

“What’s going on” in Ferguson? Online news frames of protest at the police killing of Michael Brown

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Abstract

Public reactions to protests are often divided, with some viewing the protest as a legitimate response to injustice and others perceiving the protest as illegitimate. We examine how online news sources oriented to different audiences frame protest, potentially encouraging these divergent reactions. We focus on online news coverage following the 2014 police shooting of a Black teenager, Michael Brown. Preregistered analyses of headlines and images and their captions showed that sources oriented toward African Americans were more likely to include content conveying racial injustice and legitimacy of the subsequent protests than sources oriented toward a general audience. In contrast, general audience sources emphasized conflict between protesters and police, making fewer references to the protesters’ cause. Whereas much work on media segregation addresses the propensity of audiences to consume different sources, our work suggests that news sources may also contribute to information fragmentation by differentially framing the same events.

Keywords

digital media, news frames, police, protest, text processing

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Picket lines and picket signs
 Don't punish me with brutality
 Talk to me, so you can see
 Oh, what's going on
 What's going on

—Marvin Gaye, *What's Going On* (1971)

In 2014, Michael Brown, an unarmed Black teenager, was shot and killed by Darren Wilson, a White police officer, in Ferguson, Missouri. Brown's killing spurred high-profile protests in Ferguson and beyond, eventually fueling a larger international movement to end police brutality and other forms of racism against Black people (e.g., Black Lives Matter; see Freelon et al., 2016).

Reactions to the shooting and subsequent protests in Ferguson were sharply divided along racial and political lines (Pew Research Center, 2014), much like reactions to numerous other similar events in the U.S. (Dukes & Kahn, 2017; Reinka & Leach, 2017; Weitzer, 2015) and around the world (Evans & Need, 2002; Goldberg, 2002; Sidanius & Pratto, 1999). National surveys showed that Black Americans were much more likely than White Americans to believe that Brown's shooting raised important racial issues (80% vs. 37%), to believe police had gone too far in their response to the Ferguson protests (65% vs. 33%), and to support the Black Lives Matter movement (65% vs. 33%; Horowitz & Livingston, 2016; Pew Research Center, 2014). Partisan divides between Democrats and Republicans were similar in magnitude: 62% of White Democrats believed Brown's shooting raised important racial issues compared to 22% of Republicans, and 64% of White Democrats reported support for the Black Lives Matter movement compared to 20% of White Republicans (Horowitz & Livingston, 2016; Pew Research Center, 2014, 2016).

In this article, we examine one potential contributor to these social divides: the framing of Ferguson in online news media oriented to Black versus White audiences. Our examination of online, as opposed to print or television, news media enables a larger scale analysis, as digital

news is now available to both readers and researchers in a greater volume and from a greater variety of sources. Further, our focus on divergent frames in online news addresses concerns that news exposure is growing increasingly insular, specialized, and tailored, with different groups of people receiving different information online (see, e.g., Fletcher & Nielsen, 2017; Gans, 2010; Stroud, 2010; Tewksbury, 2005; Turetsky & Riddle, 2018). Additionally, the downstream effects of these divergent frames on behavior may be compounded by the superficial way that online news tends to be consumed (Schäfer, 2020; Schäfer et al., 2017). The present work is part of a growing trend in social psychology to examine the (virtual) group dynamics of social phenomena occurring in digital modes of representation, opinion formation, communication, protest, and other collective action (for discussions, see Jost et al., 2018; Kende et al., 2015; Thomas et al., 2018).

News Frames

At the core of framing theory is the idea that communicating information necessarily involves subjective choices about what information to include, what information to leave out, and what themes to make salient (Entman, 1993). News outlets must make many choices about how to organize and present reality in a story, including which facts to emphasize, what kind of language to use, and when to bring in broader themes and context (Crenshaw, 2014). In their coverage of Ferguson, news outlets needed to decide how much to focus on the police killing Michael Brown as the precipitating event for the protests versus the interactions between protesters and police. More specific choices included which of many possible descriptors to use when characterizing the protests (e.g., "riots" versus "demonstrations"), and how much to discuss race or racism as a possible factor in the police shooting. Thus, although news stories may be intended to present only factual information, they invariably *frame* information through many choices of both content and form (Scheufele, 1999).

