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Would they save me, too? Victim race recall when the hero is Black vs. White and its influence on expectations of reciprocity

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Abstract

Bounded Generalized Reciprocity (BGR) hypothesizes that expectations of reciprocity provide the foundation for ingroup favoritism and outgroup derogation. These expectations can be influenced by interaction with outgroup members, including vicarious interaction through media. This analysis examines how non-Black participants view helping behavior by Black individuals, and how their interpretations of helping scenarios influence intergroup attitudes. Participants (n= 211) were randomly assigned to view a news clip in which a Black or White hero saves someone White, or whose race was not portrayed. When viewing a clip with an ambiguous victim, participants were significantly more likely to report that the victim was not White when the hero was Black – indicating an expectation of helping behavior between Whites and Blacks. However, when a Black hero saved an unambiguously White victim, participants were more accurate in their recall. Victim race recall and hero race interacted to predict future reciprocity expectations, such that Black heroes saving a victim recalled as White (regardless of accuracy) resulted in increased positive reciprocity expectations. Positive reciprocity then predicted motivation to avoid prejudice and prejudiced attitudes. These results have implications for how media depictions of helping behaviors may impact intergroup beliefs and attitudes.

There have been many attempts to explain how and when media portrayals will influence intergroup attitudes. In particular, many theoretical paradigms focus on ways that media depictions of intergroup helping and cooperation might encourage positive intergroup attitudes. For example, under the vicarious contact paradigm, which suggests that mediated contact with social outgroups can approximate real-world contact, the manipulation of positive interactions can be defined as showing, "empathy, perspective-taking, cooperation, or affection" (Joyce & Harwood, 2014, p. 632), and these interactions have been correlated with more positive intergroup attitudes. Within the realm of such vicarious contact is the possibility that a specific kind of belief will be influenced by positive intergroup interaction – specifically, expectations of intergroup reciprocity.

Intergroup reciprocity is a concept coming out of Bounded Generalized Reciprocity (BGR; Yamagishi & Kiyonari, 2000). Bounded reciprocity holds that people make choices to grant more special favors (i.e., be more kind, allocate more rewards, be more cooperative) to ingroup members than outgroup members, or to random strangers (Balliet, Wu & De Dreu, 2014; Romano, Balliet & Wu, 2017). The theory is premised on both ingroup favoritism and reciprocity. Ingroup members are assumed to share the same goals and aims and consequently are more trustworthy than those from outside of their group (Balliet, Wu & De Dreu, 2014; Romano, Balliet & Wu, 2017; Yamagishi, Jin &

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Kiyonari, 1999; Yamagishi & Kiyonari, 2000). The sharing of goals means that people expect ingroup members to be more likely to reciprocate positive actions, such as repaying someone for helping them (i.e., positive reciprocity), compared to outgroup members, where shared goals are less likely (Balliet, Wu & De Dreu, 2014). However, when ingroup members fail to repay others (i.e., cheaters) or engage in bad deeds they are punished (i.e., negative reciprocity), as a deterrent for poor behavior (Tusicisny, 2017). The likelihood of an ingroup partner cooperating is bound by the fact that both members have the mutual goal of improving the image of the group. It is also reciprocal in that persons have been shown to have the "illusion of control," meaning they show a greater willingness to help ingroup members, even when they have no basis upon which to believe their actions will be reciprocated (Karp, Jin, Yamagishi & Shinotsuka, 1993).

If people are always focused on the group, then an issue for BGR involves the impact of the individual on perceptions of group-based reciprocity. In other words, can an individual group member's cooperative behavior influence the reputation of the entire group regarding reciprocity expectations and cooperation? Some research has emerged that extends the "bounded" aspect of BGR, suggesting that reciprocity can be based in an individual's reputation as well as the group's reputation (Balliet, Wu & De Dreu, 2014; Mifune, Hashimoto & Yamagishi, 2010; Romano, Balliet & Wu, 2017). Unbounded reciprocity holds that group membership alone is insufficient in explaining cooperative behavior. Individuals are motivated by self-interest and will cooperate across groups when it fits their needs. For example, cooperation with particular ingroup members tends to disappear when it is found that ingroup members are unhelpful (Velez, 2015; Yamagishi & Kiyonari, 2000). However, cooperation with outgroup members will increase when it is shown that outgroup members have previously been helpful and trustworthy. In short, individuals do not indiscriminately give preferential treatment to ingroup members, rather, if an outgroup member demonstrates positive reciprocity, then those positive behaviors will be reciprocated. Therefore, reciprocity – bounded and unbounded – is hinged on group expectations and bias.

Bounded reciprocity holds that individuals within groups hold similar destinies and goals and are therefore more likely to reciprocate positive acts than are outgroup members. Unbounded reciprocity holds that, in addition to group goals, individual goals are at stake. People will cooperate with others – regardless of that other person's group – provided that person is judged as likely to return the favor and help them reach their end goal. In terms of countering outgroup bias, a critical question becomes whether an individual outgroup member who is perceived as cooperative will influence expectations of reciprocity toward that outgroup.

Exemplification of reciprocity expectations through media

Exemplification theory involves the transference of the traits of an exemplar (e.g., a particular media character) to the exemplified group, typically via exposure to multiple exemplars over time (Zillmann, 1992; Zillmann, Perkins & Sundar, 1992). Thus, in the context of reciprocity, exposure to intergroup helping behaviors and examples of intergroup reciprocity by outgroup members in media should change the expectations of future reciprocity by members of those groups. Although exemplification processes are generally expected to happen across multiple exemplar exposures, the effects of exemplification can occur in fewer instances through the formation of an illusory correlation. The work on illusory correlations suggest that a highly distinctive behavior performed by an outgroup member can influence perceptions of the outgroup (Hamilton & Gifford, 1976). Within the research on illusory correlations, behavior is usually made distinctive because of infrequency, as well as the "rarity" of the group member from the perspective of the viewer. A Black person helping someone who fell on the subway tracks, as was the context in the present study, should qualify because of the (hopefully) infrequent occurrence of a person falling on the track combined with the relative distinctiveness of Black Americans from the perspective of non-Blacks. Importantly, illusory correlations can occur (and endure) based on a single exposure (Risen, Gilovich & Dunning, 2007), and once formed can be hard to change (Sherman, Hamilton & Roskos-Ewoldsen, 1989).

