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Too Close for Comfort: Resisting Relevance as a Lever for Persuasion

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Abstract

Objective: This work investigates how broad principles of persuasion (e.g., the role of relevance) operate in the context of social identities. Although relevance is expected to facilitate persuasion, we use information targeting as a relevance intervention to test whether and why signaling relevance through identities (e.g., race) backfires. **Methods:** In Study 1, medical practitioners were surveyed about their evaluations and use of information targeting. In Studies 2-5, European Americans and African Americans were told they received information about HIV and/or flu after providing their demographics (targeting condition) or due to chance (control condition). Collectively, these studies tested the direct consequences of increasing relevance via targeting identities (Study 2), the mechanism underlying these consequences (Studies 3-4), whether consequences emerge only when identities are used as a relevance cue (Studies 3-4), and whether perceptions about the source of relevance produces divergent consequences (Study 5). **Results:** Practitioners reported favorable evaluations and use of targeting (Study 1). In Studies 2-5, being in the targeting (versus control) condition generally decreased attention to the information and produced more negative source evaluations for African Americans, but not European Americans. Studies 3-4 showed that consequences emerged due to perceptions of being unfairly judged, and only emerged when racial identities were used as a relevance cue. Study 5 revealed that targeting backfires when recipients perceive that relevance is derived from the research team. **Conclusions:** Leveraging relevance through social identities can preclude the expected benefits of relevance by increasing perceptions of judgment and/or beliefs that relevance is being externally imposed.

Keywords: Relevance, Identity, Persuasion Strategies, Identity Threat, Persuasion

"I bet people at the company [Netflix] thought it would be a cool idea and drive engagement. But people generally don't like knowing they're being treated differently because of their race."
-- Chicagoan coder @bensayingthat (Benjamin Williams), *The Guardian*, 2018

In October 2018, Netflix, a multi-billion-dollar video streaming service, was caught in a debacle when its algorithm that customizes TV and movie recommendations to increase viewer engagement was accused of targeting media content to African Americans based on their race (Iqbal, 2018). Specifically, Netflix was accused of targeting particular movies and shows to African American audiences by using images of African American characters as cover art for the programs, despite the fact that these characters often had minor roles and little screen time. Although Netflix suggested that their program recommendations were based only on prior viewing history because they do not have access to information about viewers' race, ethnicity, or gender, African American viewers' attributions about why they were receiving these recommendations (e.g., their race) evoked beliefs about being stereotyped by the company. Although African Americans' negative reactions to feeling targeted by a video streaming service may seem like a situation with low-stakes outcomes, this example is important for several reasons. First, it is illustrative in that extant literature would suggest that increasing perceived relevance should increase viewer engagement, rather than eliciting outrage. As such, this scenario suggests that current theory about the role of relevance in persuasion may be incomplete as it cannot account for examples such as these, where persuasive efforts to leverage relevance through social identities backfire. Additionally, it is important to consider the impact of these negative reactions in contexts where the stakes may be higher. For instance, if people believe that they are receiving persuasive communications about their health due to the relevance of their racial or ethnic identity, subsequent perceptions of being stereotyped or unfairly judged may

elicit disengagement from the message and/or distrust of the physician, subsequently impeding access to health information and reducing the likelihood of behavior uptake.

Although psychological theory would suggest that increasing the perceived relevance of Netflix's program recommendations should facilitate engagement among African American audiences, it is important to understand (a) why this was not the case, and (b) whether negative responses emerge in other contexts where efforts to increase message reception leverage relevance. Thus, the current paper is engaged with understanding how broad principles of persuasion (e.g., the role of relevance in persuasive communications) operate in the context of social identities. One of the most fundamental tenets of persuasion is that personally relevant messages are more persuasive than irrelevant messages (Chaiken, 1980; Liberman & Chaiken, 1996; Petty, Cacioppo, & Goldman, 1981; Roser, 1990) As a result, persuasive efforts often leverage message relevance to facilitate behavior change, increase knowledge, and change preexisting attitudes and beliefs (Brug, Steenhuis, Assema, & de Vries, 1996; Kiene & Barta, 2006; Southwell, 2009; Strecher et al., 2008). Despite the extensive use of relevance within persuasive appeals, limited work investigates how interpretations of, and responses to, relevance may be moderated by recipients' social identities. Therefore, this framework fills a critical gap in extant literature by highlighting how identities may modulate the ways in which bedrock principles of persuasion actually operate. Because identities are dynamic and situated in context (Oyserman, Elmore, & Smith 2012), we consider how using identities as a relevance cue to change health behavior (e.g., by making identities salient before or after receiving a persuasive appeal) impacts both receptivity and responses to messages. Specifically, this work considers the conditions under which signaling relevance based on social identities may backfire, and why

signaling relevance based on social identities might be consequential for some groups, but not others.

Understanding the utility of relevance as a persuasive strategy is particularly important in the healthcare domain, where persuasive efforts to motivate behavior change are ubiquitous. Thus, to test the boundary conditions under which leveraging relevance is beneficial, the current work investigates how people engage with, and respond to, health messages when they perceive that relevance is being signaled through their social identities (e.g., their race). Although perceiving high message relevance may be beneficial in some contexts, relevance may backfire if (a) message receipt is attributed to a marginalized identity, (b) recipients feel judged (e.g., experience social identity threat), or (c) recipients infer that relevance is being derived from an external, versus internal, source. Under these conditions, recipients may disengage from message content, derogate the message source, or fail to enact the advocated behavior. Because African Americans (1) have a marginalized racial identity that makes them particularly susceptible to identity threat (Purdie-Vaughns, Steele, Davies, Ditlmann, & Crosby, 2008), and (2) are often the target audience for health communications due to a high-risk status (CDC, 2015; Crepaz et al., 2009; Jemmott III, Jemmott, & Fong, 1998; Lipkus, Lyna, & Rimer, 1999; Pederson, Ahluwalia, Harris, & McGrady, 2000), it is both theoretically and practically important to understand how African Americans respond to persuasive efforts that leverage relevance to promote behavior change.

The role of social identities in persuasion

Developing effective persuasive appeals often relies on optimizing features of the message, as well as understanding how person-level factors (e.g., attitudes or identities) may influence responses to the message. Although the role of attitude-relevance on persuasion has

been the focal point of research to-date, identities have been understudied in the context of persuasion (Hogg & Smith, 2007; van Knippenberg, 1999). Examining the role of social identities is crucial because identities also shape the ways in which audiences respond to messages. For instance, social identities may indirectly influence persuasion by shaping the formation and strength of people's attitudes in several ways: acting as a normative cue that signals how "people like me" should feel about particular issues, shifting the perceived level of involvement for group-relevant issues, and biasing information processing (Boninger, Krosnick, & Berent, 1995; Fleming & Petty, 2000). The ways in which social identities influence attitudes have been demonstrated empirically: Newcomb (1943) found that over time, college students' political attitudes diverged from their (more conservative) parents' views and became more analogous to other college students' (more liberal) attitudes. Additionally, when European Americans encounter information about the changing racial demographics of the U.S., perceived threat to their social status produces more negative attitudes towards racial minority groups (Craig & Richeson, 2015).

Identities may also impact persuasion in ways that are distinct from attitudes. Specifically, some identities, particularly ones that are immutable, may convey social information about group membership that may or may not be consistent with beliefs that individuals themselves espouse (Hogg & Smith, 2007). For instance, although people presume large gender differences between men's and women's attitudes towards political issues, such as immigration and abortion, their attitudes may be in greater alignment than expected (Grant, Button, Ross, & Hannah, 1997). Given that attitudes cannot always be inferred from social identities, group members may respond negatively to messages in which their social identities

are presumed to reflect homogenous attitudes, particularly when group members' attitudes are actually diverse (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner & Reynolds, 2011).

Continued study of the mechanisms through which social identities facilitate or undermine persuasion is imperative because prior research suggests that social identities can impact the efficacy of persuasive appeals in several ways. For example, messages are generally more persuasive when (a) they are presented by an information source who shares the recipients' group membership, (b) the relevant identity has been activated, or (c) the message content expresses attitudes that are consistent with, or relevant to, an aspect of one's identity (Durantini , Albarracin, Mitchell, Earl, & Gillette, 2006; Haslam, McGarty, & Turner, 1996; Mackie, Worth, & Asunction, 1990; Maitner, Mackie, Claypool, & Crisp, 2010; Turner et al., 1987; Wyer, 2010). Despite these well-established patterns of findings, variation in message features, such as the strength of the arguments and whether the issue is group-relevant, may produce heterogeneity in these relationships. For instance, although messages delivered by an ingroup (versus outgroup) member facilitates persuasion, this effect is particularly strong when (a) the issue is group-irrelevant, or (b) people read strong (versus weak) messages in response to group-relevant issues (Mackie et al., 1990). As such, previous research underscores the importance of investigating how the interaction between recipients' social identities and features of the message (e.g., whether the message is personally relevant) may influence the efficacy of persuasive efforts.

The importance of relevance

To understand the utility of message relevance in persuasive communications, it is first important to consider what it means for something to be relevant. Merriam-Webster (n.d.) defines relevance as "relation to the matter at hand" or "the ability (as of an information retrieval system) to retrieve material that satisfies the needs of the user." Relevance has also been defined

in the context of communication. For instance, Grice's maxim of relation highlights that people should say things that are pertinent to the discussion at hand. Therefore, this maxim suggests that relevance is a key part of successful communication and specifically, allows for thoughts to be understood (Grice, 1975). Within empirical research, relevance has been operationalized in several ways, such as statements or language that appeals to a particular group (Brage Hudson, Campbell-Grossman, Keating-Lefler, & Cline, 2008), messages that show some regard to recipients' personal characteristics (attitudes, belief systems, or behavior; Clary, Snyder, Ridge, Miene, & Haugen, 1994; Petty, Wheeler, & Bizer, 2000; Uskul & Oyserman, 2010), and visual images or symbols that signal group membership (Callahan & Ledgerwood, 2016). Given the broad range of definitions and operationalizations for relevance, it is important to consider how the multidimensionality of relevance may influence message receptivity. Although relevance has consistently been identified as a key strategy for persuasive appeals, relevance may backfire in contexts where it elicits threat (e.g., by undermining recipients' beliefs, evoking negative emotions, such as fear, or making recipients feel judged; Clark, Wegener, & Fabrigar, 2008; Freeman, Hennessy, & Marzullo, 2001; Kessels, Ruiter, & Jansma, 2010; Liberman & Chaiken, 1992; Major, Hunger, Bunyan, & Miller, 2014; Seacat & Mickelson, 2009). Moreover, whether relevance is derived from an external source (versus personally intuited) may also produce heterogeneity in the consequences associated with relevance.

The benefits of relevance

Across several domains, relevance has been linked with increased persuasion, greater attention to self-relevant stimuli, more systematic information processing, increased information encoding and recall, and stronger approach behavior to health goals (Abrahamse, Steg, Vlek, & Rothengatter, 2007; Bargh, 1982; Chaiken, 1980; Chaiken, Giner-Sorolla, & Chen, 1996;

Chaiken & Ledgerwood, 2011; Earl, Nisson, & Albarracin, 2015; Johnson & Eagly, 1989; Knobloch-Westerwick & Meng, 2009; Lustria et al., 2013; Moray, 1959; Petty & Cacioppo, 1979; Petty & Cacioppo, 1986; Rogers, Kuiper, & Kirker, 1977; Rotliman & Schwarz, 1998). Moreover, research using event-related potentials suggests that the benefits associated with relevance can emerge even without conscious effort; for example, people automatically allocate attention to self-relevant stimuli, even when they are explicitly instructed to ignore them (Gray, Ambady, Lowenthal, & Deldin, 2004).

The relationship between relevance and persuasion is particularly evident in health contexts, where relevance is often directly manipulated through message tailoring. Prior research shows that when messages are developed based on information provided by recipients, such as their behavior, medical history, or personal interests, the content is perceived to be more relevant and is evaluated as more novel, interesting, and of a higher-quality (Haerens et al., 2007). For example, overweight adults who received tailored (versus non-tailored) communication about weight-loss reported more positive thoughts about the materials, more positive personal connections to the materials, more positive self-assessment thoughts, and stronger behavioral intentions (Kreuter, Bull, Clark, & Oswald, 1999). Moreover, people who are exposed to highly relevant, personalized messages exhibit more accurate perceptions of risk, increased knowledge, stronger motivation to seek help, and greater uptake of behavioral recommendations (Albada, Ausems, Bensing, & Dulmen, 2009; Fjeldsoe, Marshall, & Miller, 2009; Nooijer, Lechner, Candel, & de Vries, 2004).

Although an extensive body of research focuses on leveraging message relevance at the individual level by tailoring communication based on recipients' personal characteristics, persuasive efforts have also relied on leveraging relevance through cultural values, group

characteristics, or social identities to reach target audiences (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003; Kreuter & Wray, 2003). For instance, cultural tailoring is a relevance intervention designed to recognize the role of cultural differences in persuasive communication by personalizing messages in ways that acknowledge and reinforce a group's cultural values, beliefs, and behaviors (Huang & Shen, 2016). Similar to tailoring at the individual level, cultural tailoring has been associated with greater persuasion; Kreuter & colleagues (2005) found that integrating cultural values, such as religiosity, collectivism, racial pride, and time orientation into a pamphlet about breast cancer that was already tailored on behavioral constructs (e.g., perceived risk for breast cancer and self-efficacy) was more effective than pamphlets based on behavioral constructs alone. For instance, African American women who reported high levels of racial pride (e.g., beliefs that they should keep up with issues that affect the Black community) and received culturally tailored messages about the importance of mammography for African American women to reduce race-based disparities in breast cancer mortality reported greater intentions to receive a mammogram than African American women who did not receive pamphlets integrating these cultural values (Kreuter et al., 2005).

The heterogeneous effects of relevance: The efficacy of threat as a persuasive strategy

Despite a comprehensive body of literature documenting the benefits of relevance, the effects of relevance may be more complex than previously considered. In particular, persuasive efforts that leverage relevance may backfire or produce heterogeneous effects in contexts where persuasive communications threaten an important aspect of people's self-concepts, such as their self-image, beliefs or attitudes, self-esteem, or future selves (Bensley & Wu, 1991; LaVoie, Quick, Riles, & Lambert, 2017; Lisjak, Lee, & Gardner, 2012; Major et al., 2014; Seacat & Mickelson, 2009; Sherman, Nelson, & Steele, 2000). One common persuasive strategy, fear

appeals, evoke threat to one's sense of safety by manipulating the perceived severity of the threat, as well as the perceived susceptibility to negative outcomes (Witte, 1992). In particular, fear appeals aim to induce attitude and behavior change by increasing recipients' motivation to avoid physical and/or psychological distress (Tannenbaum et al., 2015). Although fear appeals leverage threat by linking personal engagement in risk behavior with undesirable outcomes, past research shows that the efficacy of leveraging threat to motivate behavior change among high-risk audiences is mixed (Earl & Albarracin, 2007; Witte & Allen, 2000).

