias and implicit biases in general.  They will also will be assured that it is perfectly normal to not immediately see through a deception used in research, and that they need not feel like they are weak or gullible. A reassurance that these implicit biases exist everywhere and aren't necessarily related to or indicative of explicit biases and/or prejudice will also be in the debriefing. Lastly, both the debriefing and consent forms will stress the importance of contacting Bard's counseling services if one is distressed from information that is gained from participating in this study.

Revision letter:

Thank you for reviewing my proposal. In addressing the issues with confidentiality, a number will be assigned to each participant's name directly after their arrival and all information from their participation will be linked to this number instead of their name. All previous information linking the participant's information back to their name (e-mails, etc.)  will be thrown away/deleted directly after this number is assigned. This information was added to the (attached) revised consent form and the (attached) revised assurance of confidentiality paragraph from my proposal. To address the issues with the deceptions affecting the reputation of CNN and Kait Richmond, an explanation was added to the (attached) revised debriefing form informing the participant that the crime articles weren't published by CNN and were instead written by me, and that the writing of Kait Richmond was changed for the article about climate change. Also, it should be noted that though real media articles aren't used, the articles that are used are made to appear as if they are real news articles (in terms of writing and phrasing), and the observed effect (or lack thereof) on the participant is actually of a *perceived* media impact (believing that one has just read a media article depicting a crime committed by either a white or black individual). This difference was incorporated into both the (attached) revised debriefing form and the (attached) revised first paragraph of the proposal (the overview).

I disagree that the explicit measures questions 11-20 aren't appropriate for black participants, as that would assume that black individuals can't and don't respond with prejudice against their own race. However, past research suggests that black individuals can be biased and/or respond with prejudice and/or fear against their own race. For example, in the original shooter bias study by Correll et al. (2002), the authors found an equivalent level of bias among both black and white participants, suggesting that these implicit racial biases that I am testing for can be found in equal amounts for both white and black participants. The IMS-EMS questionnaire by Plant & Devine is an established questionnaire that has been used since 1998, and so to change the questions on it may invalidate it and make it so that I am no longer investigating what I originally intended to. Lastly, I realized I didn't attach my demographics questions (which will be answered electronically before the manipulation check) to my initial proposal submission. They are attached here, but if you would like me to send them separately I can do that as well.

Thank you,
Matthew Phelps

Revised assurance of confidentiality:

The information of the participants will be kept completely confidential. The information from the participant's participation in the shooter task will be on a computer that is password protected, as will all subsequent information from the participant's participation (explicit measures questionnaire, manipulation check, demographics). This computer will be in a room

that can only be accessed (with a key) by myself and my project advisor. Further information from the participants will not be recorded. A number will be assigned to each participant's name directly after their arrival and all information from their participation will be linked to this number instead of their name. All previous information linking the participant's information back to their name (e-mails, etc.) will be thrown away/deleted directly after this number is assigned.

Addendum concerning methodology changes:

Senior Project Methodology Changes: Does the media make us more likely to fear and shoot black individuals over white individuals?

After my midway board and a discussion with my senior project advisor, I have made some slight changes to my methodology. The first change is that I have removed the control condition from my study. This is in order to maximize the number of participants in the two other conditions (reading the media article with a white criminal or a with a black criminal). I have changed the wording on three of my explicit measures questions concerning the Black Lives Matter, All Lives Matter, and Blue Lives Matter movements. Initially, these three questions asked participants the extent to which they approved with these movements. The questions now ask the participants to indicate their level of sympathy for said movements. This was changed in order for me to get a more accurate measure of what I am interested in from those questions. Lastly, I have added a fear scale to the end of my explicit measures, asking participants to indicate how much they agree with the statement "I felt afraid while reading the media article". This is in order to see if explicit fear correlates or relates to the results of the shooter bias task, to other explicit measures, or to both. .

Thank you,

Matthew Phelps

**Appendix D**: IRB Revision Letter, IRB Approval Letter & IRB approval of methodology changes

Date:    18 November 2016
To:      Matthew Phelps
Cc:      Thomas Cain
From:    Simeen Sattar
Re:      Does the Media Make Us More Likely to Fear and Shoot Black Individuals?