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Part of what contributes to the distinctiveness of Black Americans is that direct intergroup interactions and friendships between Black and White Americans remain relatively rare (Smith, McPherson & Smith-Lovin, 2014), even in the age of unlimited networks on social media (Hofstra, Corten, Van Tubergen & Ellison, 2017; Wimmer & Lewis, 2010). Most of the work in this area has focused on racial and ethnic homophily in social relationship networks. For example, recent network analysis suggests that social networks are largely racially homogenous, and that is the case whether considering in person or social media networks – especially for people who are members of ethnic majority groups (Hofstra, Corten, Van Tubergen & Ellison, 2017). Thus, the media remain an important avenue for groups to gain knowledge about other racial groups (Holt, 2013) and thus a likely source of exemplification and illusory correlation. Research based on BGR in the context of video games, found that cooperation with an outgroup member in a team-based video game increased pro-social behavior toward that person later (Velez, 2015), and also increased pro-social behavior toward other members of the outgroup (Velez, Mahood, Ewoldsen, & Moyer-Guse, 2014). This suggests that mediated intergroup helping behaviors, when they do occur, can influence BGR processes.

Unfortunately, in the context of intergroup helping behaviors, there is underrepresentation in media of Blacks in positive roles – such as people engaging in heroics, generous benefactors, awardees, and community leaders (Hochschild et al., 2018). This means that there are likely few instances of exemplification and illusory correlation that would influence reciprocity expectations of Blacks from non-Black audiences in a positive direction. But, what instances do exist may still have an important impact. However, this is reliant on the assumption that non-Blacks correctly process and remember those exemplars. Exemplification is based in recall of relevant exemplars from memory, and the availability and accessibility of such exemplars – and the accuracy of their recall – are key for determining exemplification's influence (Zillmann, 1992). This is likely to be easier said than done in the context of racism and media portrayals as the following section will explain.

Memory for Black exemplars

There is a strong history of research on media and portrayals of Black Americans that suggest non-Black Americans tend to expect negative portrayals – and misremember portrayals that do not conform to expectations. Heavy news users are more likely to report prejudiced attitudes toward and endorse negative stereotypes of Blacks (Dixon, 2008a, 2008b, 2008c; Dixon, Bauer & Josey, 2017; Ellithorpe & Ewoldsen, 2016). Exposure to crime news featuring racial cues is also associated with harsher perceptions of the guilt and personal responsibility of the perpetrator, as well as support for harsher punishments for crime such as the death penalty (Dixon & Azocar, 2007; Hurley, Jensen, Weaver & Dixon, 2015; Mastro, Lapinski, Kopacz & Behm-Morawitz, 2009). Other work has found that perceived criminality of Blacks on TV is associated with stereotypical beliefs, as well as reduced support for affirmative action policies (Ramasubramanian, 2010). Mixed effects have also been found for news obtained online and via social media (Dixon, 2017; Intravia & Pickett, 2019).

The sum influence of all of this negative content is what appears to be a cultural expectation of negative portrayals of Blacks. While many models of memory focus on the activation of concepts of memory, inhibition of information that is discordant with people's beliefs play an important role in cognitive processing within constraint satisfaction approaches to memory. Constraint satisfaction models of memory predict that ambiguous information that is at odds with people's strongly held beliefs and expectations are likely to be inhibited (Ewoldsen, Hoewe, & Grady, 2022; Kunda & Thagard, 1996). This inhibition of information at odds with people's expectations can occur both when ambiguous information is being encoded and later when it is recalled (Ewoldsen et al., in press). Consistent with the constraint satisfaction approach, people misremember information in a stereotype consistent manner. For example, when recalling criminal activity they had witnessed earlier, people were more likely to misremember violent crimes perpetrated by Whites as being committed by Blacks (Oliver, 1999; Oliver & Fonash, 2002). Crucially, Oliver and Fonash (2002) found that participants

were more likely to report misremembering a violent criminal as Black, regardless of their actual attitudes – indicating that there is a cultural expectation about Blacks in media portrayals that may operate independently of people's actual racial attitudes. Relatedly, participants in a mock trial context misremembered a defendant's race as consistent with racial stereotypes for the type of crime committed (Skorinko & Spellman, 2013). When presented with a crime news story where the race of the perpetrator was not identified, participants reported a high perceived likelihood that the criminal was Black; additionally, heavy news viewers were more likely to assume the arresting officer was White, and to have positive attitudes toward the officer (Dixon, 2007). Criminality is not the only context in which viewer memory for details of a news story changes depending on race; in one previous study depicting a stereotypical "welfare queen" as Black or White, participants were much more likely to remember the Black exemplar correctly than they were the White exemplar (80% accurate vs. less than 50% accurate), indicating that memory was consistent with stereotypical expectations rather than reality (Gilliam, 1999).

Based on this previous research on stereotypical expectations and memory, in cases of interracial helping and reciprocity, might people be likely to misremember whether Black heroes helped an outgroup member? Much of this research was conducted decades ago, so it remains to be seen whether such instances of mis-memory would be replicated in the present day. The current cultural context is in a time when Black Lives Matter and other social justice movements have been bringing issues of prejudice and discrimination against Black Americans to the forefront of public consciousness for nearly a decade – since the 2012 death of Trayvon Martin and subsequent acquittal of his killer (Howard University School of Law, 2021). It is possible that greater public salience of social justice issues and discrimination experienced by Black Americans would be associated with a reduction in these biases in memory. This study will test for whether memory of interracial helping behaviors conducted by Black compared to White heroes in news stories will differ under situations of clarity compared to ambiguity. Additionally, we will test whether memory for interracial helping behaviors will influence expectations of future interracial reciprocity and attitudes toward Blacks by non-Blacks.

The present study and hypotheses

The present experiment exposes participants to news stories in which a hero saves a person who has fallen on subway tracks. Whether the hero is Black or White, and whether the person they help is depicted as White or is left ambiguous, was varied between participants. As outlined below, this experiment is interested in the effect of this single exposure to a helping behavior by a Black hero influences participants' expectations of reciprocity and the influence of these expectations on racist attitudes.

Prior research on the influence of stereotypes and stereotype expectations on perception, and Whites' general low expectation of reciprocity from Blacks, suggests that memory for *the race of a person depicted as receiving help* will vary depending on whether the hero who helped them is Black or White, as well as by the direct cues provided about their race. We expect that participants overall will be less likely to remember that the victim was White when the hero was Black compared to when the hero was White – indicating a baseline for lower expectations of helping for Blacks in comparison to Whites. However, we also expect an interaction effect of ambiguity. Specifically, when the race of the person being helped is ambiguous, participants will be less likely to report that they thought the victim was White when the hero was Black, compared to when the hero was White – further exacerbating the default expectations of helping behaviors. However, when the person helped is unambiguously White, we predict there will be no difference in memory by whether the hero was Black or White. To test this supposition, we present the following hypothesis:

H1: Participants who view a Black hero saving an ambiguous victim will be less likely to say the victim was White than participants who view a Black hero saving a White victim or a White hero in either victim condition.