Although some research suggests that fear appeals can effectively motivate behavior change (e.g., for one-time behaviors or when the appeals are coupled with strategies that increase people's sense of efficacy to cope with the threat), empirical evidence also shows that linking personal behavior with threat can backfire if it elicits defensive processing (Higbee, 1969; Janis & Feshbach, 1953; Peters, Ruiter, & Kok, 2013). Specifically, recipients who encounter threatening communications may respond by counterarguing the message content, derogating the message source, disengaging attention from intervention programs, showing non-uptake of intervention-advocated behaviors, or expressing reactance (Brehm & Sensenig, 1966; Earl & Albarracin, 2007; Earl, Crause, Vaid, & Albarracin, 2016; Earl et al., 2015; Peters et al., 2013; Rogers & Mewborn, 1976; Witte & Allen, 2000). For instance, coffee drinkers who encountered a message suggesting that coffee consumption is associated with an increased risk of breast cancer were less likely to believe the message and were more critical of the message arguments than non-coffee drinkers (Liberman & Chaiken, 1992). Furthermore, message recipients may be particularly likely to exhibit defensive responding to threatening messages when the target behavior is complex, requires long-term change, or when people lack the resources needed to cope with the threat (Rogers & Mewborn, 1976; Tannenbaum et al., 2015). For instance, alcohol-

using college students who received information about the risks of alcohol use evaluated drinking as less of a problem, were more critical of the scientific merit of the article, and were more skeptical of the article's claims (Leffingwell, Neumann, Leedy, & Babitzkke, 2007). Taken together, prior research suggests that in the context of threat, relevance may increase avoidance of, rather than approach towards, messages.

Whether persuasive appeals are perceived to be threatening may be determined, at least in part, by recipients' attributions about why the communication was received (Kelley, 1967). When people encounter an ambiguous event, such as the receipt of feedback, they often experience difficulty interpreting its cause, a phenomenon known as attributional ambiguity (Crocker, Voelkl, Testa, & Major, 1991; Major & Crocker, 1993; Mendes, McCoy, Major, & Blascovich, 2008). Given this ambiguity, the types of attributions people make are often shaped by personal characteristics, such as their motivations, prior experiences, or sensitivity to stigma cues. Because these characteristics are often shared by other ingroup members, attribution patterns made in response to ambiguous events (e.g., information receipt) may vary as a function of social identities. Specifically, social identities may impact attributions at two levels: determining (a) whether people experience ambiguity in response to an event, and (b) how people interpret that ambiguity (Mendoza-Denton, Downey, Purdie-Vaughns, Davis, & Pietrzak, 2002).

For members of marginalized groups, greater sensitivity to stigma cues may increase susceptibility to attributional ambiguity due to perceptions that their identity may underlie experienced events. The increased sense of ambiguity caused by having a marginalized identity, in turn, can shape attribution patterns. For instance, when members of marginalized groups receive negative feedback from an outgroup member, an ambiguous event, their previous

experiences and/or sensitivity to stigma may influence whether they attribute negative feedback to an external factor, such as the evaluator's personality, versus an internal factor, such as being African American (King, 2003). Because attribution patterns impact subsequent responses to events, attributing negative events internally (versus externally) can increase negative affect or elicit threat, which may, in turn, prompt defensive responding (Crocker & Major, 1989; Major, Feinstein, & Crocker, 1994; Major, Quinton, & McCoy, 2002; Ruiter, Abraham, & Kok, 2001). Therefore, persuasive efforts that disseminate information based on group, rather than individual, characteristics, may increase recipients' attributions that the information was selected based on their identities, and these attributions may be particularly salient for people with marginalized identities. Moreover, making internal attributions may elicit defensive processing via increased perceptions of being judged or negatively evaluated on the basis of their group membership.

Therefore, messages that signal relevance through social identities may preclude persuasion if recipients experience, suspect, or anticipate being stereotyped or discriminated against due to their membership in a particular social group (e.g., experience social identity threat; Branscombe et al., 1999; Major et al., 2014; Steele, Spencer, & Aronson, 2002). Within prior literature, social identity threat has been associated with negative psychological and physiological outcomes, such as stereotype threat, compensatory behaviors (e.g., overeating), a decreased sense of belonging in environments, increased blood pressure, and greater cortisol secretion (Inzlicht & Kang, 2010; Logel et al., 2009; Scheepers, 2009; Scheepers, Ellemers, & Sintemaartensdijk, 2009; Steele, 1997; Townsend, Major, Gangi, & Mendes, 2011). Previous research documents the propensity for members of marginalized groups to experience social identity threat in response to stigma cues; for instance, adults with higher (versus lower) body mass indexes who perceived that they were receiving health communication about obesity and

obesity-related illness due to their weight status experienced social identity threat and consequently, reported reductions in behavioral intentions and self-efficacy to eat healthy foods and exercise (Derricks & Earl, 2019). Moreover, Fryberg and colleagues (2008) find that for American Indian students, exposure to American Indian mascots (compared to a neutral control) is associated with reductions in self-esteem, a lower sense of community worth, and fewer achievement-related possible selves because the mascots remind students of the limited ways in which their group is perceived by others.

Therefore, one reason why identity activation may be consequential in the context of persuasive communication is that making identities salient also activates identity-relevant attitudes, beliefs, and experiences that can shape subsequent behavior (Kawakami, Dovidio, & Dijksterhuis, 2003). For instance, when women hold token status in a math environment, the salience of their gender identities can activate stereotypes about their math ability and increase feelings of performance apprehension during a math task (Sekaquaptewa & Thompson, 2002; Sekaquaptewa, Waldman, & Thompson, 2007). Making identities salient can also guide people to behave in identity-consistent ways; activating African American and Latino students' racial identities activate normative beliefs about how "people like me" behave, which subsequently decreases willingness to engage in health behaviors perceived to be inconsistent with one's racial identity (Oyserman, 2015; Oyserman, Fryberg, & Yoder, 2007). In addition to considering the direct consequences of identity activation, it is also important to consider which identities are being activated because the identities that are made salient will drive subsequent behavior (Oyserman et al., 2007). For instance, whether Asian American women's gender or racial identity is activated influences their subsequent performance on a math test (e.g., whether they experience stereotype threat or stereotype lift, respectively; Shih, Pittinsky, & Ambady, 1999).

Given the consequences of activated social identities on behavior, persuasive messages that activate identity-relevant constructs (e.g., by signaling message relevance through identities) may produce divergent responses as a function of recipients' group membership.

One method of signaling relevance: Information targeting

The current research offers a theoretically novel and practically important qualification to beliefs that leveraging relevance is always beneficial for message receptivity. Although signaling message relevance through recipients' self-reported behavior, medical history, personal interests, or cultural values may facilitate persuasion, we propose that signaling relevance through a marginalized identity (e.g., being African American) may elicit social identity threat and impede persuasion.

Although extant research has operationalized relevance in several ways, the present work signals relevance through information targeting, a relevance intervention where information is disseminated specifically to high-risk audiences (e.g., disseminating information to older adults about ways to combat osteoporosis; Chang et al., 2004). Information targeting is differentiated from other relevance interventions, such as cultural tailoring, because targeting is intended to reach population subgroups based on characteristics that are presumed to be shared by group members, whereas tailoring is intended to reach one specific individual based on his or her personal characteristics (Kreuter & Wray, 2003). Therefore, although tailored communications are often adapted from individuating characteristics provided by recipients, targeted communications are often based on presumptions about recipients' group membership. As such, the efficacy of targeting as an intervention strategy rests on the assumption that targeting increases the perceived relevance of the messages, and consequently, will improve message receptivity (Kreuter & Wray, 2003). However, because the efficacy of targeting relies on

recipients' perceptions that the information is personally relevant, feeling that relevance is being derived from an external source (e.g., perceiving that the information provider thinks that information is relevant for a target audience), particularly in response to one's identity, may impede receptivity.

Although prior work suggests that disseminating relevant information to high-risk audiences is efficient, there may be unintended consequences of signaling relevance through marginalized social identities. When persuasive efforts adapt information at the group, rather than individual, level, they may rely on general knowledge about groups without acknowledging individual differences between group members (Napolitano & Marcus, 2002). Consequently, recipients may perceive that the message unfairly judges them based on their group membership without considering them as unique individuals, eliciting social identity threat (Steele et al., 2002; Turner et al., 1987). Given this possibility, it is imperative to understand how these efforts may impact outcomes that have a particularly important role in the context of persuasion. Therefore, the current studies examine the effects of perceiving identity-based relevance on message reception and yielding (e.g., attention, source evaluations, behavioral intentions, and behavior) due to their well-established implications for behavior change (Henson, Derlega, Pearson, Ferrer, & Holmes, 2013).

Overview of current research

In addition to exploring how real-world information providers perceive the utilization of relevance as an information dissemination strategy, these studies investigate how social identities operate in the context of persuasion. In particular, the present work identifies how African Americans, versus European Americans, respond to health information about HIV and flu, particularly when they perceive that their social identities (e.g., their race) may be the basis for

information selection. To test this possibility, the current work examines (a) conditions under which leveraging relevance based on identities backfires, and (b) why signaling relevance through social identities may negatively impact engagement with health information. In particular, these studies examine how African Americans (versus European Americans) respond when (1) information receipt is attributed to a marginalized identity, (2) recipients feel judged (e.g., experience social identity threat), and (3) recipients perceive that relevance is being derived from an external (versus internal) source. We expected that race, rather than other marginalized identities (e.g., being female or having low socioeconomic status), would emerge as a moderating factor because empirical evidence suggests that for people with multiple marginalized identities, racial identity is often the most salient or important cue (Pietri, Johnson, & Ozgumus, 2018; Shorter-Gooden & Washington, 1996). Because perceptions that racial identities are serving as a relevance cue may evoke identity threat, particularly for African Americans, we hypothesize that African Americans who receive targeted (versus non-targeted) information would disengage from the message content, distrust the message source, and exhibit decreased uptake of recommended behavior.

We hypothesize that negative effects on the primary study outcomes (attention, source evaluations, behavioral intentions, and behavior) will emerge for African Americans, but not European Americans. Because African Americans have been historically marginalized, making identities salient (e.g., by providing one's demographic information) may heighten African Americans' perceptions that they are receiving health information due to their racial identity. Consequently, feeling targeted based on racial identities may activate race-based cognitions and experiences (e.g., being stereotyped or unfairly judged) that negatively impact information processing and subsequent behavior (Steele et al., 2002). For European Americans, who have not

been historically marginalized on the basis of race, targeting is unlikely to activate race-based cognitions and experiences related to being stereotyped or unfairly judged.

To test our research questions, Study 1 examined medical practitioners' evaluations and use of information targeting as a strategy for information dissemination. Specifically, Study 1 assessed whether medical practitioners' beliefs about leveraging relevance are consistent with empirical literature. Study 2 examined how signaling relevance via social identities (through information targeting) impacted African Americans and European Americans' attention to the health messages and evaluations of the information source (e.g., the research team). Study 3 identified the mechanism underlying the effects observed in Study 2 and manipulated the hypothesized mechanism via the presence of racial identity cues. Study 4 tested whether the iatrogenic effects of perceiving identity-based relevance emerge in response to simply activating identities, or whether messages must signal that identities are being used as a relevance cue for consequences to emerge. Study 5 extended the model proposed in Study 3 by examining (a) the extent to which self-report measures of attention and source evaluations predict behavior, and (b) the role of participants' perceptions that relevance was derived from an external (versus internal) source (e.g., if perceptions that "the research team thinks the information is relevant for me" produces divergent responses from "I think the information is relevant for me").

Hypothesis 1: We hypothesized that, in line with theory highlighting the benefits of message relevance, real-world information providers (medical practitioners) will report favorable evaluations of information targeting. In particular, we expected that practitioners would endorse information targeting as a strategy that would facilitate patients' attention to health information and improve doctor-patient relationships (Study 1).

Hypothesis 2: Signaling relevance based on social identities will backfire for African Americans, but not European Americans, producing (a) decrements in attention to the messages, (b) more negative evaluations (e.g., reduced trust) of the information source, and (c) reductions in behavioral intentions and uptake of the behavioral recommendations (Studies 2-5).

Hypothesis 3: Responses to targeted (versus non-targeted) information will be moderated by participants' racial identity because perceiving relevance based on racial identities may activate race-based experiences, cognitions, and attitudes related to being stereotyped or having one's identities used as the basis for judgment. As such, we expected that perceptions of being unfairly judged would be the mechanism underlying negative outcomes for African Americans (Studies 3-5).

Hypothesis 4: Negative consequences for African Americans would emerge only when their social identities are used as a relevance cue (e.g., instructions referencing an association between their provided demographics and information selection), rather than in response to identity activation alone (e.g., providing demographics in absence of these instructions; Studies 3-4).

Hypothesis 5: Information targeting would produce negative effects on the primary study outcomes through perceptions of being unfairly judged because targeting increases perceptions that relevance is being derived from an external source (e.g., the research team thinks the information is relevant for me) but not perceptions that relevance is derived from an internal source (e.g., I think the information is relevant; Study 5).

All manipulations and data exclusions across studies are reported in the manuscript, and a complete list of measures is included in the online supplement. All studies were reviewed and approved by the Health Sciences and Behavioral Sciences Institutional Review Board. Due to the

absence of data to identify effect sizes using a priori power calculations, our predetermined target sample size was approximately 40-50 participants per cell in Studies 2-5, consistent with the cell sizes recommended by Simmons, Nelson, & Simonsohn (2011). This allowed us to detect small-to-medium sized effects (f_{Study2}=0.15, f_{Study3}=0.14, f_{Study4}=0.13, f_{Study5}=0.14; Faul, Erdfelder, Lang, & Buchner, 2007).