These news frames have consequences for attitudes and beliefs, influencing consumers' understanding of particular events and inferences about broader underlying issues (Cappella & Jamieson, 1997; Scheufele, 1999). For example, experiments show that news coverage emphasizing either the effectiveness or controversy of vaccinations shifts attitudes in the direction of the frame (Bigman et al., 2010; Gollust et al., 2010). Differential emphasis on the reality, urgency, and cause of climate change in the news predicts consumers' beliefs about the nature of climate change as well as consumers' broader attitudes about the trustworthiness of science and scientists (Feldman et al., 2012; Hmielowski et al., 2014). The effects of news frames can be substantial: different frames of overweight people in online news articles had large effects (average d across studies = 0.99) on beliefs that fat is inherently unhealthy (Frederick et al., 2019). Framing can also alter support for specific behavior and policy. In the same study of fatness news frames, reading an online article with a fat-negative frame (e.g., framing fatness as a public health crisis) led to greater support for job discrimination against fat people and charging obese people more money for health insurance, compared to reading an article with a fat-positive frame.

News frames are particularly important to social movements, as protesters rely in part on news to raise awareness and garner support for their cause among a wider audience (J. Smith et al., 2001). The 2015 photo of a drowned 3-year-old Syrian refugee drew widespread attention to the refugee crisis, and illustrates how a frame can mobilize policy change, financial support, and public solidarity on a global scale (L. G. E. Smith et al., 2018). Nevertheless, common news frames often undermine social movements by challenging the legitimacy of the protest and protesters (Arpan et al., 2006; Shoemaker, 1982). For example, a dominant news frame, dubbed the "protest paradigm" (Chan & Lee, 1984), frames protest as a "battle between the protesters and police, rather than as an intellectual debate between the protesters and their chosen target" (McLeod & Detenber, 1999: 5; e.g., police

brutality, systemic racism, income inequality), and emphasizes protesters' "violent actions rather than their social criticism" (McLeod & Detenber, 1999: 3). By obscuring the believed injustice precipitating the protest, and casting protesters as violent, disruptive, and deviant, this news frame supports the status quo by delegitimizing protest and protesters (McLeod & Detenber, 1999; McLeod & Hertog, 1992; see also Reicher, 1996). Experimental exposure to this type of coverage has led news consumers to be more critical of protesters, identify with them less, support them and their right to protest less, view the protest as less effective and newsworthy, and be less critical of the police responding to the protest (McLeod & Detenber, 1999). However, little research has examined the way in which news frames of protest operate in contemporary online news. Further, limited research in social psychology has examined the operation of the protest paradigm frame of protesters and police in conflict or its role (online or offline) in framing protest as a legitimate response to a racial or other injustice (but see Reicher, 1996).

Online News

A greater understanding of frames in online news is critical for at least three reasons. First, much of the foundational work on news frames of protest was conducted on television or print media. Yet, so much of news consumption, opinion formation, and protest now occurs online (Freelon et al., 2016). Online media is already the dominant platform for news consumption in many countries around the world (Newman et al., 2018), dwarfing print news consumption in particular (Matsa, 2018; Newman et al., 2018).

Second, the digital platform has given rise to a news browsing experience that is fundamentally different from other forms of news media (for a review, see Molyneux, 2017). Most news sites have more visitors on mobile devices, especially smartphones, than on desktop or laptop computers (Pew Research Center, 2015). Indeed, at least 85% of U.S. adults get news on a mobile device (Lu, 2017). The proliferation of smartphones and

tablets has driven major design changes in online news platforms, including increased prominence of headlines and images (Meijer & Kormelink, 2015; Ofcom, 2018). As online news websites, apps, and aggregators are optimized for smartphone-led consumption, they often emphasize breadth rather than depth of exposure to news stories, serving up many headlines and image thumbnails at a rapid pace in newsfeeds and notifications (Ofcom, 2018). Sometimes called “snack news,” this ubiquitous news format containing only headlines, images, and brief captions represents a major change from news stories in print and television news (Schäfer, 2020; Schäfer et al., 2017). Most prior work has examined news frames of protests in full article texts (e.g., Boyle et al., 2005) and television segments (e.g., McLeod & Detenber, 1999); much less is known about news frames transmitted through the small snippets of content—headlines and images—that dominate the online news landscape today.