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How the helping behavior is remembered – as interracial or not – should influence expectations of reciprocity in the future. If participants report they saw a Black hero save a White person, it could increase their expectancies that such interracial helping behaviors would occur again in the future. However, if they thought the victim was not White, or if the hero was White, regardless of the victim's race, there should not be an increase in expectancies for future positive actions by Blacks regarding helping Whites. The important thing is what participants *thought* they saw of the victim's race – not what they actually saw. Interpretation of the media content in the context of prior expectations for behavior is key. In this study, we include both positive reciprocity (expectation of repayment in the future for a helping behavior) and negative reciprocity (expectation of future retribution for a harmful behavior). Positive reciprocity is the more key outcome variable in the present study, because positive reciprocity is relevant to the helping behaviors presented to participants. There is no wrong depicted in the study, so negative reciprocity would likely be less relevant or salient when participants are making judgments. To test this possibility we hypothesize that:

H2: Participants who view a Black hero, and recall a White victim, will report more positive reciprocity for future Black interracial behaviors than participants who view a Black hero and do not recall a White victim, or participants who viewed a White hero regardless of their recall of the victim's race.

The major contribution of BGR is the prediction that reciprocity expectations are a mechanism by which prejudice and discrimination can be explained (Yamagishi, Jin & Kiyonari, 1999). Reciprocity expectations should therefore have downstream effects on attitudes toward Black people. A relationship between reciprocity expectations and attitudes in the context of media exposure has been found in previous research (Ellithorpe & Ewoldsen, 2016; Rheu, Ewoldsen, Ellithorpe, Yao & Sethi, 2019). However, it should be noted that this previous research in the media context found an important mediating role for motivation to avoid prejudiced attitudes between reciprocity and attitudes. Motivation to avoid prejudice involves internal (e.g., egalitarian values) and external (e.g., social pressure) reasons why people would prefer not to outwardly espouse prejudiced attitudes even if they hold them (Plant & Devine, 1998). We therefore included motivation to avoid prejudiced attitudes, as well as attitudes toward Black people, as downstream outcomes of reciprocity expectations in our next hypothesis:

H3: Increased positive reciprocity expectations will be associated with increased positive attitudes toward Black people, mediated by increased motivation to avoid prejudice.

Thus far, the discussion of reciprocity has been focused on one side of the coin regarding helping behaviors (positive reciprocity). There is also negative reciprocity (the expectation that group members will engage in harmful, retaliatory behaviors). We ask this as a research question because research has emerged showing negative reciprocity might be perceived as more fair by observers than positive reciprocity (Shaw, Barakzai & Keysar, 2019). This is due to a belief that retribution for a wrong could be "justified," or otherwise necessary. There is also the possibility that there will be a concomitant reduction in negative reciprocity along with an increase in positive reciprocity. If there is an effect of clip showing helping behavior on positive but not negative reciprocity, it would indicate discriminant validity in the two types of reciprocity, as well as precision in the stimuli. Because a specific direction for negative reciprocity is unclear, we offer a research question:

RQ1: Will recall of the victim's race and the hero's race interact to predict expectations of negative reciprocity?

Finally, the relationship between media messages and racism does not operate in a vacuum. Several studies show that prior attitudes, motivation to avoid prejudice, and expectations can influence the interpretation of media messages so the person's response to media messages is consistent with their

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preexisting beliefs. In the context of entertainment narratives, prior racist attitudes influenced participants' interpretation of the narratives (Eno & Ewoldsen, 2010). Racial attitudes also matter in the news coverage of real-life events. One recent study examined news article framing of the 2007 Jena Six incident – in which nooses were hung from a tree after a Black student sat beneath a tree traditionally reserved for White students (L. Holt, Ellithorpe & Ralston, 2017). The study found that negative previous attitudes toward Blacks, combined with low motivation to appear non-prejudiced, reduced Whites' perceptions of the quality of the news story. Moreover, persons who perceived the quality of the story about the incident was low, also interpreted what happened during the incident as the fault of Black students who were engaged in a fight after the noose was hung, more than they felt the fault fell with racially charged atmosphere that led to the noose being hung in the first place. While we do not have specific expectations for the influence of prior attitudes and expectations of reciprocity in the present study, we include them as covariates in analysis. This is in line with Oliver and Fonash (2002), who found biased memory effects, regardless of participants' prior attitudes.

Method

Participants

This study queried 232 adult participants from the U.S. who were recruited through online survey company Dynata. Of those, 111 (47.84%) were female, and the average age was 51.56 years (*SD* = 16.35). The racial and ethnic representation in the sample was 177 (76.29%) White, 26 (11.21%) Asian or Pacific Islander, 13 (5.6%) Hispanic, 9 (3.88%) multiracial, 4 (1.72%) Native American, and 3 (1.29%) reported "other" or "prefer not to disclose." This final sample came from an initial sample of 1,213 who completed the part 1 survey (described below). All participants who completed the part 1 survey were invited to participate in part 2. Of those, 284 returned for the part 2 survey and experiment; 27 failed an attention check embedded in a scale measure ("to show that you are paying attention, please select '0'") and were ejected from the study (Peifer & Garrett, 2014), and 25 spent less than one minute on the page with the video stimulus and were removed from analysis for nonparticipation, leaving the total at 232 participants. It was the a priori intention to also remove participants who self-identified as Black or African American from this analysis; however, all Black or African American participants who participated in part 2 were removed during the attention check process (*n*= 3). The decision to remove Black participants was due to the focus of this study on perceptions of outgroup reciprocity behavior likelihood toward the ingroup, which is the crux of BGR. Removal of participants was equal by condition; final samples were White hero/White victim (*n*= 57), White hero/ambiguous victim (*n*= 58), Black hero/White victim (*n*= 59), Black hero/ambiguous victim (*n*= 58).

Design and procedure

This was a two-part online study. Participants completed part 1 with measures of reciprocity beliefs, internal and external motivation to avoid prejudice, attitudes toward Blacks, and demographics.[1] One week later, they completed part 2 with the experimental manipulation, followed by recall of the race of the victim, posttest measures of reciprocity expectations, internal and external motivation to avoid prejudice, and attitudes toward Blacks. The delay of 1 week was to avoid priming and demand effects. Black/African American participants were not asked to answer questions about racist attitudes or motivation to avoid prejudice in order to reduce participant experiences of harm due to exposure to statements of prejudice.