Study 1

Given an extensive body of research documenting the robust relationship between high personal relevance and increased persuasion, many public health campaigns rely on relevance to reach and persuade target audiences (Lewis et al., 2010; Rochlen, Whilde, & Hoyer, 2005; Wakefield, Loken, & Hornik, 2010). However, limited work has examined whether beliefs about the benefits of relevance drive behavior at the individual level (e.g., medical practitioners' willingness to leverage message relevance as a health promotion strategy). To test the ecological validity of the larger research questions being explored in this paper (e.g., how African Americans and European Americans respond to persuasive efforts that leverage relevance based on social identities), Study 1 investigated (a) the extent to which medical practitioners' beliefs about leveraging message relevance align with empirical research, and (b) whether medical practitioners act in accordance with their beliefs. To answer these questions, Study 1 asked medical practitioners to report their attitudes towards, and utilization of, information targeting.

Sample

Seventy-nine medical practitioners from Midwestern and Mid-Atlantic medical universities completed a survey online (n=46; 69.6% European American; age: *M*=50.20, *SD*=11.92) or face-to-face (n=33; 78.8% European American; age: *M*=46.23, *SD*=12.17).

Because t-tests revealed non-significant differences based on recruitment method, the presented results are collapsed across samples.

Procedure

Participants were informed that the researchers were interested in their expertise about a healthcare strategy. Before answering the survey items, participants read a description of information targeting, defining the healthcare strategy as: "targeting health information to subgroups of the population at higher risk for a disease (by giving them medical brochures about the disease)."

Participants answered survey items regarding their (a) personal endorsement of information targeting (2 items), (b) profession's use and endorsement of information targeting (2 items), (c) expectations that targeting will increase patients' attention to the information (1 item), and (d) expectations about the benefits of information targeting for doctor-patient relationships (3 items). Participants reported their responses on Likert-type scales ranging from 1 = *Strongly Disagree,* to 7 = *Strongly Agree,* with a neutral scale midpoint of 4 = *Neither Agree nor Disagree.*

Furthermore, participants responded to two survey items regarding their personal engagement in information targeting. As such, they reported their previous use of targeting (using a Likert-type scale ranging from 1 = *Never,* to 7 = *Very Often*) and their likelihood of targeting information to patients in the future (using a Likert-type scale ranging from 1 = *Not at All Likely,* to 7 = *Very Likely*). In addition to the aforementioned items, participants reported the attributes (visible identity cues and/or medical history) on which they would target information to patients. Participants saw 7 categories (weight, race, gender, age, sexual orientation, medical

history, and other), and could select as many categories as they wanted. The complete wording of all survey items is reported in the online supplement.

Analytic Strategy

We conducted one-sample t-tests comparing medical practitioners' survey responses to the neutral scale midpoint (4 = *Neither Agree nor Disagree*). Practitioners' previous targeting behavior and willingness to target information in the future was compared to its own baseline (1 = *Never/Not at All Likely*). Statistical means and standard deviations are reported in Table 1.

Results

Personal endorsement of information targeting. Practitioners believed that information targeting is an efficient method of information dissemination ($t_{76} = 2.95$, $p = .004$, $d = 0.68$) and a strategy that is indicative of their care for patients' health ($t_{74} = 6.68$, $p < .001$, $d = 1.55$).

Profession's use and endorsement of information targeting. Practitioners endorsed beliefs that targeting is a behavior that health professionals should consider doing more often ($t_{77} = 5.08$, $p < .001$, $d = 1.16$) and disagreed with beliefs that targeting should be done less often ($t_{75} = -6.60$, $p < .001$, $d = 1.62$).

Expectations that targeting increases attention for patients. Practitioners reported expectations that targeting would increase patients' attention to the information ($t_{71} = 3.94$, $p < .001$, $d = .94$).

Expectations that targeting improves doctor-patient relationships. Practitioners disagreed that information targeting would result in worse relationships between health professionals and patients ($t_{78} = -8.57$, $p < .001$, $d = -1.94$) or make patients feel distrustful ($t_{72} = -9.12$, $p < .001$, $d = -2.15$). Instead, practitioners believed that targeting would build trust between health professionals and patients ($t_{75} = 5.30$, $p < .001$, $d = 1.22$).

Personal engagement in information targeting. Practitioners reported previous use of information targeting ($t_{74} = 14.61$, $p < .001$, $d = 3.40$), as well as intentions to target health information in the future ($t_{73} = 13.92$, $p < .001$, $d = 3.26$), suggesting that practitioners' attitudes about targeting correspond with their actual behavior. Furthermore, 66.7% of practitioners reported a willingness to use visible identity cues (e.g. race, gender, weight status, age) as a basis for targeting information to patients, compared to 76.9% who would target based on medical history.

Table 1

Medical Practitioners' Evaluations of Information Targeting

	M (SD)	*t*	*p*	Effect Size (*d*)
Personal Use and Endorsement of Information Targeting				
An efficient method of information dissemination	4.48 (1.43)	2.95	.004	.68
A strategy indicative of their care for patients' health	4.91 (1.18)	6.68	<.001	1.55
Have targeted information to patients*	4.47 (2.06)	14.61	<.001	3.40
Intentions to target information in the future*	4.47 (2.15)	13.92	<.001	3.26
Profession's Use and Endorsement of Information Targeting				
Health professionals should target more often	4.72 (1.25)	5.08	<.001	1.16

Health professionals should target less often	2.97 (1.36)	-6.60	<.001	-1.52
Expectations that Targeting Increases Attention Among Patients				
Information targeting increases attention to health information.	4.43 (1.23)	3.00	.004	.70
Practitioner Beliefs About the Interpersonal Consequences of Information Targeting				
Information targeting generates worse relationships between doctors and patients	2.65 (1.41)	-8.57	<.001	-1.94
Information targeting makes patients feel distrustful.	2.60 (1.31)	-9.12	<.001	-2.15
Information targeting builds trust between health professionals and patients	4.75 (1.23)	5.30	<.001	1.22

Note: Items are shortened for brevity, and the complete wording of the survey items is available in the online supplement. Items denoted with a * are compared against their own baseline (1= Never)

Summary

Study 1 supported our predictions; consistent with empirical literature, medical practitioners believed that leveraging relevance (via information targeting) would produce beneficial outcomes for recipients. Specifically, practitioners expected that targeting would increase patients' attention to health information and improve doctor-patient relationships. Moreover, practitioners opposed beliefs that information targeting would be detrimental for patients (e.g., produce distrust). Practitioners' favorable evaluations of targeting were consistent

with their self-reported behavior; practitioners reported having utilized targeting in the past and exhibited intentions to target information in the future. Notably, practitioners endorsed the use of information targeting based on both medical history and visible identity cues (e.g., race). Taken together, Study 1 demonstrates that practitioners' beliefs about leveraging relevance are exclusively beneficial and translate into behavior.

Study 2

Because Study 1 showed that practitioners do, in fact, target health information to patients based on visible identity cues, Study 2 examined how African Americans and European Americans evaluate and respond to health messages when relevance is signaled through their social identities (e.g., their race). In particular, Study 2 examined the direct effects of targeting on two outcomes that have a central role in the persuasion literature: attention and source evaluations. Attention has been identified as a necessary initial step for persuasion and behavior change, and as such, it is important to determine whether participants are attending to the information content or if threat is inhibiting early stages of reception (McGuire, 1968). In addition, the impact of source characteristics on message evaluation has been studied extensively in the context of persuasion; more negative source evaluations (e.g., perceiving low credibility, expertise, or trustworthiness) generally impede persuasion and attitude change (Chaiken, 1980; Hovland & Weiss, 1951; Petty & Cacioppo, 1984; Littleford & Jones, 2017; Roskos-Ewoldsen & Fazio, 1992).

To assess the consequences associated with targeting, Study 2 explored whether recipients' responses would be moderated by (a) their race (African American versus European American), and (b) information content (HIV versus flu). We hypothesized that for African Americans, but not European Americans, receipt of targeted (versus non-targeted) health

information would (1) decrease attention to the health information, and (2) produce more negative evaluations of the information source. Furthermore, we expected to observe differential effects as a function of information content given prior research showing reductions in attention for HIV, but not flu, messages among African Americans (Earl & Nisson, 2015; Earl et al., 2016). Specifically, we expected that the targeting manipulation would decrease attention and source evaluations for African Americans who received HIV (versus flu) information due to increased social identity threat resulting from the association between African Americans' racial identity and HIV stigma (Brooks, Etzel, Hinojos, Henry, & Perez, 2005; Capitanio & Herek, 1999; Galvan, Davis, Banks, & Bing, 2008; Lewis & Oyserman, 2016; Rao, Kekwaletswe, Hosek, Martinez, & Rodriguez, 2007).

Sample

186 European American (49.8% female, 86.6% had at least some college, age: *M*=36.02, *SD*=12.19) and 157 African American adults (68.3% female, 87.7% had at least some college, age: *M*=34.10, *SD*=10.61) with U.S. IP addresses from Amazon's Mechanical Turk (Mturk) completed our online study[1]. 45 participants who identified with a different racial identity or as multiracial were excluded before data analysis. We excluded participants who identified as multiracial due to (a) the inability to categorize their race for our study aims (e.g., Black-White biracials), and (b) the added complexity of which racial identities may be activated by the targeting manipulation, which could directly impact participants' responses (Shih et al., 1999).

[1] We recruited African Americans using a qualification process in which Mturk workers completed a survey ostensibly about their cell phone use and reported their demographics (including race). At least one week after completing the qualification survey, African Americans were assigned a qualification score that allowed them to complete the targeting study. The qualification label gave no indication as to why participants were assigned the qualification, and the pattern of findings held in subsequent studies without the direct recruitment of African American participants.

Although we estimated the number of participants needed to reach the target sample size, a greater proportion of European American participants completed the survey than anticipated, producing unequal sample sizes.

Procedure

Participants were randomly assigned to one of eight conditions in a 2 (*Condition*: Targeting, Control) X 2 (*Participant race*: African American, European American) X 2 (*Information*: HIV, Flu) between-subjects design.

Participants were told the researchers were interested in testing different ways to present health information to the general public. To assess generalizability of the findings, half of the participants received information about HIV, and half read information about flu. HIV information was included due to its strong association with the African American community, and flu information was included as a control (Earl & Nisson, 2015; Earl et al., 2016; Kaiser Family Foundation, 2012).

Condition was manipulated with instructions explaining why participants were receiving the health information. Participants in the "Targeting" condition reported their demographic information (race, gender, socioeconomic status, and age) at the beginning of the survey and saw instructions that made explicit reference to their provided demographics: "Please evaluate the following information, which was selected for you based on the demographic information provided." Participants in the control condition were told, "Please evaluate the following information, which was selected for you based on a randomly generated computer algorithm" and reported their demographic information at the end of the survey. Following the experimental manipulation, participants read a set of paragraphs, adapted from information found on the CDC

website, about the transmission, symptoms, and treatment options associated with either HIV or flu (Earl et al., 2016).

Next, participants were asked survey questions regarding their (a) attributions for receiving the health information (one item measured using a Likert scale ranging from 1, *Strongly Disagree,* to 5, *Strongly Agree*; "I received these paragraphs due to something specific about me"), (b) attention to the health information (two items using a Likert-type scale ranging from 1, *Not at all,* to 9, *Very much*; "How much attention did you pay to the paragraphs", "I was able to concentrate on the paragraphs"; r=.81), and (c) evaluations of the information source (four items using Likert-type scales ranging from 1, *Not at all,* to 9, *Very much*; "I would be willing to help this research team again", "This research team is honest", "This research team has my best interest at heart", "I trust this research team"; $\alpha = .90$).

Analytic Strategy

Analyses of Variance (ANOVA) were used to test the primary hypothesis that targeted, versus non-targeted, information would produce decrements in attention and more negative source evaluations for African Americans. Although we hypothesized that these effects would be strongest for HIV information, analyses revealed non-significant 3-way interactions, suggesting that the observed effects were not moderated by information content (HIV or flu).

Statistical means and standard errors for the following results are listed in Table 2. For the sake of parsimony, the current and subsequent studies only report analyses that are relevant to the main study hypotheses. All other analyses (e.g., effect sizes for analyses using *Information*)[2] are reported in the online supplement.

[2] The reported findings across Studies 2-5 remained significant when controlling for other reported social identities (gender, socioeconomic status, and age). Moreover, none of these identities consistently

Results

Attributions for receiving the health information. A significant main effect of *Condition* revealed that our experimental manipulation was effective; participants in the targeting condition were more likely to make self-attributions, attributing receipt of the information to something about themselves, than participants in the control condition ($F(1, 335)=71.76$, $p<.001$, $d=.93$). However, neither the main effect of *Race* ($F(1, 335)=0.13$, $p=.716$, $d=.04$) nor the two-way *Condition* and *Race* interaction was significant ($F(1, 335)=.00$, $p=.949$, $\eta_p^2=.000$).

To better understand participants' attributions for receiving the information, participants responded to an open-ended survey item asking why they received the information at two points in the survey: (a) when participants stated "Agree" or "Strongly Agree" in response to the self-attribution item, and (b) at the end of the survey. After coding participants' qualitative responses for explicit references to racial identity, analyses showed that 35.7% of African Americans who were targeted to receive HIV information explicitly identified their racial identity, compared to 2.8% in the control condition who saw HIV information, 4.9% who were targeted to receive flu information, and 0% in the control condition who saw flu information. 4.9% of European Americans who were targeted to receive HIV information explicitly identified their race, compared to 0% in the control condition who saw HIV information, 2.0% who were targeted to receive flu information, and 0% in the control condition who saw flu information[3].

Attention to the health information. A marginally significant *Condition* and *Race* interaction emerged ($F(1, 335)=2.80$, $p=.096$, $\eta_p^2=.008$). Simple effects revealed that African

moderated the relationship between *Condition* and the primary study outcomes. These analyses are reported in the online supplement.

[3] The percentage of African American and European Americans who reported other demographic variables (e.g., their gender, socioeconomic status, and/or age) are presented in the online supplement.

Americans in the targeting condition reported paying less attention to the health messages than African Americans in the control condition ($F(1, 335)=4.10$, $p=.044$, $d=-.22$). Exposure to targeted (versus non-targeted) messages had no effect on attention for European Americans ($F(1, 335)=.07$, $p=.791$, $d=.03$). All other simple effects were non-significant ($ps>.165$). Additionally, neither the main effect of *Condition* ($F(1, 335)=1.72$, $p=.190$, $d=-.14$) nor *Race* ($F(1, 335)=0.11$, $p=.739$, $d=.04$) were significant.