**DECISION: MINOR REVISIONS REQUIRED**

Dear Matthew,

The Bard IRB has reviewed your proposal. Changes are required before the proposal can be approved.

- 
- On      the proposal form, you write "the information of the participants itself   will   be kept completely confidential" and go on to describe       the physical security of the information. However, that is not the           same as confidentiality. On the consent form, you state that the           participant's name will not be recorded on the questionnaire,     leaving     open     the question of whether the result of the game will be           linked   to   the   person's   name.   Please revise this section of the           proposal and the consent form. In addition, the questionnaire is           confidential but not anonymous, since you will be personally       collecting the form from an individual whom you can identify.
- 
- The      deception in your project is not confined to the purpose of the     study            as claimed on the proposal form. Participants are deceived  into thinking that the three readings are news articles published by        CNN, which is false in the case of the two crime articles and not           entirely true in the third case, as you have altered the writing of   the        author,     Kait Richmond. These deceptions affect the reputation           of CNN   and   Kait   Richmond.   Your debriefing statement should make        clear that the crime articles were not published by CNN, that you           wrote them, and that you changed the writing of Kait Richmond. If          your crime articles are modeled on an article in the media, you           should   identify   the   true   author and publisher. This raises a       fundamental question about your project: how can you claim to study    the effect of the media on attitudes when you are not using articles           from            the media?
- 
- Regarding       your Explicit Measures Questions, items 11-20 appear to assume that           the respondents are not "Black people". Since your study           includes participants of different races and ethnicities, you should           reconsider   the   appropriateness   of   these questions.

Please submit the relevant revised materials and **attach a letter** that explains how each of the above items was addressed. If you feel you cannot address these items, please explain why in your revision letter. The letter and revised materials should be sent to sattar@bard.edu **and** irb@bard.edu.

Your proposal will be reviewed upon receipt of your resubmission and a decision rendered quickly. Please contact me if you have questions about this letter.

Sincerely,

Simeen Sattar
IRB Chair

5 December 2016

Matthew Phelps
mp7888@bard.edu

Re: Does the Media Make Us More Likely to Fear and Shoot Black Individuals?

**DECISION: APPROVED**

Dear Matthew,

The Bard Institutional Review Board has reviewed your response letter and revisions. While we continue to have reservations about your proposal (see below), these do not fall within the purview of the IRB and we have no further objections. Your project is approved through 3 May 2017. Your case number is 2016DEC5-PHE. Please notify the IRB if your methodology changes.

I pass along these comments for your consideration:

The fake newspaper article is an IRB concern insofar as the researcher claims his results will explain in some generalized way the impact of media on fear and shooting of black individuals. What this project in fact does, perhaps, is "measure" the impact of racist associations of black people with animals, etc., on a willingness to shoot them; but it does not measure the impact of media since there are no actual newspaper articles in the study. The counter assertion that this study is on the "perception of media" makes no sense as an analytical category in this context. However, as the researcher is clear in the debriefing on this point and plans to be equally so in the Senior Project, the IRB is satisfied.

The IRB concern regarding the Explicit Measure Questions does not assume black people hold no prejudice against black people. Rather, as the persistent, explicit object of that series of questions, respondents will readily read this to mean that the inscribed subject is non-black (even though the subject is not explicitly racially determined). Additionally, the questions imply social circumstances and pressures that are experienced differently by black and non-black people in monocultural contexts. Thus, the assertion that the "politically correct" or openly racially discriminatory atmospheres suggested by the questions do not assume that the respondent is non-black is disingenuous. While answering the questions,

a respondent might readily be able call to mind personal experiences on an all non-black sports team or in an all non-black classroom, no similar space is given for a respondent to recall experiences at the dinner table in a black household or, if so, only awkwardly. This is a problem of the survey, not necessarily of the study itself.

We wish you success with your Senior Project research.