The experiment was a 2 (hero race: White, Black) by 2 (victim race: White, ambiguous) between-subjects design with random assignment. There was a total of eight videos, two per condition. All videos were short news clips (ranging from 1 m 31 s to 2 m 35 s) covering a hero selflessly saving someone who fell onto subway tracks. In all cases, the hero was interviewed on camera; for half of the participants, the hero was White and for the other half the hero was Black. To manipulate the victim's

race, half of the participants saw a clip where the victim was clearly shown and was White, while the other half saw a clip where the victim was not shown, making their race ambiguous. Before watching the clip, participants were asked to watch a short test video of soundwaves and to only proceed if their video and sound were working.

After watching the clip, participants filled out a measure of emotional responses (Oliver, Hartmann & Woolley, 2012) as a delay activity before being asked what race or ethnicity they remembered the victim in the story being. After this, they answered the same scales for motivation to avoid prejudice, reciprocity, and attitudes; the focus of the present study is reciprocity expectations, especially positive reciprocity (i.e., the belief that Black people are likely to help White people).

Measures

In these studies, we report all measures, manipulations and exclusions. Sample size was determined before any data analysis.

Victim race recall

Participants responded to the prompt, "What race/ethnicity was the person saved by the hero in the video you just watched?" Response options were "White," "Black or African American," "American Indian or Alaskan Native,," "Asian" "Native Hawaiian or Pacific Islander," "Hispanic or Latino," and "Middle Eastern." Those who selected White (n= 93) were placed into their own category; all other responses were combined into a "Don't know/other" category (n= 139). There were not enough participants who selected a specific racial category to justify separating them out; American Indian or Alaskan Native and Asian were selected by two participants each, four participants selected Hispanic or Latino, and 17 participants selected Black. The remaining participants selected "other." The victim race recall measure was coded as a dichotomous measure, White as one (n= 93, 40.09%) and Don't Know/Other as zero (n= 139, 59.91%).

Reciprocity expectations

Reciprocity expectations are measured with subscales for positive and negative reciprocity; each are five items measured on a one (strongly disagree) to seven (strongly agree) scale (Rheu, Ewoldsen, Ellithorpe, Yao & Sethi, 2019). These scales were repeated in part 1 and part 2 [part 1 positive, M= 3.85, SD = 1.09, Cronbach's α = .87; part 1 negative, M= 2.74, SD = 1.18, Cronbach's α = .87; part 2 positive, M= 4.17, SD = 1.05, Cronbach's α = .89; part 2 negative, M= 2.52, SD = 1.20, Cronbach's α = .86].

For full disclosure of the study design, we also included an exploratory measure of perceived reciprocity norms ("most people like me believe that Black people will go out of their way to help a White person") (M= 7.01, SD = 2.77) for positive reciprocity norm and "most people like me believe that Black people will go out of their way to harm a White person" (M= 4.02, SD = 2.80) for negative reciprocity norm. The positive reciprocity norm was moderately correlated with positive reciprocity expectations, r= 0.38, p< .001, and the negative reciprocity norm was moderately correlated with negative reciprocity expectations, r= 0.30, p< .001. However, this measure was not part of the hypotheses nor included in the present analysis, as it was intended as a pilot exploration of the measure for possible use in future research.

Motivation to avoid prejudice

There are two subscales to motivation to avoid prejudice toward Black people (Plant & Devine, 1998). Internal motivation (5 items, 0 – strongly disagree to 10 – strongly agree) measures egalitarian beliefs, while external motivation (5 items, 0 – strongly disagree to 10 – strongly agree scale) captures inhibition of racist behaviors to avoid being labeled a racist. These scales were repeated in part 1 and part 2 [part 1 internal, M= 7.63, SD = 2.16, Cronbach's α = .79; part 1 external, M= 4.00, SD = 2.54, Cronbach's α = .86; part 2 internal, M= 7.73, SD = 2.17, Cronbach's α = .85; part 2 external, M= 4.90, SD = 2.52, Cronbach's α = .85].

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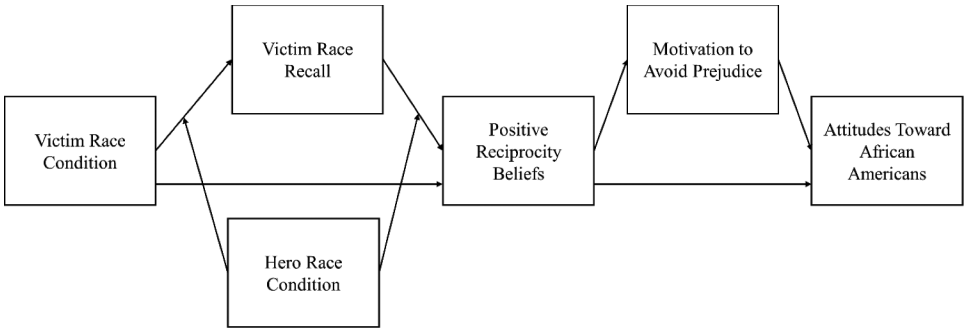

Figure 1. Hypothesized model. NOT shown: Part 1 measures of attitude, reciprocity, and motivation to avoid prejudice as covariates; direct effects from victim race, hero race, and victim race recall to motivation to avoid prejudice and attitudes.

Attitudes

Racial attitudes were measured using the positive and negative attitudes toward Blacks scale (Katz & Hass, 1988), which has 10 items in each of the positive and negative subscales measured on a 0 (strongly disagree) to 10 (strongly agree) scale. These scales were repeated in part 1 and part 2 [part 1 positive, M= 5.22, SD = 2.07, Cronbach's α = .83; part 1 negative, M= 4.71, SD = 1.98, Cronbach's α = .83; part 2 positive, M= 5.28, SD = 2.04, Cronbach's α = .86; part 2 negative, M= 4.76, SD = 1.98, Cronbach's α = .87].

Statistical analysis

The main analysis Figure 1 was conducted using generalized structural equation modeling (gsem) in Stata 14, because it allows for a mix of linear and logistic regression. No fit statistics are reported because gsem does not provide fit statistics. The interactions were probed using logistic regression for the recall outcome measure and OLS regression for the positive reciprocity measure. Gsem coefficients reported are unstandardized betas; logistic regression coefficients are odds ratios. The hypothesized model is that hero race (coded 0 for White hero and 1 for Black hero) and victim race (coded 0 for White victim and 1 for ambiguous victim) would interact to predict victim race recall; specifically, we predicted that participants would be less likely to remember the victim as White in the ambiguous condition when the hero was Black. Victim race recall interacted with hero race to predict part 2 reciprocity expectations; we predicted that participants remembering a Black hero helping a White victim would result in more positive reciprocity than participants remembering a Black hero helping a nonwhite victim, or a White hero in any victim condition. Reciprocity then predicted internal and external motivation to avoid prejudice, which predicted positive and negative attitudes. Part 1 measures of reciprocity, motivation to avoid prejudice, and attitude are included as a covariates in this analysis in order to control for prior attitudes, motivation to avoid prejudice, and expectations; however, the overall pattern of results does not change regardless of their inclusion. Participant age, sex, and self-identified race and ethnicity are also included as covariates; prior research has found differences by racial and ethnic identity in responses to interracial interaction (Kim & Harwood, 2020). Full statistical results can be found in Table 1 (for recall and reciprocity outcomes) and Table 2 (for motivation and attitude outcomes).