Source evaluations. A significant *Condition* and *Race* interaction emerged ($F(1, 335)=4.56$, $p=.033$, $\eta_p^2=.013$). For African Americans, receipt of targeted, versus non-targeted, messages produced more negative evaluations of the information source ($F(1, 335)=6.20$, $p=.013$, $d=-.27$). European Americans, in contrast, exhibited favorable evaluations of the source, regardless of whether they were targeted ($F(1, 335)=.20$, $p=.656$, $d=.05$). All other simple effects were not significant ($ps>.108$). Additionally, neither the main effect of *Condition* ($F(1, 335)=2.35$, $p=.126$, $d=-.17$) nor *Race* ($F(1, 335)=0.01$, $p=.919$, $d=-.01$) were significant.

Table 2

Means for the primary study outcomes

	Targeting (HIV)	Targeting (flu)	Control (HIV)	Control (flu)
Self-Attribution				
African American	2.88 (.174)	3.20 (.176)	1.94 (.187)	2.08 (.182)
European American	3.02 (.170)	2.98 (.159)	1.83 (.164)	2.09 (.168)
Attention				
African American	7.74 (.188)	8.16 (.190)	8.50 (.203)	8.18 (.197)
European American	8.00 (.183)	8.25 (.172)	8.01 (.177)	8.14 (.181)
Source Evaluations				
African American	6.97 (.234)	7.02 (.236)	7.94 (.252)	7.26 (.246)

European American	7.20 (.228)	7.53 (.214)	7.30 (.221)	7.23 (.226)

Note: Reported values are listed as: mean (standard error)

Summary

Study 2 findings supported several of our hypotheses. Analyses showed that the targeting manipulation effectively increased perceptions of relevance relative to the control condition; thus, participants in the targeting condition reported stronger self-attributions than participants in the control condition, regardless of their race. However, signaling relevance of health information through social identities (e.g., race) only produced negative outcomes for African Americans. Specifically, African Americans who received targeted (versus non-targeted) information exhibited marginal reductions in attention and reported more negative source evaluations. European Americans, in contrast, showed non-significant effects in response to the targeting manipulation. Notably, these findings are in direct contrast to practitioners' expectations reported in Study 1.

Contrary to our predictions that targeting would produce the strongest consequences for African Americans in response to HIV information, we did not observe moderation by information content, suggesting that the consequences associated with leveraging relevance based on social identities generalized across HIV and flu.

Study 3

Why might signaling relevance through social identities reduce attention and produce more negative source evaluations for African Americans, but not European Americans? Because Study 2 revealed that the consequences associated with targeting were moderated by participants' race, Study 3 focused primarily on understanding why negative outcomes emerged

for African Americans. Prior research shows that members of marginalized groups, such as African Americans, exhibit greater sensitivity to microaggressions and other stigma cues than majority groups (e.g., European Americans) because they have been historically marginalized on the basis of their group membership (Chan & Mendoza-Denton, 2008; London, Downey, Romero-Canyas, Rattan, & Tyson, 2012; Mendoza-Denton et al., 2002). Detection of stigma cues is particularly important in the context of message receptivity because people generally experience social identity threat when they anticipate or perceive that they are being negatively evaluated or judged on the basis of their group membership. Therefore, if African Americans perceive that they are receiving health information due to their social identity (e.g., their race), the targeting manipulation may elicit perceptions of being stereotyped or unfairly judged on the basis of their group membership (Stangor & Lange, 1994). Moreover, the targeting manipulation may fail to evoke social identity threat among European Americans because it is less likely to activate experiences, attitudes, and cognitions related to being stereotyped on the basis of race. As such, Study 3 tested perceptions of being unfairly judged as a possible mechanism to explain why signaling relevance through social identities negatively impacts the primary study outcomes (attention and source evaluations).

In addition to measuring the proposed mechanism, we also manipulated the mechanism by including or excluding racial identity cues that could amplify or ameliorate the targeting manipulation (Spencer, Zanna, & Fong, 2005). We expected that the targeting manipulation would cause African Americans to feel stereotyped or unfairly judged due to perceptions that their racial identity is being used as a relevance cue. Therefore, we hypothesized that inclusion of racial identity cues (e.g., racially diverse faces on a brochure cover) would strengthen African Americans' perceptions that their racial identity was being used as the basis for information

dissemination. Although prior research suggests that images of culturally similar others may facilitate message receptivity because these identity cues signal personal relevance, this benefit may only emerge in non-threatening contexts. If identity cues are utilized in threatening contexts (e.g., when one feels stereotyped), exposure to identity cues may exacerbate feelings of threat (Purdie-Vaughns et al., 2008).

To test our research questions, Study 3 used a subtle targeting manipulation that eliminated the explicit reference to demographics that was included in Study 2. The increased subtlety allowed us to investigate whether participants showed differential sensitivity to a more ambiguous targeting manipulation as a function of their racial identity, consistent with previous research (Mendoza-Denton et al., 2002). As such, we expected that Study 3 would replicate Study 2 with one key difference; in contrast to Study 2, exposure to the subtle targeting manipulation would increase self-attributions only for African Americans.

Sample

200 European American (50.5% male, 82.1% had at least some college, age: *M*= 35.24, *SD*=10.85) and 202 African American[4] (35.0% male, 90.6% had at least some college, age: *M*=34.67, *SD*= 11.41) adults recruited from Turkprime completed our online study. 77 participants who identified with another racial identity or as multiracial were excluded before data analysis.

Procedure

Participants were randomly assigned to one of eight conditions in a 2 (*Condition*: Targeting, Control) X 2 (*Participant race*: African American, European American) X 2

[4] African Americans were recruited using a Turkprime panel. As such, they were unaware that their race was being used as the basis for recruitment.

(*Brochure type*: Racially Diverse, Control) between-subjects design. In contrast to Study 2, all participants read information about HIV.

The cover story and procedure generally followed the paradigm used in Study 2. At the beginning of the experiment (*Control* condition) or after reporting their demographics (e.g., race, gender, socioeconomic status, and age; *Targeting* condition), participants saw an HIV brochure cover depicting racially diverse adults (*Diverse* brochure) or a multicolored swirl (*Control* brochure) with the following instructions: "Please read information from the following brochure, which has been selected for you." To increase the subtlety of the targeting manipulation, the instructions in Study 3 omitted the direct reference to receiving information as a function of identity (e.g., "based on the demographic information provided") that was used in Study 2.

The brochure covers, entitled "HIV Facts", were obtained through an online image search (see online supplement for details). The racially diverse brochure cover depicted predominantly African American and Latino individuals and couples, and the multicolored swirl brochure was designed to serve as a control that excluded racial identity cues. The brochure covers were piloted on Mturk and matched on a number of attributes (e.g., interesting, useful, attractive). Additional information about the survey items included in the pilot survey are reported in the online supplement.

Following the experimental manipulations, all participants read the HIV messages employed in Study 2. Participants received HIV information due to the clearly demonstrable racial health disparities in HIV prevention that have informed several persuasive efforts (CDC, 2013; CDC, 2019).

After reading the HIV messages, participants responded to the survey items used in Study 2 regarding their self-attributions, attention (r=.84), and source evaluations (α =.86). To assess

the proposed mechanism, participants answered three items on Likert-type scales regarding their perceptions of being unfairly judged ("To what extent did you feel that you received the information because you were being unfairly judged"; 1, *Not at All,* to 9, *A Great Deal*; "To what extent did you feel that you received the health information because of (mis)perceptions about people from your demographic group", "I felt that I was being racially stereotyped when I was given the health information"; 1, *Not at All,* to 9, *Extremely;* α =.76*).* Means and standard errors for the following results are reported in Table 3.

Results

Attributions for receiving the health information. Replicating Study 2, a significant main effect of *Condition* revealed that participants who saw targeted information were more likely to make self-attributions than participants in the control condition ($F(1, 394)=3.88$, $p=.050$, $d=.20$). These findings offer evidence that the subtle targeting manipulation was effective.

A marginal *Condition* and *Race* interaction also emerged on self-attributions ($F(1, 394)=3.29$, $p=.070$, $\eta_p^2=.008$). Simple effects revealed that African Americans in the targeting condition made stronger self-attributions than African Americans in the control condition ($F(1, 394)=7.19$, $p=.008$, $d=.27$) and European Americans in the targeting condition ($F(1, 394)=5.65$, $p=.018$, $d=.24$). European Americans, however, were equally likely to make self-attributions for receiving the information, regardless of whether they were targeted ($F(1, 394)=.01$, $p=.913$, $d=.01$). Moreover, African Americans and European Americans made equally strong self-attributions in the control condition ($F(1, 394)=.03$, $p=.869$, $d=-.02$). Although the attribution pattern observed for African Americans replicates Study 2, the subtle targeting manipulation no longer increased self-attributions among European Americans.

The marginal two-way interaction was qualified by a significant *Condition, Race,* and *Brochure Type* interaction for participants' self-attributions ($F(1, 394)=7.62$, $p=.006$, $\eta_p^2=.019$). Simple effects revealed significant differences among participants who saw the control brochure; African Americans in the targeting condition were more likely to make self-attributions than (a) African Americans in the control condition ($F(1, 394)=11.34$, $p=.001$, $d=.34$) and (b) European Americans in the targeting condition ($F(1, 394)=9.48$, $p=.002$, $d=.31$). However, African Americans who saw the diverse brochure were equally likely to make self-attributions in the targeting and control condition ($F(1, 394)=.26$, $p=.612$, $d=.05$). Furthermore, *Brochure type* had no effect on African Americans' self-attributions within the targeting ($F(1, 394)=1.38$, $p=.241$, $d=-.12$) or control condition ($F(1, 394)=2.50$, $p=.115$, $d=.16$). None of the other simple effects were significant ($ps >.132$). Taken together, findings suggest that for African Americans, the presence of racial identity cues on the diverse brochure may function in a similar manner to the targeting manipulation. None of the other main effects or two-way interactions were significant (all $ps>.114$).

As in Study 2, we examined participants' qualitative responses for why they believed they received the information. After coding responses for explicit references to racial identity, analyses showed that among African Americans in the targeting condition, 29.2% who saw the diverse brochure and 18.0% who saw the control brochure identified their racial identity as a reason for receiving the information. Additionally, among African Americans in the control condition, 8.5% who saw the diverse brochure and 5.3% who saw the control brochure identified their racial identity. Among European Americans in the targeting condition, 2.0% who saw the diverse brochure and 8.5% who saw the control brochure identified their race as a reason they

received the information. However, 0% of European Americans in the control condition identified their race.

Attention to the health information. As in Study 2, a marginal *Condition* and *Race* interaction emerged ($F(1, 394)=3.40$, $p=.066$, $\eta_p^2=.009$). Subsequent analyses revealed cross-over, but non-significant, simple effects. African Americans reported equal levels of attention in the targeting and control condition ($F(1, 394)=0.98$, $p=.323$, $d=-.10$), though the pattern of means replicated Study 2. The pattern of means for European Americans in the targeting (versus control) condition, in contrast, showed increased attention to the information ($F(1, 394)=2.62$, $p=.107$, $d=.16$). All other simple effects were non-significant (all ps$>.142$). Additionally, none of the main effects, remaining two-way interactions, or the three-way interaction were significant (all ps$>.131$).

Source evaluations. A marginal *Condition* and *Race* interaction also emerged on participants' source evaluations ($F(1, 394)=3.15$, $p=.077$, $\eta_p^2=.008$). Replicating Study 2, African Americans who saw targeted information exhibited more negative evaluations of the information source than African Americans in the control condition ($F(1, 394)=6.88$, $p=.009$, $d=-.26$) and European Americans in the targeting condition ($F(1, 394)=8.07$, $p=.005$, $d=-.29$). The targeting manipulation produced no significant difference on European Americans' source evaluations ($F(1, 394)=.01$, $p=.916$, $d=-.01$). Moreover, African Americans and European Americans in the control condition reported equally favorable evaluations of the information source ($F(1, 394)=.13$, $p=.716$, $d=-.04$). Marginal and significant effects of *Condition* ($F(1, 394)=3.71$, $p=.055$, $d=-.19$) and *Race* ($F(1, 394)=5.22$, $p=.023$, $d=-.23$), respectively, showed that participants in the control condition and European Americans reported more favorable

evaluations of the information source. None of the remaining main effects, two-way interactions, or the three-way interaction were significant (all *p*s >.578).

Table 3

Means for the primary study outcomes

	Targeting (Diverse)	Targeting (Control)	Control (Diverse)	Control (Control)
Self-Attribution				
African American	2.23 (.141)	2.46 (.138)	2.13 (.142)	1.83 (.129)
European American	2.18 (.136)	1.85 (.142)	1.89 (.131)	2.11 (.142)
Attention				
African American	8.10 (.149)	8.35 (.146)	8.38 (.151)	8.36 (.137)
European American	8.43 (.145)	8.46 (.151)	8.37 (.139)	8.04 (.151)
Source Evaluations				
African American	7.08 (.186)	7.12 (.182)	7.49 (.188)	7.66 (.171)
European American	7.62 (.180)	7.62 (.188)	7.68 (.174)	7.60 (.188)

Note: Reported values are listed as: mean (standard error)

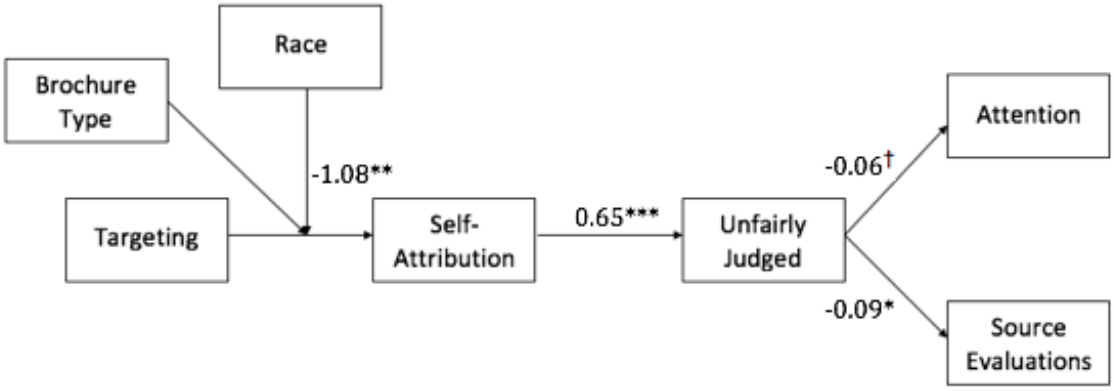
Modeling the indirect effect

We utilized AMOS v. 25.0 to identify the mechanism underlying the relationship between targeting and negative outcomes for African Americans. Consistent with the ANOVA analysis, we expected that exposure to the targeting manipulation and/or racial identity cues on the HIV brochure would increase perceived relevance (e.g., self-attributions) for African Americans. Stronger self-attributions would, in turn, predict the hypothesized mechanism: feeling unfairly judged. As a next step, we tested the extent to which perceptions of being unfairly judged predicted the primary study outcomes (see Figure 1). For the current and

subsequent models, we account for (a) the effects of the experimental factors (e.g., *Condition*, *Race*, and *Brochure type)* on each path, and (b) the effect of self-attributions on the primary study outcomes. Although the paths of greatest theoretical interest are presented below, all model parameters and test statistics are reported in the online supplement for interested readers.