Sincerely,

Simeen Sattar
sattar@bard.edu
IRB Chair

cc: Thomas Cain

11 February 2017

Matthew Phelps
mp7888@bard.edu

Re: Does the Media Make Us More Likely to Fear and Shoot Black Individuals?

Dear Matthew,

Thank you for informing the IRB of the changes to your experimental design and questionnaire. As you write in your letter, the changes are slight. Your proposal remains approved. Please copy me on any further changes, because I do not see correspondence sent only to irb@bard.edu until the monthly meetings approach.

We wish you success with your Senior Project research.

Sincerely,

Simeen Sattar
sattar@bard.edu
IRB Chair

cc: Thomas Cain

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**Appendix E**:  Certificate of completion for "Protecting Human Research Participants"
online training course

## Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that
**Matthew Phelps** successfully completed the NIH Web-based training course
"Protecting Human Research Participants".

Date of completion: 10/16/2016.

Certification Number: 2201205.

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**Appendix F**: Media Article (White Criminal)

The following reading is a news excerpt taken from CNN in May of 2016

**Statistics Show that Violent Crime on D.C. College Campuses is Increasing**

May 20th, 2016

…

But Georgetown and George Washington University are not the only schools with rising crime rates. Police are currently investigating a brutal attack that occurred outside of the Brookland-CUA metro stop in Washington, D.C. This metro stop is the one used by students of the Catholic University of America to access the campus and surrounding area.

The violent and disturbing incident happened around 10 pm, and there is partial footage of the incident from security cameras near the entrance to the station. Upon getting to the top of the escalator leaving the metro station, the Jackson family were suddenly approached by a large individual who had been sitting at a nearby bench. Thomas, Sophia, and their son Steven attempted to continue walking past the individual, but they were quickly blocked by his arm, after which he quickly drew a pistol from his waistband.

According to all three members of the family (and verified by the security footage), the mugger was a tall, white man wearing plain sweatpants and a  plain sweatshirt. The family was unable to recall detailed features of the man, and the security footage is unable to tell investigators much more than their descriptions due to low camera resolution and the distance at which the crime took place.

After drawing the firearm, the individual (a tall, white male) aggressively asked the family for their wallets and phones, to which all three victims complied. Upon receiving these items, the man hit Thomas across the face with the gun and punched Sophia Jackson, taking her necklace. The white male promptly ran in the direction of the University's residential dormitory area. Police were called to the scene shortly after.

Faculty and students at the Catholic University of America have been informed of the incident and warned of the armed individual. Police have so far been unable to locate him. Similar to the crimes discussed earlier, no arrests have yet been made concerning this incident.

Though thoroughly shaken and distressed, Sophia and Steven Jackson have been checked out of the nearby medical center after sustaining only minor injuries during the incident. Thomas Jackson is currently still unconscious in the medical center after sustaining a serious head injury from the blunt trauma with the man's pistol.

These are only a few examples of violent crimes that have occurred in the past few weeks on college campuses in the nation's capitol. Statistics are showing that violent crime in Washington, D.C.'s college campuses has been steadily increasing over the past few years, with an all-time high being reached within the past year.

**Appendix G**: Media Article (Black Criminal)

The following reading is an excerpt taken from an online news article (CNN) in May of 2016

**Statistics Show that Violent Crime on D.C. College Campuses is Increasing**
May 20th, 2016

…

But Georgetown and George Washington University are not the only schools with rising crime rates. Police are currently investigating a brutal attack that occurred outside of the Brookland-CUA metro stop in Washington, D.C. This metro stop is the one used by students of the Catholic University of America to access the campus and surrounding area.

This violent and disturbing incident happened around 10 pm, and there is partial footage of the incident from security cameras near the entrance to the station. Upon getting to the top of the escalator leaving the metro station, the Jackson family were suddenly approached by a large individual who had been sitting at a nearby bench. Thomas, Sophia, and their son Steven attempted to continue walking past the individual, but they were quickly blocked by his arm, after which he quickly drew a pistol from his waistband.