Results

A manipulation check for accurate memory of the hero's race in the clips suggested that most participants (n= 211; 90.95%) correctly identified the racial identity of the hero in their clip (response options White, Black, don't know). Participants who answered the manipulation check incorrectly

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Table 1. Model results from gsem path analysis. Note: R^2 obtained from individual models; pseudo-R^2 reported for logistic model. For ease of interpretation, significant results ($p < .05$) are bolded. Whites are the comparison group for racial identity analysis.

	Victim Race Recall		Positive Reciprocity Expectations		Negative Reciprocity Expectations	
	OR	95% CI	*b*	95% CI	*b*	95% CI
Hero race	2.85	1.19, 6.78	−0.26	−0.52, 0.01	0.11	−0.18, 0.39
Victim race	0.54	0.22, 1.31	0.05	−0.18, 0.28	−0.05	−0.30, 0.20
Hero race * Victim race	0.08	0.02, 0.33	–	–	–	–
Victim race recall	–	–	−0.28	−0.57, 0.01	−0.10	−0.42, 0.22
Victim race recall * Hero race	–	–	0.67	0.26, 1.09	−0.21	−0.67, 0.24
Positive reciprocity (part 1)	0.65	0.99, 1.48	0.54	0.42, 0.65	−0.10	−0.23, 0.02
Negative reciprocity (part 1)	1.04	0.83, 1.30	0.01	−0.10, 0.11	0.53	0.41, 0.65
Internal motivation (part 1)	1.04	0.85, 1.28	0.02	−0.04, 0.08	−0.11	−0.17, −0.04
External motivation (part 1)	1.01	0.87, 1.18	−0.02	−0.07, 0.02	0.01	−0.04, 0.06
Positive attitudes (part 1)	1.21	0.99, 1.48	0.01	−0.05, 0.07	−0.04	−0.10, 0.03
Negative attitudes (part 1)	1.04	0.83, 1,30	−0.03	−0.10, 0.04	0.07	−0.01, 0.15
Age	0.99	0.97, 1.01	0.00	−0.00, 0.01	0.00	−0.00, 0.01
Sex	1.70	0.83, 3.48	0.19	−0.03, 0.41	0.12	−0.11, 0.36
Racial identity						
Asian/Pacific Islander	0.51	0.16, 1.56	−0.09	−0.42, 0.25	0.48	0.11, 0.85
Hispanic	0.28	0.06, 1.38	−0.18	−0.67, 0.32	−0.40	−0.94, 0.15
Native American	0.32	0.02, 6.38	−0.93	−1.75, −0.10	0.44	−0.47, 1.35
Multiracial	1.90	0.33, 10.81	0.38	−0.17, 0.93	0.68	0.07, 1.29
Other/prefer not to disclose	0.85	0.01, 116.30	−1.04	−2.48, 0.41	0.56	−1.04, 2.15
R^2	.20		.53		.57	

Table 2. Model results from gsem path analysis, continued. Note: R^2 obtained from individual models. For ease of interpretation, significant results ($p < .05$) are bolded. Whites are the comparison group for racial identity analysis.

	Internal Motivation		External Motivation		Positive Attitudes		Negative Attitudes	
	b	95% CI	*b*	95% CI	*b*	95% CI	*b*	95% CI
Hero race	0.40	−0.05, 0.85	0.52	−0.15, 1.20	0.06	−0.31, 0.44	0.23	−0.14, 0.59
Victim race	−0.21	−0.61, 0.18	−0.02	−0.61, 0.57	0.32	−0.01, 0.64	−0.19	−0.51, 0.13
Victim race recall	−0.22	−0.73, 0.29	0.06	−0.70, 0.83	0.03	−0.39, 0.46	0.46	0.05, 0.88
Positive reciprocity (part 2)	0.52	0.28, 0.75	0.20	−0.17, 0.57	−0.01	−0.21, 0.19	−0.10	−0.32, 0.10
Negative reciprocity (part 2)	−0.07	−0.28, 0.14	0.09	−0.23, 0.41	0.14	−0.03, 0.32	0.17	−0.00, 0.35
Internal motivation (part 2)	–	–	–	–	0.12	0.01, 0.23	0.01	−0.10, 0.12
External motivation (part 2)	–	–	–	–	0.03	−0.04, 0.11	0.05	−0.02, 0.12
Positive reciprocity (part 1)	−0.30	−0.54, −0.06	−0.26	−0.62, 0.10	−0.03	−0.22, 0.17	0.03	−0.16, 0.23
Negative reciprocity (part 1)	−0.02	−0.24, 0.19	−0.13	−0.46, 0.20	−0.10	−0.28, 0.08	−0.01	−0.19, 0.16
Internal motivation (part 1)	0.68	0.57, 0.78	−0.15	−0.32, 0.01	−0.14	−0.26, −0.03	−0.02	−0.14, 0.09
External motivation (part 1)	0.01	−0.07, 0.08	0.63	0.51, 0.75	−0.01	−0.09, 0.07	−0.04	−0.12, 0.04
Positive attitudes (part 1)	0.03	−0.07, 0.13	−0.02	−0.17, 0.13	0.86	0.78, 0.94	−0.10	−0.18, −0.02
Negative attitudes (part 1)	−0.13	−0.25, −0.01	−0.01	−0.19, 0.17	−0.06	−0.16, 0.03	0.73	0.63, 0.83
Age	0.01	−0.00, 0.02	−0.01	−0.03, 0.01	0.00	−0.01, 0.01	0.01	−0.00, 0.02
Sex	−0.42	−0.79, −0.04	−0.35	−0.92, 0.21	0.28	−0.04, 0.59	0.11	−0.20, 0.42
Racial identity								
Asian/Pacific Isl.	0.39	−0.21, 0.98	0.44	−0.45, 1.32	−0.12	−0.61, 0.37	0.59	0.11, 1.06
Hispanic	−0.56	−1.48, 0.36	1.33	0.04, 2.63	−0.20	−0.92, 0.53	0.25	−0.46, 0.96
Native American	−1.95	−3.41, −0.49	−0.81	−2.98, 1.37	−0.43	−1.64, 0.79	0.68	−0.52, 1.87
Multiracial	−0.93	−1.92, 0.05	0.52	−0.94, 1.98	−0.04	−0.86, 0.77	0.59	−0.21, 1.39
Other/prefer not to disclose	−0.72	−3.26, 1.82	−0.02	−3.80, 3.77	−1.19	−1.28, 0.88	−1.17	−3.22, 0.87
R^2	.67		.47		.76		.75	