Analyses revealed sufficient fit statistics (attention: $X^2(14)=10.32$, p=.739; CFI=1.00, TLI=1.18, RMSEA= .000; source evaluations: $X^2(14)=7.25$, p=.925; CFI=1.00, TLI=1.31, RMSEA= .000). As reported in ANOVA, a significant three-way interaction emerged on self-attributions (*b*=-1.08, *SE*=.39, *p*=.005). Stronger self-attributions predicted increased perceptions of being unfairly judged (*b*=.65, *SE*=.09, *p*<.001) which, in turn, predicted marginal reductions in attention to the health information (*b*=-.06, *SE*=.03, *p*=.062) and more negative source evaluations (*b*=-.09, *SE*=.04, *p*=.016).

Figure 1. Modeling the indirect effect of *Targeting* on the study outcomes



Note: Coefficients are unstandardized. † *p*<.10, * *p* < .05, ** *p* < .01, *** *p* < .001

Summary

Study 3 generally replicated Study 2's findings using a subtle targeting manipulation. As in Study 2, participants were more likely to perceive relevance (e.g., make self-attributions) in the targeting, versus control, condition; however, this effect was qualified by a three-way interaction. Although African Americans who saw the control brochure were more likely to report self-attributions in the targeting (versus control) condition, African Americans who saw the diverse brochure were equally likely to make self-attributions in the targeting and control conditions. Thus, in contrast to our initial predictions, although the racial identity cues did not appear to amplify the targeting manipulation, findings suggested that the inclusion of racial identity cues was functionally similar to the targeting manipulation. European Americans, however, showed non-significant differences in response to the targeting manipulation and racially diverse brochure. Replicating Study 2, a marginal interaction showed that African Americans in the targeting condition reported more negative source evaluations than African Americans in the control condition. Although non-significant, the pattern of means observed for attention were also consistent with Study 2. Further replicating Study 2, European Americans showed non-significant differences on attention and source evaluations in response to the targeting manipulation.

In line with our hypotheses, Study 3 identified the mechanism producing negative outcomes for African Americans: perceptions of being unfairly judged. Modeling the indirect effect of targeting on the primary study outcomes revealed that exposure to the targeting manipulation or racially diverse brochure increased perceived relevance (e.g., self-attributions) for African Americans, but not European Americans. Increased self-attributions predicted stronger perceptions of being unfairly judged, and feeling judged predicted marginal and

significant reductions in attention and source evaluations, respectively. As such, findings suggest that signaling relevance through social identities may produce negative outcomes for African Americans due to social identity threat.

Study 4

Although Study 3 identified the psychological process through which perceiving relevance produced negative consequences, particularly for African Americans, Study 4 sought to determine whether social identity threat emerges (a) merely in response to identity activation or (b) due to the signaled relevance of activated identities. To test this research question, we eliminated study instructions stating that the information had been selected for participants. We hypothesized that if identity activation alone produces social identity threat, African Americans should report stronger self-attributions and exhibit negative effects on attention and source evaluations, consistent with the previous studies. However, if identity threat is being induced by the signaled relevance of racial identities to the information (e.g., African Americans infer that information selection is based on assumptions about their group membership), then mitigating perceptions that social identities are being used as the basis for information selection should attenuate the negative consequences observed in the previous studies.

Sample

223 European American (54.3% male, 87.5% had at least some college, age: M= 36.04, SD= 11.47) and 251 African American (33.9% male, 91.6% had at least some college, age: M= 33.65, SD= 10.52) adults recruited from Turkprime completed our online study. 64 participants who identified with another racial identity or as multiracial were excluded before data analysis.

Procedure

As in Study 3, participants were randomly assigned to one of eight conditions in a 2 (*Condition:* Targeting, Control) X 2 (*Participant race*: African American, European American) X 2 (*Brochure cover*: Racially Diverse, Control) between-subjects design.

The procedure followed the paradigm used in Study 3 with one exception. At the beginning of the study (*Control* condition) or after providing their demographics (*Targeting* condition), participants received an HIV brochure cover depicting racially diverse individuals (*Diverse* brochure) or a multicolored swirl (*Control* brochure). Next, they received instructions stating, "Today you'll be reading health information from this brochure." As such, although participants in the targeting condition still reported their demographics at the beginning of the study, the instructions did not explicitly mention that the information had been selected for participants.

After reading the HIV information, participants responded to the survey items about their (a) self-attributions, (b) attention (r=.84), (c) source evaluations (α =.88), and (d) perceptions of being unfairly judged (α =.72). Means and standard errors are reported in Table 4.

Results

Attributions for receiving the health information. Analyses revealed a main effect of *Brochure Type* ($F(1, 466)=4.17$, $p=.042$, $d=-.19$), such that participants who saw the control (versus racially diverse) brochure reported stronger self-attributions for receiving the information. In contrast to the previous studies, analyses revealed a non-significant main effect of *Condition* for self-attributions ($F(1, 466)=.22$, $p=.640$, $d=.04$), suggesting that activating identities through the targeting manipulation (but not linking identities to information) produced no significant impact on participants' self-attributions. Furthermore, neither the *Condition* and

Race interaction ($F(1, 466)=.16$, $p=.693$, $\eta_p^2=.000$) nor the *Condition*, *Race,* and *Brochure Type* interaction ($F(1, 466)=.03$, $p=.871$, $\eta_p^2=.000$) were significant. Analyses also revealed that neither the main effect of *Race* nor the remaining two-way interactions were significant (all *p*s>.078).

As in the previous studies, we examined participants' qualitative responses for why they believed they received the information. After coding responses for the explicit identification of racial identity, analyses showed that among African Americans in the targeting condition, 7.9% who saw the diverse brochure and 4.9% who saw the control brochure identified their racial identity as a reason for receiving the information. Among African Americans in the control condition, 4.7% who saw the diverse brochure and 6.3% who saw the control brochure identified their racial identity. Among European Americans in the targeting condition, 0% who saw the diverse brochure and 3.3% who saw the control brochure identified their race as a reason for receiving the information. As in Study 3, 0% of European Americans in the control condition identified their race.

Attention to the health information. In contrast to the previous studies, a significant main effect of *Condition* showed that participants reported paying greater attention to the information in the targeting, versus control, condition ($F(1, 466)=5.97$, $p=.015$, $d=.23$). However, none of the other main effects, two-way interactions, or three-way interactions were significant (all *p*s>.285).

Source evaluations. None of the main effects, two-way interactions, or three-way interactions were significant (all *p*s>.299).

Table 5

Means for the primary study outcomes

	Targeting (Diverse)	Targeting (Control)	Control (Diverse)	Control (Control)
Self-Attribution				
African American	1.92 (.108)	1.92 (.110)	1.89 (.107)	1.94 (.108)
European American	1.68 (.125)	1.98 (.110)	1.61 (.114)	1.91 (.113)
Attention				
African American	8.38 (.128)	8.51 (.130)	8.23 (.127)	8.19 (.128)
European American	8.54 (.148)	8.36 (.130)	8.20 (.135)	8.25 (.133)
Source Evaluations				
African American	7.63 (.177)	7.40 (.180)	7.52 (.175)	7.50 (.177)
European American	7.53 (.205)	7.71 (.181)	7.55 (.186)	7.40 (.184)

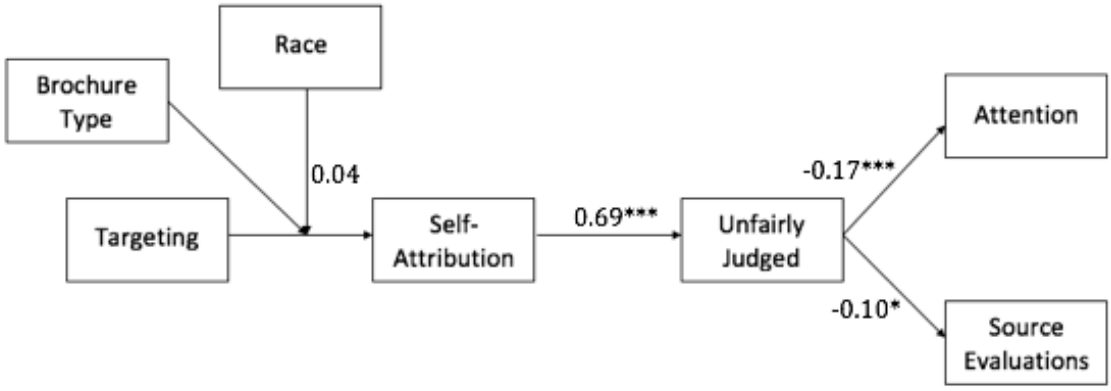
Note: Reported values are listed as: mean (standard error)

Modeling the indirect effect

Although ANOVA analyses revealed non-significant effects of *Condition*, *Race*, *Brochure Type*, and their interactions on self-attributions, we utilized AMOS v. 25.0 to determine whether the remaining pathways of the indirect effect modeled in Study 3 replicated. As such, we tested the extent to which self-attributions predicted perceptions of being unfairly judged, and whether feeling unfairly judged predicted reductions in attention and more negative source evaluations (see Figure 2). Analyses revealed sufficient fit statistics (attention: $X^2(14)=8.75$, p=.846; CFI=1.00, TLI=1.16, RMSEA= .000; source evaluations: $X^2(14)=8.05$, p=.887; CFI=1.00, TLI=1.28, RMSEA= .000).

As reported in ANOVA and in contrast to Study 3, the three-way interaction was not significant (*b*=.05, *SE*=.31, *p*=.870). However, the remaining pathways in the model replicated Study 3. Analyses showed that stronger self-attributions predicted greater perceptions of being unfairly judged (*b*=0.69, *SE*=.08, *p*<.001) which, in turn, predicted decrements in attention to the health information (*b*=-.17, *SE*=.03, *p*<.001) and more negative source evaluations (*b*=-.10, *SE*=.04, *p*=.012).

Figure 2. Modeling the indirect effect of *Targeting* on the study outcomes



Note: Coefficients are unstandardized. † *p*<.10, * *p* < .05, ** *p* < .01, *** *p* < .001

Summary

Study 4 findings generally diverged from Study 3. Specifically, analyses showed that when the targeting manipulation no longer signaled that social identities were being used as a relevance cue (e.g., when the instructions did not reference information selection after participants provided their demographics), participants in the targeting (versus control) condition no longer reported stronger self-attributions. In contrast to the previous studies, the direct effect

of targeting on attention suggested that targeting may be beneficial. Specifically, participants in the targeting (versus control) condition reported greater attention to the information. Notably, the marginal and significant direct effects on attention and source evaluations that were observed in Studies 2-3 no longer emerged. Therefore, African Americans in the targeting (versus control) condition no longer exhibited decrements in attention and more negative source evaluations. Findings for European Americans, however, replicated Studies 2-3; European Americans continued to show non-significant effects on attention and source evaluations in response to the targeting manipulation.

Although the two and three-way interactions using *Condition, Race,* and *Brochure Type* no longer predicted self-attributions, the remaining pathways of the modeled indirect effect replicated Study 3. Therefore, self-attributions predicted increased perceptions of being unfairly judged, and feeling judged predicted significant reductions in attention and more negative source evaluations.

Taken together, Studies 3 and 4 demonstrate that identity activation alone does not elicit social identity threat for African Americans. However, when African Americans perceive that relevance is being signaled through their racial identity (e.g., when the targeting manipulation suggests that message selection takes their reported demographics into account, as in Study 3), they are more likely to perceive relevance (make self-attributions). Perceiving relevance, in turn, elicits downstream consequences on attention and source evaluations through increased perceptions of being unfairly judged.

Study 5

Although prior research touts the benefits of message relevance, Studies 2-4 identify conditions under which leveraging relevance may impede persuasion. To understand why

perceived relevance is associated with greater perceptions of being unfairly judged, it is important to examine how relevance is being construed. Thus, to replicate and extend the previous studies, Study 5 had two primary aims. First, this study sought to examine how participants' beliefs about whether relevance is derived from an external (versus internal) source are reflected through their self-attributions. Second, Study 5 investigated the behavioral consequences that emerged in response to feeling targeted.

Although participants perceived greater relevance (e.g., made stronger self-attributions) in response to the blatant and subtle targeting manipulations (Studies 2-3), it is possible that they are detecting relevance from multiple sources: (a) an attribute about themselves that they personally identified (e.g., internally-derived relevance), and/or (b) an attribute about themselves that they believe has been identified by an external observer, such as the research team (e.g., externally-derived relevance). We hypothesize that, consistent with previous literature, relevance may facilitate persuasion when the recipient personally identifies the information as relevant. However, relevance may inhibit persuasion when recipients perceive that an external source (e.g., the research team) believes the information is relevant for them because these perceptions may heighten feelings of being unfairly judged. Therefore, targeting may elicit negative outcomes for recipients due to increased perceptions that relevance is derived from an external (versus internal) source.

Study 5 also sought to replicate and extend the indirect effect modeled in Study 3 by identifying both self-report and behavioral consequences that emerge in response to feeling unfairly judged. As such, Study 5 determined the extent to which self-report measures for the primary study outcomes predict actual behavior. Because behavior is a key outcome when considering the efficacy of persuasive appeals, Study 5 assessed several behaviors: participants'

recognition of the information content on a multiple-choice quiz, the proportion of unrelated thoughts reported in a cognitive elaboration task, preference to receive additional health information selected by the current information source (versus randomly), behavioral intentions, and uptake of the behavioral recommendations.