According to all three members of the family (and verified by the security footage), the mugger was a tall, African-American man wearing plain sweatpants and a  plain sweatshirt. The family was unable to recall detailed features of the man, and the security footage is unable to tell investigators much more than their descriptions due to low camera resolution and the distance at which the crime took place.

After drawing the firearm, the individual (a tall, black male) aggressively asked the family for their wallets and phones, to which all three victims complied. Upon receiving these items, the man hit Thomas across the face with the gun and punched Sophia Jackson, taking her necklace. The black male then promptly ran in the direction of the University's residential dormitory area. Police were called to the scene shortly after.

Faculty and students at the Catholic University of America have been informed of the incident and warned of the armed individual. Police have so far been unable to locate him. Similar to the crimes discussed earlier, no arrests have yet been made concerning this incident.

Though thoroughly shaken and distressed, Sophia and Steven Jackson have been checked out of the nearby medical center after sustaining only minor injuries during the incident. Thomas Jackson is currently still unconscious in the medical center after sustaining a serious head injury from the blunt trauma with the man's pistol.

These are only a few examples of violent crimes that have occurred in the past few weeks on college campuses in the nation's capitol. Statistics are showing that violent crime in Washington, D.C.'s college campuses has been steadily increasing over the past few years, with an all-time high being reached within the past year.

**Appendix H**: Shooter Game Script (note that the letters A and L would be randomly switched

between participants)

First slide:

 In this videogame, your task is to shoot any person who is holding a gun (the bad guys) by pressing the LEFT ("A") key on your keyboard (LEFT = A = shoot button).

If a person is holding something other than a gun he is a good guy, and you should press the RIGHT  ("L") key on your keyboard (RIGHT = L = NO shoot button).

You will have less than a second to make each decision.

You will receive points based on your performance.

The first round of the game is for practice.

If you have any questions, call the experimentor now.

Continue if you are ready for the practice round.

Second slide:

This is a PRACTICE SESSION

Reminder:

You need to decide as quickly and accurately as possible to shoot or not to shoot.

1) If the person holds a GUN, you need to SHOOT
Press the LEFT ("A") key on your keyboard

2) If the person holds a HARMLESS OBJECT, do NOT shoot:
Press RIGHT ("L") key on your keyboard.

IMPORTANT: use fingers of different hands for each response key

Third slide:

Get Ready:

Put your index fingers on the A and L keys to get ready

Fourth slide:

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You are done with practice.
Reminder:

You need to decide as quickly and accurately as possible to shoot or not to shoot.

1) If the person holds a GUN, you need to SHOOT
Press the LEFT ("A") key on your keyboard

2) If the person holds a HARMLESS OBJECT, do NOT shoot:
Press RIGHT ("L") key on your keyboard.

IMPORTANT: use fingers of different hands for each response key

If you are ready, start now.

Fifth slide:

 Get Ready:

Put your index fingers on the A and L keys to get ready

Sixth Slide:

THANK YOU FOR PARTICIPATING!

When too slow to respond: TOO SLOW, You lose 10 points

When a hit occurs: Good shot! You win 10 points!

When a miss occurs: You're dead! You lose 40 points!

When a false alarm occurs: You shot a good guy! You lose 20 points!

When a correct rejection occurs: Wise choice! You win 5 points

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**Appendix I** : Explicit measures, demographics, and manipulation check questions

Explicit measures:

1. Please indicate how you would best describe your political affiliation (circle one)

Very liberal    Moderately Liberal    Neutral    Moderately Conservative    Very Conservative

2. Please indicate how much you agree with the following statement: Bard's BEOP and POSSE scholarship programs serve primarily to increase the student body racial diversity

Strongly Disagree    Disagree    Neutral    Agree    Strongly Agree

3. My primary source of news information is (please circle one):

A)Newspaper
B)Television
C)Online news articles (through website of publisher)
D)Online news through secondary publishing website
E)Social Media
E) Radio

4. Please indicate the extent to which you agree with the following statement: In America, income inequality between groups only exists if individuals within certain groups don't work hard