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(n = 21; 9.05%) were removed from analysis. Therefore, the following results are with a total sample of 211 respondents. Previous (part 1) reciprocity, motivation, and attitudes did not significantly predict victim race recall. Prior positive reciprocity was a significant and positive predictor of part 2 positive reciprocity, as was prior negative reciprocity with part 2 negative reciprocity. Internal motivation to avoid prejudice in part 1 was also a significant negative predictor of negative reciprocity. Other covariate results can be found in Tables 1 and 2. Odds ratios are reported for the dichotomous outcome of victim race recall, and unstandardized regression coefficients are reported for continuous outcomes.

There was a significant interaction between hero race and victim race conditions predicting the likelihood of remembering the victim as White, $b = -2.49$, $p < .001$ Figure 2. Probing the interaction using logistic regression finds that when the hero's race was Black, there was a significant effect of victim race condition, such that participants in the ambiguous race condition were significantly less likely to recall the victim's race as White than participants in the White victim condition, $or = 0.03$, $p < .001$, 95% CI(0.01, 0.11). However, when the hero's race was White, there was not a significant effect of victim race condition on recall, $or = 0.45$, $p = .10$, 95% CI(0.17, 1.16). Additionally, when the victim was ambiguous, participants exposed to a Black hero were significantly less likely to respond that the victim was White than participants exposed to a White hero, $or = 0.23$, $p = .02$, 95% CI(0.07, 0.78). However, when the victim was White, participants exposed to a Black hero were more likely to accurately recall the victim as being White, $or = 3.09$, p = .01, 95% CI(1.26, 7.60). Power analysis using an online tool (Power/Sample Size Calculation for Logistic Regression with Binary Covariate(s), 2019) for the interaction predicted in Hypothesis 1, with $\alpha = .05$, $n = 211$, and the obtained odds ratios finds power = 0.856, which is adequate. These findings largely support Hypothesis 1; as Figure 2 shows, participants were least likely to report the victim was White if they were saved by a Black person and if the victim's race was not depicted. Interestingly, participants were *more* accurate in remembering that the victim was White when the hero was Black compared to when the hero was White; while this does not go against the crux of Hypothesis 1, which was more about ambiguous situations, it is a curious finding. Overall, the pattern that emerged demonstrates that, under situations of ambiguity, people are less likely to remember a victim was White if the hero was Black.

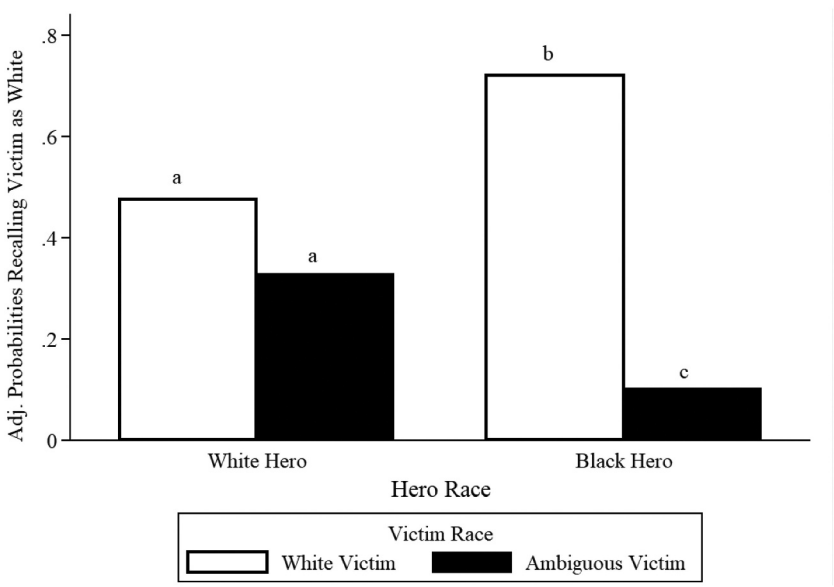

Figure 2. Graph of likelihood of responding that the victim was white as predicted by the interaction between hero race and victim race conditions, controlling for part 1 attitudes, reciprocity, and motivation to avoid prejudice. Note: different letters denote significant differences in predicted values.

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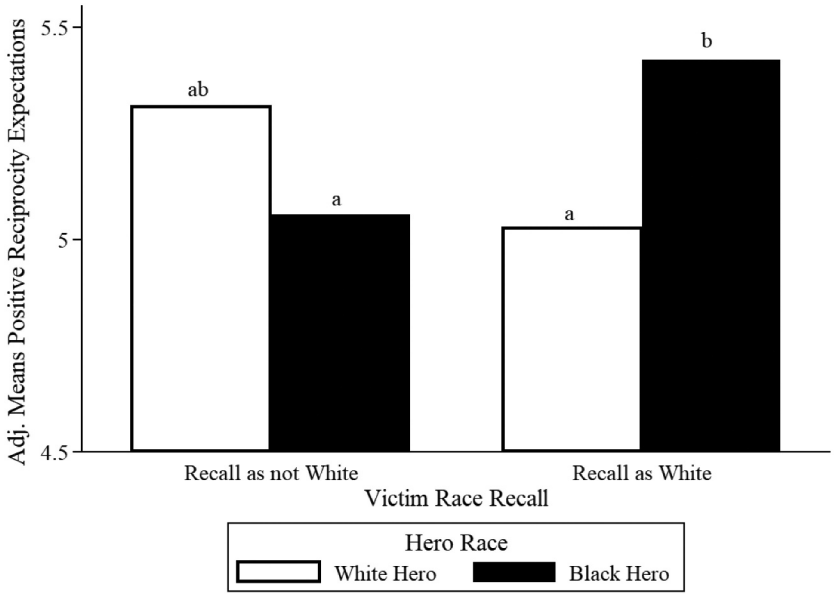

Figure 3. Graph of positive reciprocity expectations as predicted by the interaction between hero race and victim race recall, controlling for part 1 attitudes, reciprocity, and motivation to avoid prejudice, and for victim race condition. Note: for clarity of depiction, y-axis begins at 4.50.