To test our hypotheses, Study 5 employed the blatant targeting manipulation (Study 2), which explicitly told participants that they were receiving information due to their provided demographics. We expected that use of the blatant targeting manipulation would increase self-attributions for both African Americans and European Americans, replicating Study 2. However, we also predicted that participants' construal of self-attributions would vary as a function of their race. As such, we hypothesized that participants' race would moderate the link between self-attributions and feeling unfairly judged; specifically, for African Americans, but not European Americans, making self-attributions would be associated with increased perceptions of being judged, which would, in turn, produce downstream consequences on self-reported and behavioral outcomes. Given that the primary goal of many persuasive efforts is to motivate behavioral change, whether leveraging relevance based on social identities facilitates or inhibits uptake of message-advocated behavior has particularly important theoretical and practical implications.

Sample

201 European American (48.3% female, 84.1% had at least some college, age: M=36.30, SD=10.90) and 200 African American (62.5% female, 90.5% had at least some college, age: M=35.40, SD=11.00) adults recruited from Turkprime completed our online study. 59 participants who identified with another racial identity or as multiracial were excluded before data analysis.

Procedure

Using Study 2's experimental design, participants were randomly assigned to one of eight conditions in a 2 (*Condition*: Targeted, Control) X 2 (*Participant race*: African American, European American) X 2 (*Information*: HIV, Flu) between-subjects design. Study 5 included both HIV and flu information to replicate the generalizability findings for information that were observed in Study 2.

The methodological design followed the procedure employed in Study 2. Following exposure to the HIV or flu paragraphs (Earl et al., 2016), participants answered five multiple-choice questions measuring their recognition of the health information and completed a thought-listing task. Using survey items from the previous studies, participants were asked about their (a) attention to the health information, (b) source evaluations ($\alpha = .85$), and (c) perceptions of being unfairly judged ($\alpha = .75$). Additional survey items were included to (1) improve the accuracy of the attention index, and (2) measure behavioral intentions and behavioral correlates of attention, source evaluations, and behavioral intentions. Details about the piloting of the new survey measures are presented in the online supplement for interested readers.

Attention to the health information

Self-report measure. To rule out methodological issues that arise from using a two-item index, we developed three new survey items to measure attention. Two items ("While I was reading the paragraphs, I felt distracted (R)", "While I was reading, I was having thoughts that were unrelated to the paragraphs (R)") were measured on a Likert-type scale ranging from 1, *Not at All*, to 9, *Very Much So*. A third item ("While I was reading the paragraphs, my mind was…") was measured on a Likert-type scale ranging from 1, *Completely on Unrelated Concerns*, to 7,

Completely on the Paragraphs. All five attention-related items were summed into an index (α =.83).[5]

Information recognition. Participants answered five multiple-choice questions regarding the content mentioned in the health information, and each question could be answered using one of four answer choices (e.g., "On average, there are more than _____ new HIV infections each year in the United States", A. 56,000, B. 65,000, C. 75,000, D. 92,000; "In order to be effective, antiviral medication should be taken within _____ hours of the onset of flu symptoms", A. 48-72 hours, B. 36-48 hours, C. 24-48 hours, D. 12-48 hours). Participants' accuracy was determined by the number of questions, out of five, answered correctly.

Cognitive elaboration: Proportion of unrelated thoughts. Following the recognition items, participants completed a thought-listing task in which they were given 2 minutes to record the thoughts, feelings, or ideas that came to mind while they were reading the information. Participants were provided with ten text boxes and were instructed to list only one thought per box. Based on previous recommendations, participants automatically advanced to the next survey page after 2 minutes and could not advance to the next page before the 2 minutes had passed (Cacioppo & Petty, 1981). Participants were asked to self-code the relatedness of their listed thoughts after answering the primary study outcomes to prevent their codes from influencing their subsequent survey responses (Schwarz, 2010). To code their thoughts, participants saw each of their statements and evaluated each statement on its relatedness to the HIV or flu information (1=Related thought, 2= Unrelated thought). Cognitive elaboration was

[5] The patterns observed for the five-item attention index replicated using the two-item index in the reported analyses.

measured using the proportion of thoughts that participants self-identified as unrelated[6] to the information.

Source evaluations

Preference to receive additional health information from the current information source. Behavioral correlates of source evaluations were recorded using participants' preference to receive additional health information that was selected by the research team (versus randomly). At the end of the study, participants were told that they would be reading additional health information and were asked, "Would you prefer to receive health information chosen by the research team or health information chosen randomly?". Participants were forced to choose one of these two options and then rated the strength of their preference using a Likert-type scale ranging from 1, *Strongly Prefer at Random,* to 6, *Strongly Prefer Research Team*. After participants reported the strength of their preference, they were told that they would not be reading more information due to amount of time they had already spent on the study.

Behavioral intentions and uptake of behavioral recommendations

Behavioral intentions. Participants' intentions to engage in behavior recommended by the health information were measured using two items adapted to match the health condition ("The FLU information made me think about washing my hands frequently"/ "The HIV information made me think about using condoms", "I intend to discuss the importance of hand washing with my loved ones" / "I intend to discuss the importance of condom usage with my loved ones").

[6] An external coder re-coded participants' self-codes and showed sufficient reliability for identifying the proportion of unrelated thoughts (kappa=.863). Given the high reliability between the external coder and participants' codes, as well as the additional insight participants may have into the meaning of their statements that an external coder would not, we used participants' self-codes for data analysis.

These items were measured on a Likert-type scale ranging from 1, *Strongly Disagree,* to 7, *Strongly Agree,* and were aggregated into an index (r=.64)[7].

Uptake of behavioral recommendations. To assess whether the targeting manipulation impacted participants' uptake of the behavioral recommendations, participants were asked two items. First, participants were asked to check a box if they wanted to receive a coupon for a behavior-relevant item: hand sanitizer (flu condition) or condoms (HIV condition). Participants who checked the box received a link to an external website where they could print a manufacturer's coupon for the item. Second, participants were asked to check a box if they wanted to receive information about a nearby location to get a flu shot (flu condition) or get screened for HIV (HIV condition). Participants who checked the box were directed to an external website that provided the location information. To measure participants' uptake of behavioral recommendations, we counted the number of times, ranging from 0 to 2, that participants selected message-consistent options.

Perceptions about the source of relevance. Participants' perceptions about the source of relevance (e.g., whether relevance was derived from an internal or external source) were measured using two items ranging from 1, *Not at All*, to 9, *Very Much So*. Perceptions about an internally-derived relevance source was measured using one item ("To what extent did you feel

[7] Because data was collected during flu season, we recognized that some participants would have already received their annual flu shot. Given the difficulty of interpreting responses to survey items about intentions to get a flu shot if participants already received a shot, we measured participants' intentions to get a flu shot (be screened for HIV) with two questions. First, participants saw a dichotomous item: "Have you gotten a flu shot (been screened for HIV) in the last six months?" When participants answered no, they saw a follow-up item ("I intend to get a flu shot (get screened for HIV) the next time I visit my healthcare clinic") using a Likert-type scale ranging from 1, *Strongly Disagree*, to 7, *Strongly Agree*. Due to a substantial loss in statistical power after dropping participants who had already had a flu shot (20.1%) or been screened for HIV (17.0%), we removed this item from analyses. The reported pattern of findings replicated when these participants were dropped.

you received the information because it was relevant to you?") and perceptions about an externally-derived relevance source was measured using one item ("To what extent did you feel you received the information because the research team thought the information was relevant to you?").

Analytic Strategy

As a first step, we sought to replicate the direct effects of targeting on the primary study outcomes. As such, we conducted ANOVAs examining the effects of *Condition*, *Race*, and *Information* on self-attributions, self-reported attention, and source evaluations. These analyses tested our prediction that targeting would elicit negative outcomes for African Americans, but not European Americans. Thus, we examined whether being in the targeting (versus control) condition would decrease attention and produce more negative source evaluations for African Americans, but not European Americans. Because we used the blatant targeting manipulation, which told participants they were receiving the messages due to their provided demographics, we expected that both African Americans and European Americans would report stronger self-attributions in the targeting (versus control) condition.

Next, we tested whether self-report measures for attention and source evaluations extend to actual behavior by replicating and extending the indirect effect modeled in Study 3 (see Figure 3). In particular, the model assessed whether self-report measures were significant predictors of their behavioral correlates. Finally, to examine the consequences associated with perceiving different relevance sources (e.g., internally versus externally-derived) we use (a) multiple linear regression to examine how different sources of relevance map onto self-attributions, (b) ANOVA to examine how sources of relevance are predicted by experimental factors (*Condition*, *Race*, and

Information), and (c) path analyses to examine how different sources of relevance impact the previously modeled indirect effect (see Figure 4).

Replicating Study 2, ANOVA analyses showed non-significant effects of *Information* (HIV or flu). As such, analyses relevant to the primary study hypotheses are presented in the following results, and all statistical means and standard errors are listed in Table 5.

Results

Attributions for receiving the health information Replicating Studies 2 and 3, analyses showed that the targeting manipulation was effective. A significant main effect of *Condition* revealed that participants in the targeting condition were likely to make self-attributions than participants in the control condition ($F(1, 392)=74.69$, $p<.001$, $d=.87$). However, the main effect of *Race* was not significant ($F(1, 392)=.24$, $p=.626$, $d=.05$). Further replicating Study 2 and consistent with our predictions, the *Condition* and *Race* interaction was not significant ($F(1, 392)=.13$, $p=.721$, $\eta_p^2=.000$).

As in the prior studies, we examined participants' attributions about why they believed they received the information. After coding participants' qualitative responses for explicit references to racial identity, analyses showed that 16.0% of African Americans who were targeted to receive HIV information explicitly identified their racial identity, compared to 1.9% who saw HIV information in the control condition, 5.9% who were targeted to receive flu information, and 0% who saw flu information in the control condition. 0% of European Americans explicitly identified their race across the targeting and information manipulations.

Attention to the health information. Analyses revealed a significant main effect of *Condition* such that participants in the targeting (versus control) condition reported paying less attention to the information ($F(1, 392)=4.61$, $p=.032$, $d=-.22$). However, this effect was qualified

by a significant *Condition* and *Race* interaction ($F(1, 392)=4.12$ $p=.043$, $\eta_p^2=.010$). Simple effects replicated the patterns observed in Studies 2 and 3: African Americans in the targeting condition reported significantly less attention to the information than African Americans in the control condition ($F(1, 392)=8.73$, $p=.003$, $d=-.30$) and European Americans in the targeting condition ($F(1, 392)=5.48$; $p=.020$, $d=-.24$). However, the targeting manipulation did not produce a significant effect on attention for European Americans ($F(1, 392)=.01$; $p=.933$, $d=-.01$). Moreover, African Americans and European Americans reported equal levels of attention to the information in the control condition ($F(1, 392)=.29$; $p=.519$, $d=.05$).

Source evaluations. In contrast to the marginal *Condition* and *Race* interactions observed in Studies 2 and 3, neither the main effect of *Condition* ($F(1, 393)=.03$, $p=.862$, $d=.02$), the main effect of *Race* ($F(1, 393)=3.02$, $p=.083$, $d=-.18$), nor the *Condition* and *Race* interaction were significant ($F(1, 393)=1.84$, $p=.176$, $\eta_p^2=.005$).

Table 5

Means for the primary study outcomes

	Targeting (HIV)	Targeting (flu)	Control (HIV)	Control (flu)
Self-Attribution				
African American	2.90 (.155)	2.86 (.152)	1.92 (.150)	2.04 (.158)
European American	2.80 (.147)	2.94 (.158)	1.82 (.152)	1.96 (.155)
Attention 5 item				
African American	7.06 (.178)	7.07 (.176)	7.40 (.175)	7.80 (.184)
European American	7.35 (.171)	7.62 (.184)	7.35 (.176)	7.65 (.182)
Attention 2 item				
African American	7.90 (.164)	7.74 (.162)	8.07 (.161)	8.44 (.169)
European American	8.32 (.158)	8.18 (.169)	8.05 (.162)	8.43 (.167)

Source Evaluations				
African American	7.53 (.181)	7.43 (.179)	7.38 (.177)	7.88 (.186)
European American	7.67 (.174)	8.08 (.186)	7.54 (.179)	7.82 (.182)

Note: Reported values are listed as: mean (standard error)

Modeling the indirect effect

Next, we sought to replicate and extend the indirect effect modeled in Study 3 to determine whether self-reports of attention and source evaluations predicted behavior. To test this possibility, we generated a model using AMOS v. 25.0 (Figure 3). First, the model tested (a) the effects of the targeting manipulation on self-attributions, (b), the effects of self-attributions on perceptions of being unfairly judged, and (c) the extent to which the relationship between self-attributions and feeling unfairly judged was moderated by participants' race. Although participant race moderated the link between *Condition* and self-attributions in Study 3, we predicted that the blatant targeting manipulation would produce stronger self-attributions for participants regardless of race. However, we also expected that because African Americans and European Americans would have different construals of self-attributions, self-attributions may be associated with feeling unfairly judged for African Americans, but not European Americans.

As a next step, the model tested the downstream consequences of feeling unfairly judged on self-report measures (e.g., attention and source evaluations) and behavior. In particular, we examined the relationship between (a) self-reported attention and its behavioral correlates (information recognition and the proportion of unrelated thoughts reported in the cognitive elaboration task) and (b) source evaluations and its behavioral correlate (participants' preference to receive additional health information selected by the research team, versus randomly). Finally,

we examined the extent to which self-reports for both attention and source evaluations predicted behavioral intentions, and subsequently, participants' uptake of behavioral recommendations.

Examining the process through which targeting reduces self-reported attention

As reported in ANOVA, analyses revealed that participants in the targeting condition reported stronger self-attributions (*b*=.94, *SE*=.11, *p*<.001). Self-attributions predicted greater perceptions of feeling unfairly judged (*b*=.40, *SE*=.08, *p*<.001), but this relationship was qualified by a significant *Self-Attribution* and *Race* interaction showing that self-attributions predicted stronger perceptions of being unfairly judged for African Americans, but not European Americans (*b*=.39, *SE*=.14, *p*=.006). Feeling unfairly judged, in turn, predicted reductions in self-reported attention to the health messages (*b*=-1.33, *SE*=.17, *p*<.001) and more negative source evaluations (*b*=-.09, *SE*=.04, *p*=.020).