Strongly Disagree    Disagree    Neutral    Agree    Strongly Agree

5. Please indicate your level of awareness of the Black Lives Matter movement

Completely unaware    Vaguely familiar    Neutral/Not sure    Fairly familiar    Very familiar

6. Please indicate your level of sympathy for the Black Lives Matter movement

None      Low        Neutral      High      Very High

7. Please indicate your level of awareness of the All Lives Matter movement

Completely unaware    Vaguely familiar    Neutral/Not sure    Fairly familiar    Very familiar

8. Please indicate your level of sympathy for the All Lives Matter movement

None      Low        Neutral        High      Very High

9. Please indicate your level of awareness of the Blue Lives Matter movement

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Completely unaware    Vaguely familiar   Neutral/Not sure    Fairly familiar    Very familiar

10. Please indicate your level of sympathy for the Blue Lives Matter movement

None      Low      Neutral      High    Very High

For the following 10 questions, please rate your answer on a scale ranging from 1 (strongly disagree) to 9 (strongly agree)

11. Because of today's politically correct standards, I try to appear nonprejudiced toward Black people

1       2       3       4       5       6       7       8       9

12. I try to hide any negative thoughts about Black people in order to avoid negative reactions from others

1       2       3       4       5       6       7       8       9

13. If I acted prejudiced toward Black people, I would be concerned that others would be angry with me

1       2       3       4       5       6       7       8       9

14. I attempt to appear nonprejudiced toward Black people in order to avoid disapproval from others

1       2       3       4       5       6       7       8       9

15. I try to act nonprejudiced toward Black people because of pressure from others

1       2       3       4       5       6       7       8       9

16. I attempt to act in nonprejudiced ways toward Black people because it is personally important to me

1       2       3       4       5       6       7       8       9

17. According to my personal values, using stereotypes about Black people is OK

1       2       3       4       5       6       7       8       9

18. I am personally motivated by my beliefs to be nonprejudiced toward Black people

1       2       3       4       5       6       7       8       9

19. Because of my personal values, I believe that using stereotypes about Black people is wrong

1       2       3       4       5       6       7       8       9

20. Being nonprejudiced toward Black people is important to my self-concept

1       2       3       4       5       6       7       8       9

For the next 3 questions, please rate your answers from 0 (strongly disagree) to 5 (strongly agree)

21. Black people do not have the same employment opportunities that Whites do

Strongly disagree       Disagree        Neutral         Agree           Strongly Agree

22. It is surprising that black people do as well as they do, considering all the obstacles they face

Strongly Disagree       Disagree        Neutral         Agree           Strongly Agree

23. Most blacks are no longer discriminated against

Strongly Disagree       Disagree        Neutral         Agree           Strongly Agree

24. For the final question, please indicate the extent to which you agree with the following statement: I felt afraid while reading the media article

Strongly Disagree       Disagree        Neutral        Agree        Strongly Agree

Demographics:

1.  Please indicate your age
2.  Please indicate your gender
3.  Please indicate your race or ethnicity
4.  Please indicate your current academic year
5.  Please indicate at least one of the academic divisions that your current area of study at Bard is in

Manipulation check:

1. What do you feel the purpose of the study was?
2. Do you feel you were deceived in any way?"
3. If so, how?"
4. What was the race of the criminal in the news article?
5. What happened to the criminal in the news article?

**Appendix J**: Script

Participant enters

"Thanks for coming. You can have a seat."

Participant sits.

Give oral explanation of consent: "Before we continue with the study, it is important that you understand the idea behind informed consent and why it is necessary in research. Unless informed consent is given by a participant, it is unethical to continue a study with that participant. Thus, your participation in this study will only occur if you give your consent. The informed consent form that must be signed in order for you to participate will let you know what the study is about, what your participation will consist of, what your compensation will be, and what any potential risks of participating may be. This is in order to protect the dignity and rights of the participants, as well as their psychological well-being. If one were to participate in research without consenting to it and/or understanding what the study is about and what their participation will entail, it would likely cause distress for the individual. You will not have to do anything you do not wish to do or are not comfortable with, and if you wish to not participate altogether, you may leave at any time with no questions asked and will still receive compensation. If you do not wish to sign the informed consent form, you do not have to do so".