Recent research suggests that news frames may be even more impactful in contemporary online news consumption, as online media platforms and changing news consumption norms encourage frequent but piecemeal, superficial, and passive browsing, rather than prolonged, proactive searching and exploration (Meijer & Kormelink, 2015; Ofcom, 2018; Schäfer, 2020). Estimates suggest that people are spending less and less time in each news visit. For example, in the U.S., the average news visit was just 2 minutes long in 2018, compared to 2.4 minutes in 2017 (Pew Research Center, 2019). Many visits are even shorter, as people increasingly check the news during “micro-periods of waiting,” such as while using the bathroom or waiting for an elevator, rather than reserving news consumption for longer sittings as in the past (Meijer & Kormelink, 2015). Some work suggests that the rise of this type of brief and passive news consumption reduces critical thinking about online news and increases shallow forms of information processing (Ofcom, 2018; Schäfer, 2020). Indeed, the Elaboration Likelihood Model of persuasion (Petty & Cacioppo, 1986) suggests that contemporary browsing may cause news consumers to

be more easily persuaded by quickly and superficially processed peripheral cues such as headlines, images, and image captions (Cyr et al., 2018). The moral charge (Brady et al., 2019), and dramatic visual and linguistic content (Cyr et al., 2018), in the highly salient headlines and images of online news are likely to further encourage a focus on such peripheral cues. Experimental research has begun to document the attitudinal and behavioral consequences of modern news consumption: exposure to newsfeeds containing many headlines and image thumbnails increased viewers’ illusions of being informed about a particular news topic, but in reality, their actual knowledge of the topic did not differ from that of control participants who saw no news (Schäfer, 2020). In turn, viewers exposed to the contemporary superficial newsfeed format formed more extreme attitudes about the topic, despite no concurrent increase in actual knowledgeability, compared to controls. Taken together, these lines of work suggest that the type of brief, passive news consumption facilitated by the online news format makes for citizens who are simultaneously less informed, yet more easily persuaded into endorsing the most salient and morally charged positions, and more certain of their untethered attitudes—a combination some have suggested will lead to more polarization over time (Schäfer, 2020). This makes a greater understanding of frames in online news especially important.

Finally, online news media has multiplied the number and diversity of news sources available to consumers today. Some researchers have suggested that the high-choice media environment online encourages news outlets to cater their content to particular sought-after segments of consumers (see Tewksbury, 2005). Such tailoring of content could have implications for news frames used in sources oriented to different audiences (Feldman et al., 2012; Hmielowski et al., 2014). There is also concern that online news media representations of protest may be tailored specifically to presumed audiences in ways that reinforce their pre-existing views (Earl & Garrett, 2017). Thus, a greater understanding of frames in online news today is essential to discussions of the way

in which “truth” may be growing increasingly insular, as groups are exposed to heavily curated information that reinforces what they already know and believe (see, e.g., Fletcher & Nielsen, 2017; Gans, 2010; Stroud, 2010; Tewksbury, 2005; Turetsky & Riddle, 2018). Such virtual “echo chambers” may make social and civic engagement on heated issues like Ferguson, mass protests, police violence, or racial injustice, more difficult (for discussions, see Dukes & Kahn, 2017; Reinka & Leach, 2017, 2018; Richeson & Sommers, 2016; Weitzer, 2015).

The Social Psychology of Online News Content

One way that social psychology can help examine online news is in analysis of the psychological meaning conveyed in the content of this contemporary form of news. A wide range of research in social and cognitive psychology shows that the meaning in visual information like headlines, photos, and captions is evaluated quickly and easily when it is clear and salient (for a review, see Balçetis & Lassiter, 2010). Indeed, a headline, image, and brief caption are all that is necessary to provide a narrative of who did what and with which effect (e.g., Iyer & Oldmeadow, 2006; Reinka & Leach, 2018; L. G. E. Smith et al., 2018).

In the context of the police killing and protests in Ferguson and beyond, the featured words and images in online news could include references to socially and psychologically powerful concepts such as race, injustice, righteous resistance, tense conflict, or dangerous unrest (e.g., Dukes & Gaither, 2017; Reinka & Leach, 2017, 2018; Turetsky & Riddle, 2018). Our interest here is in the way that such online news content may frame and explain Ferguson in the moral terms of legitimacy and injustice (e.g., as legitimate protest at a true injustice). Prior research has highlighted the importance of the social psychological content of police and protest news. For instance, Dukes and Gaither (2017) show that media portrayals of the victims of police shootings can influence the attitudes