Behavioral measures of attention

Information recognition. Reductions in attention predicted worse recognition of the information content (*b*=.06, *SE*=.01, *p*<.001). Fit statistics for this model were sufficient ($X^2(23)=25.94$, p=.304; CFI=.997, TLI=.990, RMSEA= .018).

Cognitive elaboration: Proportion of unrelated thoughts. Reductions in attention were also associated with reporting a greater proportion of unrelated thoughts in the cognitive elaboration task (*b*=-.00, *SE*=.01, *p*=.005). Fit statistics for this model were sufficient ($X^2(23)=23.23$, p=.448; CFI=1.00, TLI=.999, RMSEA= .005).

Behavioral measure of source evaluations

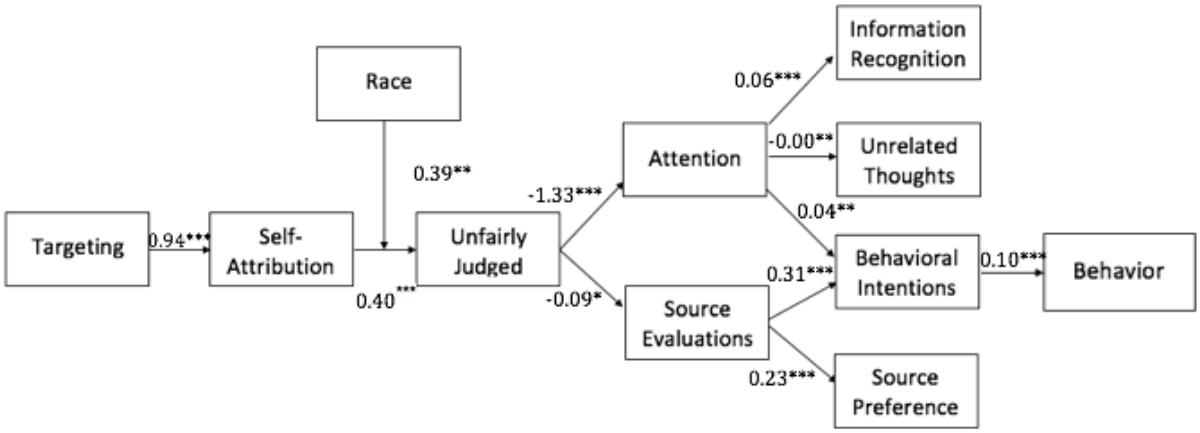
Source preference for receiving additional health information. Findings showed that more negative source evaluations were associated with a stronger preference to receive additional health information that was selected randomly, versus by the research team (*b*=.23, *SE*=.05,

p<.001). Fit statistics for this model were sufficient ($X^2(23)=23.72$, p=.419; CFI=.999, TLI=.997, RMSEA= .009).

B*ehavior intentions and uptake of behavioral recommendations*.

Reductions in attention and more negative source evaluations were also associated with weaker behavioral intentions ($b_{attention}$=.04, $SE_{attention}$=.01, $p_{attention}$<.001; $b_{sourceevaluations}$=.31, $SE_{sourceevaluations}$=.06, $p_{sourceevaluations}$<.001), which subsequently predicted decreased uptake of target behaviors ($b_{attention}$=.10, $SE_{attention}$=.02, $p_{attention}$<.001; $b_{sourceevaluations}$=.09, $SE_{sourceevaluations}$=.02, $p_{sourceevaluations}$<.001). Fit statistics across these models were sufficient (attention: $X^2(28)=23.59$, p=.703; CFI=1.00, TLI=1.01, RMSEA= .000; source evaluations: $X^2(28)=23.26$ p=.720; CFI=1.00, TLI=1.02, RMSEA= .000).

Figure 3. Modeling the indirect effect of *Targeting* on the study outcomes



Note: Coefficients are unstandardized. The coefficient reported for the pathway between behavioral intentions and behavior was obtained from the model using attention. For the model using source evaluations, *b*=0.09, *p*<.001. † *p*<.10, * *p* < .05, ** *p* < .01, *** *p* < .001

How might different sources of relevance be reflected in self-attributions?

Because the indirect effect modeled in Studies 3-5 demonstrated that perceiving relevance (e.g., making self-attributions) predicted stronger perceptions of being unfairly judged, we examined how perceptions that relevance is derived from an external, versus internal, source impacts the pathways observed in the previously tested model (see Figure 3). As a first step, we used multiple linear regression to assess how these two sources of relevance were reflected in self-attributions. Specifically, we included perceptions about an internally-derived relevance source (entered at Step 1) and an externally-derived relevance source (entered at Step 2) as predictors of self-attributions. Findings revealed that perceiving an internally-derived relevance source was a significant predictor of self-attributions (b=.060, t=2.87, p=.004, r=.14). However, when perceptions that relevance was derived from an external source was included as a simultaneous predictor, findings revealed that perceiving an externally-derived relevance source was a significant predictor of self-attributions (b=.146, t=5.81, p<.001, r=.28), but perceiving an internally-derived relevance source was no longer a significant predictor (b=-.010, t=-.435, p=.664, r=.02).[8]

Why might perceiving different sources of relevance impact perceptions of being unfairly judged?

Because targeting relies on presumptions about group characteristics, rather than

[8] Consistent with extant literature, perceiving an internally-derived source was correlated with beneficial outcomes, such as more positive source evaluations (r=.28, p<.001), a stronger preference to receive additional health information selected by the research team, versus randomly (r=.19, p<.001), stronger behavioral intentions (r=.36, p<.001), and greater uptake of the recommended behavior (r=.25, p<.001). However, perceiving relevance from an internal source was not correlated with self-reported attention (r=.05, p=.351), information recognition (r=.01, p=.839), or the proportion of unrelated thoughts reported in the cognitive elaboration task (r=-.07, p=.142). See supplemental materials for the full model.

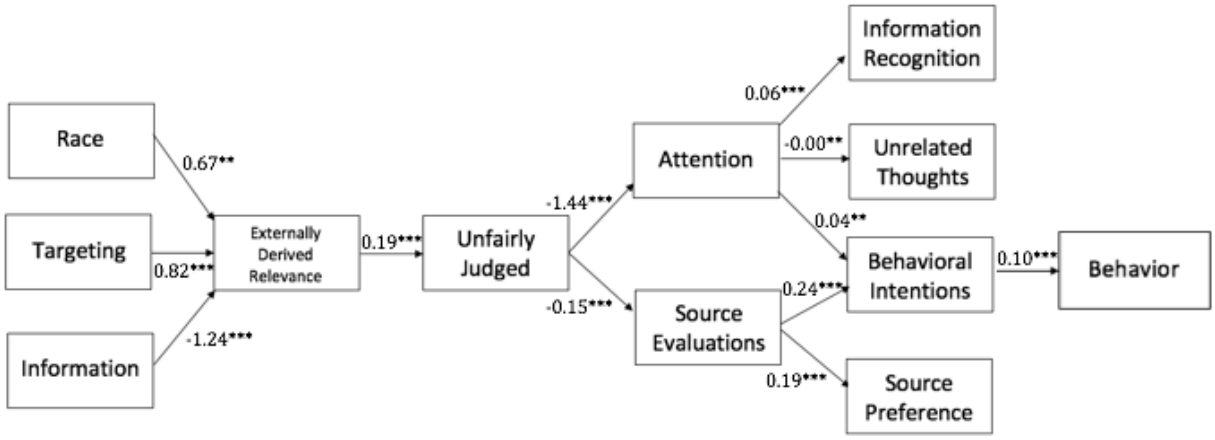
individuating attributes provided by the recipient, targeting may increase perceptions that an external source (e.g., the research team) believes the information is relevant for recipients, rather than increasing personal perceptions of relevance. Perceptions that an external source perceived the information to be relevant may, in turn, increase perceptions of being unfairly judged. Additionally, for African Americans, experiences of being stereotyped or mistreated on the basis of their racial identity may be chronically accessible (Stangor et al., 2011). Therefore, African Americans may be more sensitive to cues that an external source (e.g., the research team) perceived the information to be relevant for them, rather than something they personally perceived. We tested these predictions in two parts. First, using ANOVA, we examined how the experimental factors (*Condition, Race,* and *Information*) impacted participants' perceptions that relevance was derived from an external source. Given that perceptions of an externally-derived relevance source predicted self-attributions, we modeled the extent to which perceptions that relevance was derived from an external source predicted perceptions of being unfairly judged (Figure 4).

ANOVA analyses revealed main effects of *Condition* ($F(1, 393)=11.01$, $p<.001$, $d=.33$), *Race* ($F(1, 393)=7.32$, $p=.007$, $d=-.27$), and *Information* ($F(1, 393)=25.05$, $p<.001$, $d=.50$) on participants' perceptions that relevance was derived from an external source; participants in the targeting condition, participants who saw flu information, and African Americans were significantly more likely to perceive that the research team thought the information was relevant for them compared to participants in the control condition, participants who saw HIV information, and European Americans. None of the two or three-way interactions were significant (all *p*s >.162).

Modeling the indirect effect revealed sufficient fit statistics across study outcomes. As observed in ANOVA, participants in the targeting condition (b=.82, SE=.25, p<.001), participants who saw flu information (b=-1.24, SE=.25, p<.001), and participants who were African American (b=.67, SE=.25, p=.006) reported stronger perceptions that relevance was derived from an external source. Perceptions that relevance was derived from an external source predicted stronger perceptions of feeling unfairly judged (b=.19, SE=.03, p<.001), which subsequently predicted reductions in attention (b=-1.44, SE=.17, p<.001) and more negative source evaluations (b=-.15, SE=.04, p<.001). Further replicating the previously tested model, reductions in attention predicted worse information recognition (b=.06, SE=.01, p<.001; $X^2(18)=26.06$, p=.098; CFI=.967, TLI=.880, RMSEA= .033) and reporting a greater proportion of unrelated thoughts in the cognitive elaboration task (b=-.00, SE=.00, p=.005; $X^2(18)=22.79$, p=.199; CFI=.972, TLI=.898, RMSEA= .026). More negative source evaluations predicted a stronger preference to receive additional health information that was selected randomly, versus by the research team (b=.19, SE=.05, p<.001; $X^2(18)=23.89$, p=.159; CFI=.965, TLI=.893, RMSEA= .029). Reductions in attention and more negative source evaluations predicted weaker behavior intentions ($b_{attention}$=.04, $SE_{attention}$=.01, $p_{attention}$=.001; $b_{sourceevaluations}$=.24, $SE_{sourceevaluations}$=.06, $p_{sourceevaluatsions}$<.001) that decreased subsequent uptake of behavioral recommendations ($b_{attention}$=.10, $SE_{attention}$=.02, $p_{attention}$<.001; $X^2_{attention}(22)=23.58$, p=.369; CFI=.994, TLI=.979, RMSEA= .013; $b_{sourceevaluations}$=.09, $SE_{sourceevaluations}$=.02, $p_{evaluations}$<.001; $X^2_{sourceevaluations}(22)=22.69$, p=.419; CFI=.997, TLI=.992, RMSEA= .009). [9]

[9] After accounting for the shared variance between perceptions of being unfairly judged and perceptions that relevance was derived from an external source, findings indicate that externally-derived relevance was positively related to source evaluations and behavioral intentions, suggesting that relevance can be beneficial when participants do not feel judged. See supplemental materials for the full model.

Figure 4. Modeling the indirect effect of *Targeting* on the study outcomes



Note: Coefficients are unstandardized. The coefficient reported for the pathway between behavioral intentions and behavior was obtained from the model using attention. For the model using source evaluations, b=0.09, p<.001. † p<.10, * p < .05, ** p < .01, *** p < .001

Summary

Study findings demonstrated that perceiving relevance based on social identities had important behavioral implications, particularly for African Americans. Consistent with Study 2, these effects emerged regardless of the information content (e.g., HIV or flu) seen by participants. First, replicating Study 2, (which used the blatant targeting manipulation), both African Americans and European Americans reported stronger self-attributions in the targeting (versus control) condition. Further replicating the patterns observed in Studies 2 and 3, a significant direct effect of targeting on attention showed that African Americans in the targeting (versus control) condition reported reduced attention to the health information. In contrast to Studies 2 and 3, however, the targeting manipulation did not produce more negative source evaluations among African Americans. As in the earlier studies, the targeting manipulation produced non-significant effects on attention and source evaluations for European Americans.

Modeling the indirect effect of targeting on the primary study outcomes showed that both African Americans and European Americans in the targeting condition reported stronger self-attributions than participants in the control condition, replicating Study 2. However, consistent with our predictions, self-attributions were only associated with increased perceptions of being unfairly judged for African Americans. Stronger perceptions of being unfairly judged predicted decrements in self-reported attention and more negative source evaluations, and these self-report measures predicted subsequent behavior. Specifically, reductions in self-reported attention predicted worse recognition of the information content and reporting a greater proportion of unrelated thoughts in the cognitive elaboration task. More negative source evaluations predicted stronger preferences to receive additional health information that was selected randomly, rather than by the research team. Furthermore, reductions in self-reported attention and more negative source evaluations were associated with weaker behavioral intentions, which subsequently predicted decreased uptake of behavioral recommendations (e.g., opting to receive behavior-relevant coupons or information about nearby locations to receive a flu shot or HIV screening).

Taken together, these findings show that attempts to leverage relevance based on social identities, via information targeting, can produce consequences that extend beyond simply disliking people who may be stereotyping them. In fact, behavioral outcomes demonstrated that African Americans who are targeted exhibit worse processing of the information content and are less likely to comply with behavioral recommendations, suggesting that these findings have important theoretical and real-world implications.

Study 5 also provided evidence that leveraging identity-based relevance through information targeting produces detrimental outcomes for recipients because it increases participants' perceptions that relevance is derived from an external source, rather than increasing

personal perceptions of relevance. Specifically, findings showed that being targeted, being African American, or receiving flu information increased participants' perceptions that the research team perceived the information to be relevant for them, and these perceptions, in turn, predicted greater perceptions of being unfairly judged. As observed in the earlier models, feeling unfairly judged produced downstream consequences on self-reported attention, source evaluations, and behavioral outcomes.