Distribute consent form

"Here's an informed consent form. Take as long as you want to read it and then if you still wish to participate please sign it and write today's date. Be sure to let me know if you have any questions".

Wait for participant to read/sign form

Distribute media article

"This study concerns the effects of strong emotions on cognitive performance. I'm giving you a short news article that was printed from offline. Take as long as you need to read it and let me know when you're done".

Wait for participant to read article.

"After reading the emotional material, you're going to perform a cognitive task that requires you to pay very close attention to detail. This study is investigating the effects of reading emotionally stimulating material on one's ability to perform a cognitive task, specifically the ability to focus and pay close attention to small details. The task is a game where a series of images is going to appear on the screen with a number of individuals. Only shoot the people who are holding a gun by pressing the either the A or the L key (the game will specify which key). If the person is holding anything that's not a gun, then press either the A or L key instead to not shoot them. You will have less than a second to make each decision, so please try to stay focused and pay close attention while playing. You will be receive points based on your performance, which will serve as a representation of your ability to pay attention to detail".

Wait for participant to complete the game.

"The last part of this study is a set of questions for you to answer on the computer. Take as long as you want to answer the questions. If you don't want to answer a specific question or are unsure, you may skip it by pressing either the "neutral" or "N/A" option, depending on which option is available. Remember that your answers will remain anonymous"

Wait for participant to complete answering questions

Distribute debriefing

"Here is a debriefing that explains this study to you in full. Take as long as you want to read it and feel free to ask any questions. Thank you for participating"

Wait for participant to read debriefing.

Answer any questions.

Participant exits.

MEDIA AND SHOOTER BIAS

**Appendix K**: Informed Consent Form

**Experimental Research Informed Consent Form**
**Psychology Program**
**Bard College**

I understand that for my participation in this study, I will receive both baked goods and a chance to win one of two $90 Amazon gift cards. I understand that I may choose to not participate in this study at any time for any reason. If I do choose to participate, I understand that my participation will take up to an hour. The topic of this study concerns emotions and their effects on cognitive functioning. Although there are no physical risks to this study, there is a chance that participants may begin to find the tasks tedious or stressful. This experiment requires reading an emotional piece of media writing, and some participants may be experience stress at what occurs in the article. Additionally, participants may discover something about themselves from their data that they are not happy with. I understand that should the latter occur, I may discuss the research with Matthew Phelps (443-852-1141 or mp7888@bard.edu) or consult with Bard's Health & Counseling Services (845-758-7433 or counselingservice@bard.edu).

Benefits of my participation in this study include a better understanding of cognitive functioning as it relates to emotion, and a better understanding of how psychological research is conducted in an experimental setting. This experiment consists of reading a short news article published recently that contains emotional material, before performing a cognitive task. The cognitive task will be testing reaction time to visual stimuli in the form of a "shooter game". The final part of the experiment will consist of a set of questions to be answered on the computer. I understand that should I feel uncomfortable answering any of these questions, I do not have to answer and will not be penalized. I understand that if I choose to not participate, there will be no penalty and I will still receive my compensation.

I understand that the results of the study will be reported to me upon my request once they are available, and that I may choose to have my data discarded from the data pool while still receiving my compensation. I understand that a copy of this consent form may be given to me upon my request. My name will not be included on the electronic questionnaire to insure anonymity, and all of my data will remain anonymous and confidential. A number was assigned to my name upon my arrival and all my results and/or information will be linked to this number instead of my name. All previous information linking any of my information to my name will be thrown away/deleted, insuring that my information and results remains confidential. In addition, all the information from my participation will be kept on a computer that is password protected

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in a room that can only be accessed (with a key) by the primary researcher. I understand that experimental research is sometimes designed so that the full intent of the study is not clear until after I have participated, when I will be given a full explanation. I agree to not inform other potential participants about what the experiment consists of until the entire study has been completed. I am at least 18 years old.