When predicting positive reciprocity beliefs, there was a significant interaction between hero race and whether participants recalled the victim as White, b= 0.65, p< .001 Figure 3. Probing the interaction using OLS regression reveals that when the hero was Black, recalling the victim's race as White was associated with significantly higher positive reciprocity than recalling the victim's race as nonwhite, b= 0.40, p= .02, 95% CI(0.06, 0.73). There was not a significant difference by recalled race of the victim when the hero was White, b= −0.29, p= .06, 95% CI(−0.58, 0.01). There was also a significant effect of hero race when the victim was recalled as White, showing that a Black hero saving a White victim was associated with higher positive reciprocity than a White hero saving a White victim, b= 0.40, p= .02, 95% CI(0.05, 0.74). There was not a significant effect of hero race when the victim was not recalled as White, b= −0.26, p= .06, 95% CI(−0.53, 0.01)]. The pattern of results driving the interaction as shown in Figure 3 suggests positive reciprocity is highest when the hero was Black, and the victim was recalled as White. Power analysis using the power command in Stata suggests that this test is had adequate power, though perhaps slightly underpowered; α = .05, n= 211, power = 0.77. These results support Hypothesis 2.

When predicting negative reciprocity beliefs, there was not a significant interaction between hero race and whether participants recalled the victim as White, b= −0.21, p= .36. This answers Research Question 1; there was no significant influence of hero or recalled victim race on negative reciprocity in this context.

Positive reciprocity was a significant predictor of internal motivation to avoid prejudice, b= 0.52, p< .001, but not of external motivation, b= 0.20, p= .29. This suggests that positive reciprocity increases egalitarian motives. Internal motivation to avoid prejudice was then associated with increased positive attitudes toward Blacks, b= 0.12, p= .04, but not significantly associated with negative attitudes, b= −0.10, p= .31. The indirect effect of positive reciprocity expectation on positive attitudes toward Blacks, as mediated by internal motivation to avoid prejudice, was significant and positive, b = 0.06, 95% bias-corrected CI (0.005, 0.17). This supports Hypothesis 3. Please see Figure 4 for a graphical depiction of the results.

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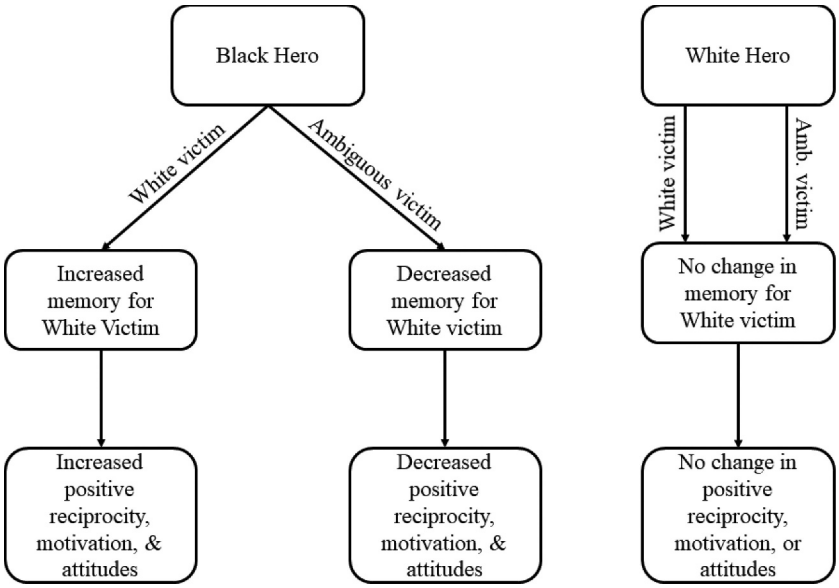

Figure 4. Flow chart illustration of results.

Discussion

Bounded generalized reciprocity (BGR) contends that a major reason for ingroup favoritism is the assumption that ingroup members are more likely than outgroup members to be helpful in the future (Balliet, Wu & De Dreu, 2014; Yamagishi, Jin & Kiyonari, 1999). Consequently, the expectation that individuals in a particular group will be likely to reciprocate behavior will influence one's feelings about that group and may be an important factor behind prejudice and discrimination. These expectations of reciprocity can be influenced by media in a variety of contexts (Ellithorpe & Ewoldsen, 2016; Rheu, Ewoldsen, Ellithorpe, Yao & Sethi, 2019; Velez, 2015; Velez, Greitemeyer, Whitaker, Ewoldsen & Bushman, 2016). However, consistent with constraint satisfaction approaches to memory (Ewoldsen et al., in press), the interpretation of media messages is not without bias, whether it comes from prior attitudes and motivation to avoid prejudice (Eno & Ewoldsen, 2010; L. Holt, Ellithorpe & Ralston, 2017) or from general cultural understandings of a stereotype (Oliver & Fonash, 2002).

Results of the present study suggest that memory for helping behaviors where Black individuals helped Whites is impaired, and this has implications for beliefs about helping and reciprocity in the future. This is supported by the finding that in the absence of evidence that the person helped by a Black hero in a news story was White, participants were significantly more likely to assume the victim was not White – including when compared to an ambiguous victim saved by a White person. If participants were simply, and accurately, responding that the victim was ambiguous when the victim was not shown, then we should also see an equal likelihood of reporting the victim was nonwhite/ambiguous when the hero was White. However, this was not the case; only when the hero was Black was there an increase in the likelihood that participants respond that the victim was not White. Participants demonstrated a clear memory bias in the ambiguous victim situation consistent with the expectation that Blacks do not help Whites.

These responses about the victim's perceived race then mattered for predicting future expectations of positive reciprocity. Positive reciprocity expectations were highest when participants recalled a Black hero saving a White victim. This finding is consistent with the work on illusory correlations – a highly salient event is highly memorable and influences people's later judgments (Sherman,

Hamilton & Roskos-Ewoldsen, 1989) such that positive reciprocity expectations then were associated with increased positive attitudes toward Blacks, mediated by internal motivation to avoid prejudice. There were not, however, significant relationships between hero race and/or victim race recall and negative reciprocity. As we surmised previously, positive reciprocity might be the more relevant judgment in the present study context given that helping behaviors were highlighted. Negative reciprocity, or retribution for a wrong, should be less salient. This has interesting implications for the nature of positive and negative reciprocity, in that it suggests they may be somewhat orthogonal in their relationship – or at the very least, are able to be affected independently. This further validates the separation of the two into distinct constructs.