Collectively, findings suggest that one reason why information targeting may backfire is that targeting increases participants' perceptions that relevance is derived from an external (versus internal) source, and these perceptions can heighten feelings of being unfairly judged. When people feel judged, they exhibit disengagement from the information content, the information source, and behaviors recommended by the information. Perceiving that relevance is derived from an external source may prompt feelings of being judged because recipients may infer that the research team is making information selections using (ill-informed) generalizations based on their group membership (e.g., their provided demographics). Moreover, because sensitivity to stigma cues may be heightened for some groups due to previous experiences of discrimination that fall along identity lines, the likelihood of perceiving that relevance is derived from an external source may also vary as a function of social identity.

General Discussion

The efficacy of persuasive appeals depends on features of the message, as well as the attributes of the message recipient. Although persuasive efforts often leverage relevance to motivate behavior change with the underlying assumption that relevance will bring information closer to target audiences and facilitate persuasion, little research examines how recipients' social identities may impact responses to relevance, particularly when they perceive that their

identities are being used as a relevance cue. Thus, the current work bridges literatures on persuasion and social identity to investigate whether and why attempts to leverage message relevance based on social identities may backfire. Specifically, study findings show that these efforts may backfire when message recipients feel unfairly judged, and recipients are likely to feel judged when (a) relevance is signaled using a marginalized racial identity, (b) recipients make self-attributions in response to receiving information, and (c) recipients perceive that relevance is derived from an external source.

First, Study 1 demonstrated that real-world information providers (e.g., medical practitioners), consistent with empirical literature, endorsed beliefs that leveraging relevance (by targeting health information to high-risk audiences) would improve patients' attention to information and facilitate better doctor-patient relationships. Furthermore, practitioners reported having targeted in the past, as well as intentions to target information in the future based on both medical history and visible identity cues (e.g., race; Hypothesis 1). In direct contrast to practitioners' expectations, however, Studies 2, 3 and 5 revealed that for African Americans, being in the targeting (versus control) condition was linked with reduced attention to the information (Studies 2 and 5) and more negative source evaluations (Studies 2-3; Hypothesis 2). Moreover, Study 5 demonstrated that the consequences that resulted from targeting extended beyond self-reports. For instance, reductions in self-reported attention predicted worse information recognition and reporting a greater proportion of unrelated thoughts during a cognitive elaboration task. More negative source evaluations predicted a stronger preference to receive additional health information that was selected randomly (versus by the research team). Furthermore, reductions in attention and source evaluations predicted weaker behavioral intentions, which subsequently decreased uptake of behavioral recommendations (e.g., opting to

receive a behavior-relevant coupon or find a location to receive a flu shot/get screened for HIV). Collectively, findings revealed that signaling relevance via social identities produced deleterious outcomes for African Americans, but had non-significant effects on European Americans.

Studies 3-5 also identified the mechanism underlying the relationship between perceived relevance and negative outcomes: increased perceptions of being unfairly judged (Hypothesis 3). Replication of the indirect effect modeled in Studies 3-5 showed that this effect was particularly robust. When participants were told that the information had been selected for them (Studies 3 and 5), being in the targeting (versus control) condition increased perceived relevance (e.g., self-attributions). However, the role of participants' racial identities varied as a function of which targeting manipulation they saw; when participants saw the subtle targeting manipulation (e.g., when they were not explicitly told they received information due to their demographics), African Americans, but not European Americans, reported stronger self-attributions. Stronger self-attributions, in turn, predicted greater perceptions of being unfairly judged. When participants saw the blatant targeting manipulation (e.g., when they were explicitly told they were receiving the information due to their demographics), both African Americans and European Americans reported increased self-attributions. However, the consequences associated with making self-attributions were moderated by participants' race. Specifically, stronger self-attributions only predicted increased perceptions of being judged for African Americans. Across studies, the modeled indirect effect showed that perceptions of being unfairly judged produced negative effects on attention, source evaluations, and uptake of behavioral recommendations.

Studies 3-4 tested whether these negative consequences are driven by identity activation alone, or whether one's social identity needs to be tied to the information directly for these consequences to emerge. Taken together, Studies 3-4 suggest that identity activation may be

necessary, but not sufficient, to produce iatrogenic effects for African Americans; instead, targeting may only elicit negative outcomes in contexts where African Americans' racial identities are being signaled as a relevance cue for persuasive messages (Hypothesis 4).

Study 5 extended the previous studies by investigating why self-attributions, our operationalization of relevance, consistently predicted increased perceptions of being unfairly judged. Specifically, Study 5 examined participants' beliefs regarding different sources of relevance (e.g., internally versus externally-derived). Although perceiving that relevance was derived from internal and external sources were independent predictors of self-attributions, only perceptions that relevance was derived from an external source (e.g., the research team) predicted self-attributions when accounting for both predictors simultaneously. Furthermore, being targeted, being African American, and receiving flu information increased perceptions that relevance is derived from an external source, which, in turn, increased feelings of being unfairly judged. Although perceptions that relevance is derived from an external source produced deleterious effects on both message reception and yielding through perceptions of being judged, perceptions that relevance was derived from an internal source, consistent with prior literature, was only correlated with positive outcomes (e.g., more positive source evaluations and stronger uptake of behavioral recommendations). Therefore, findings suggest that leveraging relevance through information targeting backfires because it increases perceptions that relevance is derived from an external source, but does not increase perceptions that relevance is derived from an internal source (Hypothesis 5). In other words, targeting increases perceptions that the research team believes the information is relevant for recipients, but does not increase personal perceptions of relevance. The distinction between externally (versus internally) derived

relevance sources enriches theory development by identifying conditions under which leveraging relevance may facilitate or undermine persuasion.

Not all of our hypotheses were supported; although we predicted that the consequences of targeting would be localized on HIV information due to its strong association with the African American community, the consequences that emerged in response to the targeting manipulation generalized across HIV and flu information. Although this finding was unexpected, there are a few possible explanations. First, although flu information has been used as a control in previous research (Earl et al., 2016), the message recommended a flu shot as a method for flu prevention. Because African Americans have historic distrust of the medical system, particularly due to experienced racism in medical treatment (e.g., Tuskegee syphilis experiment; Freimuth et al., 2001) it is possible that the targeting manipulation activated these race-based schemas and increased the level of threat associated with the flu information. Another possibility is that making information selections based on recipients' social identities (e.g., their race) may increase perceptions of being judged or stereotyped, regardless of the information content. Although qualitative data for participants' self-attributions showed that African Americans were more likely to explicitly report their race as a contributing factor for receiving the HIV information, they may have felt less confident reporting their race for the receipt of flu information due to attributional ambiguity. Previous literature supports this possibility; when potential instances of discrimination are ambiguous, members of marginalized groups are often hesitant to identify the event as discriminatory due to fear of being punished or negatively evaluated (Garcia, Reser, Amo, Redersdorff, & Branscombe, 2005; Kaiser & Miller, 2001; Kaiser & Miller, 2003). Future work should test whether the negative outcomes associated with leveraging identity-based relevance extend to other types of information (e.g., health conditions

that are linked with specific identities but are perceived to be outside of one's behavioral control, such as sickle-cell anemia; Goffman, 2009).

Implications and future directions

Implications for theory

Given extensive research demonstrating that high personal relevance facilitates persuasion, deeply-seated assumptions posit that leveraging relevance will enhance the efficacy of persuasive efforts (Bargh, 1982; Earl et al., 2009; Johnson & Eagly, 1989; Moray, 1959; Rotliman & Schwarz, 1998). However, the current studies suggest that relevance may operate in a more nuanced way than previously considered. Therefore, this work offers a novel contribution to extant literature by investigating the effects of identity activation as a lever for relevance. Specifically, these studies suggest that there may be differential sensitivity to relevance interventions as a function of group identity. Although theory suggests that signaling the relevance of social identities for health information will promote deeper information processing, these studies demonstrate that leveraging relevance through marginalized social identities (e.g., being African American) may preclude the expected benefits of persuasion when recipients feel unfairly judged (e.g., experience social identity threat), or perceive that relevance is derived from an external (versus internal) source. Because people often make inferences about group members' attitudes and behaviors based on their category membership, people with marginalized identities may experience identity threat when persuasive appeals appear to evaluate them based on their group membership without acknowledging their unique characteristics (Turner et al., 1987).

This work is consistent with prior literature on fear appeals suggesting that in certain contexts, linking threat with personal behavior or perceived risk can produce iatrogenic effects

(Earl & Albarracin, 2007; Rogers & Mewborn, 1976; Witte & Allen, 2000). Additionally, this work suggests that one possible reason why fear appeals and other persuasive efforts that seek to motivate behavior change through relevance may backfire is that behavior can be reflective of identities. In particular, because people with marginalized group identities may show heightened sensitivity to being judged, persuasive appeals that link negative behavior or stigmatized health conditions with social identities (e.g., smokers) may elicit defensive processing due to social identity threat (Falomir & Invernizzi, 1999). This possibility is consistent with health behavior theories, such as identity-based motivation, which posits that identity activation can increase motivation to behave in identity-congruent ways (Oyserman, 2015; Oyserman et al., 2007; Oyserman, Smith, & Elmore, 2014). As such, messages that activate social identities may evoke identity threat and defensive processing when they challenge people's motivation to engage in identity-congruent behaviors. Future work should explore the role of social identities within fear appeals and other persuasive efforts.

Furthermore, this work contributes to extant literature on motivated reasoning; specifically, these studies replicate previous work on identity-protective cognition by demonstrating how cultural identities influence the types of goals that people make, the ways in which they process information, and how they evaluate the information source (Kahan, 2017; Kahan, Braman, Gastil, Slovic, & Mertz, 2007). To extend previous literature, these study findings suggest that future work should also consider the context in which information is received due to its potential impact on biased information processing. Although the HIV and flu messages did not portray any particular social identity in a negative light, the manner in which the information is delivered can prompt message recipients to reject the message and defend beliefs that run counter to the message recommendations in order to protect their identities.

Therefore, because context can impact message receptivity, future research should investigate the contexts in which information is delivered in addition to focusing on the information itself (Earl & Lewis, 2019).

The current work also demonstrates how the multidimensionality of relevance, which can be self-generated or derived from an external source, may undermine assumptions about its robustness as a persuasive strategy. Although previous research has focused primarily on understanding the effects associated with personal perceptions of relevance, this work suggests that perceptions about different sources of relevance (e.g., relevance derived from an external, versus internal, source) can produce heterogeneity in message receptivity. Specifically, although perceiving information as personally relevant may be beneficial, consistent with prior literature, perceptions that an external source has identified the information as relevant may produce mixed effects. Given this possibility, future research should examine additional factors or contexts that may (a) increase message recipients' perceptions that relevance is being derived from an external source, and (b) impact whether these perceptions facilitate or impede persuasion.

This work also suggests potential intervention points that may mitigate identity threat in the context of message processing. Although many persuasive efforts leverage relevance to bring information closer to target audiences, attempts to reduce psychological distance may backfire if recipients are making active attempts to distance themselves from the message. Prior research shows that recipients often create psychological distance from messages that are counterattitudinal or evoke negative affect by disengaging from the message content, derogating the message source, or counterarguing the message (Blumberg, 2000; Brown & Locker, 2009; Liberman & Chaiken, 1992). Therefore, one ironic, but potentially useful strategy for improving receptivity to threatening messages may be to increase the psychological distance between the

self and the message. Because self-distancing is a useful strategy to mitigate threat, creating distance may, ironically, facilitate message receptivity (Kross & Ayduk, 2011; Kross & Grossman, 2012). Future work should investigate this possibility.

These studies also contribute to the current literature on social identity threat. Although prior research shows that experienced social identity threat (e.g., stereotype threat) emerges in response to identity activation, Studies 3 and 4 suggest that in some contexts, identity activation may be necessary, but not sufficient to evoke identity threat. In contexts where stereotypes are less salient or do not come to mind as easily (e.g., beliefs that African Americans are disengaged from the healthcare system), more blatant cues may be required to elicit social identity threat (e.g., signaling that racial identities are being used as a relevance cue).

To determine the consequences of signaling message relevance through social identities, we tested our research questions with a population that is frequently the target of persuasive attempts, particularly in healthcare contexts: African Americans. However, the observed findings may not be limited to this population. Because research shows that activating social identities can be detrimental for other marginalized groups, such as Asian Americans, Latinos, American Indians, people with higher body weights, and sexual minorities (Cheryan & Bodenhausen, 2000; Derricks & Earl, 2019; Fryberg et al., 2010; Gonzales, Blanton, & Williams, 2002; Lee et al., 2017; Major et al., 2014), future work should determine whether signaling relevance via marginalized social identities impedes message receptivity for other types of information, other populations, and in other domains (e.g., education).

Practical implications

In addition to its theoretical contributions, this work has several important real-world implications. For instance, information providers, such as medical practitioners and clinicians,

should consider the importance of context when delivering health information, particularly to members of marginalized groups. These studies demonstrate that targeting health information to African Americans produced deleterious effects through increased perceptions of being unfairly judged, and these findings are particularly problematic given their divergence from medical practitioners' favorable evaluations of information targeting (Study 1).

Additionally, public health campaigns often utilize prevention approaches to reduce disease prevalence by targeting interventions to high-risk populations (Center for Disease Control, 2015; USDHHS, 2015). Although some intervention components, such as increasing the accessibility of condoms, may be effective, these studies identify the potential for rebound effects, particularly for African American audiences, if they feel judged by some strategies. Feeling unfairly judged is particularly detrimental because our findings suggest that African Americans who believed that they received health information due to their racial identity disengaged from the information, reported less trust in the information source, and were less likely to engage in recommended behavior responses that can inadvertently serve to perpetuate the racial health disparities these initiatives were designed to eliminate. Therefore, persuasive efforts that leverage relevance should consider the potential negative outcomes that may emerge if the target audience feels judged or fails to perceive the message as personally relevant, and instead perceives that relevance is being derived from an external source.

Conclusion

Persuasive appeals often aim to reach high-risk audiences effectively and efficiently. Although persuasive efforts that leverage relevance may be beneficial in non-threatening contexts, leveraging relevance may backfire in contexts where recipients feel unfairly judged. Therefore, it is imperative that persuasive efforts consider not only the message content, but also

attributes about message recipients (e.g., their group membership) that may impact subsequent receptivity to persuasive messages. People's perceptions that their marginalized social identities, rather than their individual attributes, are being used as the basis for message selection can produce interpersonal, attention-related, and behavioral consequences that impede persuasion and behavior uptake. Developing a greater understanding of the ways in which group identity operates in the context of persuasion can inform persuasive efforts that seek to change attitudes and/or behavior for all audiences.

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