I understand that if I have any questions about this study, I can contact Matthew Phelps at 443-852-1141 or mp7888@bard.edu. I understand that if I have any questions about the Bard Psychology Program, I can contact Dr. Tom Cain (visiting professor and advisor on this study) at tcain@bard.edu. I understand that if I have any questions about my rights as a participant, I can contact the Bard College IRB (Institutional Review Board) at irb@bard.edu


Name of participant(Please Print):

Signature of participant:                                              Date:

Email of participant:

Phone number of participant:

Signature of primary investigator:                          Date:

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**Appendix L**:  Debriefing Form

**Debriefing**
**Psychology Program**
**Bard College**

Thank you for participating in this study! This experiment utilized deception in able to collect more accurate data from participants. Although we told you that the study was about emotions and their effect on cognitive performance, the actual topic of this study is implicit racial bias, specifically the shooter bias. The shooter bias is a phenomenon that has been studied for years, in which participants are more likely to shoot (by pressing a specific button on a keyboard) armed targets in a shooter game (used to mimic the experience of a police officer in the field) when the target is black than when the target is white, and are also more likely to not shoot (by pressing a different button on a keyboard) unarmed targets when the targets are white than when they are black. The original shooter bias study was conducted in 2002 by Correll et al, with the same images of black and white individuals that you saw in the shooter game that you completed.

This study examined the effects of the media, specifically a perceived online news articles, on this shooter bias. Research in the past has suggested that black and white individuals are represented differently in the media, with black individuals being more frequently portrayed in a more negative light through dehumanization and/or different wording that suggests they are more violent and dangerous than white individuals. The goal of this study was to investigate whether being exposed to what one believed to be an online news article depicting white or black individuals committing a crime directly before playing a shooter game would influence the shooter bias. The news article about the crime committed in Washington, D.C. was not actually published by CNN and was instead written by the primary researcher (Matt Phelps) with the intent being to imitate a real media article in order to observe any effects that the perceived media impact (the belief that you had just read a media article depicting either a white or black individual committing a crime) had on the shooter bias.

You were randomly sorted into one of two conditions for this study: white perpetrator or black perpetrator. Participants in the white perpetrator group read an article with a white individual perpetrating the crime, while participants in the black perpetrator condition read an article with a black perpetrator. The deception was informing participants that the study was about reading emotional information before performing a cognitive task. It was used so that participants would hopefully be unaware (at least for a while) during the shooter game that the study was studying implicit racial bias. If participants had

been aware of the purpose of the study from the beginning the whole time, it is likely that they would play the game slightly differently and change the results in a way that we would no longer truly be measuring an implicit reaction. You need not be concerned that you believed the deception or that your results demonstrate a shooter bias; research on this topic has been conducted for over a decade now with consistently similar results in terms of a shooter bias being present among individuals of varying races and ethnicities. Deception has been used in psychological research for a very long time (though it is not always used), and falling for the deception does not suggest any specific weakness or gullibility on your part. These implicit biases that tests like the shooter task are investigating exist everywhere and aren't necessarily indicative of explicit biases (biases that you are aware of). Should you feel uncomfortable with this information, you are encouraged to contact Bard's Health & Counseling Services (845-758-7433 or counselingservice@bard.edu). Additionally, feel free to discuss the research with the primary researcher Matt Phelps (443-852-1141 or mp7888@bard.edu) or his project advisor Tom Cain (tcain@bard.edu).

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**Appendix M**: Contact Information

**Bard College**
**Psychology Program**
**Contact Information**


Once again, thank you for participating! If you wish to contact someone to discuss anything about this research and/or ask any questions, feel free to reach out to any of the contacts below.

If you wish to speak about the research that you participated in, you may contact Matthew Phelps (primary investigator) at mp7888@bard.edu or 443-852-1141.

If you wish to speak about the Bard Psychology Program, you may contact Dr. Tom Cain (visiting psychology professor and advisor on this study) at tcain@bard.edu

If you wish to speak to someone about your rights as a research participant, you may contact the Bard College Institutional Review Board (IRB) at irb@bard.edu