These results have theoretical implications for the application of bounded generalized reciprocity (BGR) to the processing of depictions of Black individuals engaging in helping behaviors. Specifically, they indicate that intergroup helping behaviors by the specific group depicted can influence the interpretation of the event, but this is tempered by the overtness of the intergroup status of the people involved. If it is not clear who the parties involved in the helping behavior scenario are, people may misremember whether the situation was indicative of intergroup helping This is in line with previous research on individual attitudes and motivation to avoid prejudice (Eno & Ewoldsen, 2010; L. Holt, Ellithorpe & Ralston, 2017), as well as on general cultural assumptions about violent crime (Oliver & Fonash, 2002). The results are also consistent with research on reciprocity expectations in a video game context, in which experiencing cooperation in a video game increased pro-social behavior toward a minimal outgroup member later (Velez, 2015), or even a member of an outgroup (Velez, Mahood, Ewoldsen, & Moyer-Guse, 2014). Importantly, these results also suggest that the way intergroup helping behaviors are portrayed may influence future reciprocity expectations. There is likely a dynamic relationship between reciprocity and exposure to helping behaviors in which they influence one another over time. Unfortunately, the media overwhelmingly depict Black individuals as engaging in negative and harmful behaviors and are less likely to depict them engaging in helping behaviors (Dixon, 2007; Dixon & Linz, 2000). The current findings suggest that these tendencies on the part of the media likely reinforce preexisting negativity about the likelihood of positive intergroup reciprocity.

There are also implications of the present results for vicarious intergroup contact (Joyce & Harwood, 2014). One possible mechanism for social learning as described in Joyce and Harwood (2014), and Park (2012), might be that viewers internalize reciprocity beliefs when presented specifically with examples of intergroup helping behaviors. Whether there are other contexts in which reciprocity beliefs would also be a mechanism, or the boundary conditions for when reciprocity is not a mechanism, are questions for future research.

Practical application of these results could include that when the news media cover intergroup helping behaviors, it should be made clear, whenever possible, that the hero and victim were of different racial groups. In our stimuli, this usually was due to footage of the actual rescue being shown in which the victim is clearly White, as compared to footage where the victim is obscured or where there was no direct footage of the rescue. The subway tracks are not the only context in which people often help one another in a human-interest news story, however, and other contexts may make it even easier to depict both the hero and the victim. The results of the present study suggest that it may be harmful to intergroup reciprocity beliefs if there is a failure to clarify the information about group status, as it may allow low reciprocity expectations to influence content interpretation. It would also be potentially important for narrative content to depict helping behaviors between Black and White characters. Future research should look at these processes in a fiction context. Perhaps tellingly, while it was very easy to find many examples of White heroes saving obviously White victims, it was not nearly as easy to find the clips for the Black hero/White victim condition despite extensive searches. It was also extremely difficult to find suitable clips where the victim was Black, regardless of hero race – and the few we could find with a Black hero had problematic themes where they focused on the hero's past with drug addiction or homelessness rather than on their heroism. This meant we were unable to include a condition with an obviously Black victim, despite

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the fact that Black people represented 28% of the subway-related fatalities in New York City (Lin & Gill, 2009). It also suggests there may be an underlying bias against showing Black heroes in general, as well as showing Black victims. This would be an interesting issue to address in future research, both in terms of the influence of a Black victim as well as a content analysis of depictions of Black heroes in news stories.

Limitations and future research

Interestingly, participants were more likely to remember the victim's race as White when the hero was Black, and when the victim's race was shown as White. One possible explanation is that participants found it surprising that a Black person saved a White person and were therefore more likely to remember accurately. However, this does not explain a reduced accuracy of recalling a White victim when the hero was White, and it also cannot be tested in the present data. Second, it is likely that the effects of a single-shot exposure such as this will not last. However, that exposure to a video less than three minutes long could influence these processes is supportive of the likelihood that longer and/or stronger exposures would have even larger effects. Additionally, the news clips used in the present study were real news stories from a popular human-interest angle, lending external validity and the likelihood of repeat exposure, which would enhance effects. Future research should expand these findings to other contexts, such as entertainment genres. Might watching a drama on television in which a Black character saves the life of a White character, for example, have a similar effect? In addition, this area of research should be linked to the BIAS map work that has found influences of stereotype content on behavior toward a target group (Cuddy, Fiske & Glick, 2007). For example, people are more likely to enact facilitating behaviors such as helping for groups that are seen as warm (Cuddy, Fiske & Glick, 2007). In the present study, the helping behavior is not from the ingroup to the outgroup, but instead originating from an outgroup member. To the extent that target group behavior will influence stereotype content and behavior orientation, viewing reciprocity from an outgroup member may influence reciprocity behaviors on the part of the viewer. Future research should explore the behavioral dimensions of these processes further. Finally, future research should consider potentially important moderators of these effects. For example, exposure in real life outside of media to members of the target group may either enhance or diminish the effects of a media message, depending on whether mainstreaming or resonance processes prevail in this context (Gerbner, 1998). For example, a study on media exposure and attitudes toward homosexuality found support for mainstreaming (i.e., that television viewing brings those with disparate attitudes closer together) rather than resonance (i.e., that television viewing exacerbates preexisting schisms in beliefs; Calzo & Ward, 2009). However, the context of racial attitudes may be different from that of attitudes toward homosexuality, and more research is needed.

Conclusion

Intergroup relations in the United States have hit a particularly high level of tension in 2020. One possible avenue to increase trust and positive interactions is to foster the belief that members of each group will be likely to help members of the other group in the future – establishing an expectation of reciprocity. Given the dearth of interracial interaction occurring in real life (Riles et al., 2018), one place where examples of trust can be seen as happening is through the media. In the present study, to the extent that people did recall seeing a Black person helping a White person in a news story, their expectations for future positive reciprocity from Black people were affected in a positive direction. Importantly, this increase in positive reciprocity was associated with a concomitant increase in motivation to avoid prejudice and positive attitudes toward Blacks. Thus, a short media message with a relatively subtle manipulation was able to influence reciprocity expectations, which influenced motivation to avoid prejudice and racist attitudes. Based on bounded generalized reciprocity, media messages should include clear racial cues when depicting intergroup helping behaviors. This may

bolster expectations of positive reciprocity and positive intergroup attitudes. Media messages may often exacerbate problematic intergroup attitudes and behaviors in the real world (Dixon, 2007, 2008c; Oliver & Fonash, 2002), but it has the potential to ameliorate them as well.

Note

1. The data from the pretest survey only was used in a second published manuscript with a different analysis (L. F. Holt, Ellithorpe, Ewoldsen & Velez, 2022). Some of those items were also included in this study as covariates (specifically, part 1 positive and negative reciprocity, part 1 internal and external motivation, and part 1 positive and negative attitudes), but they are not the main focus of this study and their inclusion or exclusion as covariates in the model does not change the study results.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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