of media consumers. In comparison to positive, counter-stereotypic portrayals, negative, stereotypic portrayals of a shooting victim can increase the degree to which readers victim-blame and reduce the degree to which readers have sympathy or empathy for the victim. Relatedly, Reinka and Leach (2017) showed that Black participants write about images of Black protest in a way that reflects greater emphasis on the causes of the protest, and greater solidarity with and support of the protesters. In two studies of neural, physiological, and self-reported responses to photos of police force and protest against it, Reinka and Leach (2018) found White college students to be less familiar, engaged with, and emotionally reactive than Black college students. Additionally, Turetsky and Riddle (2018) showed that the media outlets analyzed here tended to selectively link to other sources that covered these events with emotional valence and levels of stereotypical content similar to their own.

Legitimacy of protest. The legal and moral legitimacy of protest is implied in the basic human rights of freedom of assembly, association, and speech. However, judgments of protest legitimacy are more complicated because they take many other aspects of protest into account (e.g., Reinka & Leach, 2017; L. G. E. Smith et al., 2018; Teixeira et al., 2019). In the U.S. and elsewhere, there is widespread opposition to *disruptive* protest (Teixeira et al., 2019), especially about racism (Davenport et al., 2011; Pew Research Center, 2016). This is partly because disruptive protest is seen as a moral and material threat to existing political, economic, and social systems (see McLeod & Detenber, 1999; Sidanius & Pratto, 1999; Teixeira et al., 2019).

The above discussed work on the protest paradigm frame highlights another way in which news about events like Ferguson can frame protest as less legitimate. Framing protest as a *conflict between protesters and police* diverts attention from the believed injustice about which protesters have organized (McLeod & Detenber, 1999; Reicher, 1996). In fact, a focus on the police at protests can itself frame protest as less legitimate because

many people presume that police are present mainly to protect against crime and disorder (e.g., Drury & Reicher, 2000; McLeod & Hertog, 1992; Reinka & Leach, 2017). This fits with a more general view in the U.S. (for a review, see Weitzer, 2015), and in many societies, of the police as fair and just protectors of societal order (Sidanius & Pratto, 1999). Given that lay people generally assume police will observe and protect protesters engaging in legitimate exercise of their democratic rights (Drury & Reicher, 2000), emphasizing clashes between the two groups may undermine the perceived legitimacy of the protesters and their actions.

Apparent injustice. The legitimacy of protest is also determined by whether the issue being protested is viewed as a true injustice that warrants collective complaint (Cappella & Jamieson, 1997; McLeod & Detenber, 1999; Reinka & Leach, 2017; Scheufele, 1999; L. G. E. Smith et al., 2018; Teixeira et al., 2019). In the context of Ferguson, a news headline neutrally declaring that a death or police shooting occurred is likely not sufficient to suggest an injustice, as it does not ascribe agency or moral responsibility to anyone for Brown's death. Given prevalent beliefs that police are fair and just, many readers will presume that the police must have used lethal force only if it were warranted (see Sidanius & Pratto, 1999; Weitzer, 2015). In contrast, headlines that highlight the agency of the police officer in killing Michael Brown using *active, agent-caused death* words—such as “kill,” “murder,” “butcher”—highlight police moral responsibility for an unjust death (see Weiner, 1995).

One consensual basis of injustice is harm, especially that which is clearly undeserved by the victim (for reviews, see Haidt & Kesebir, 2010; Weiner, 1995). In the case of Michael Brown, he can be framed as an undeserving victim because he was *young* and *unarmed* (e.g., for general discussions, see L. G. E. Smith et al., 2018; Weiner, 1995). Given stereotypes that inhibit sensitivity to harm to Black victims (Goff et al., 2014), it may be especially important in events such as Michael Brown's killing for online news media

to emphasize that he was young and unarmed. It may also be particularly important for news media to emphasize that Michael Brown was Black: *racializing* a victim of undeserved harm can facilitate the suggestion of injustice when it is made explicit and combined with other content suggestive of racial discrimination (Reinka & Leach, 2017, 2018; for discussions, see Eberhardt & Goff, 2004; Weiner, 1995; Weitzer, 2015).

Further, given the prevalence of dehumanizing and de-individuating racial frames, simply *showing* or *naming* a Black victim can serve to humanize and individuate them (see Eberhardt & Goff, 2004; Goff et al., 2014; Richeson & Sommers, 2016; Weitzer, 2015). This is the rationale behind several political campaigns, such as #SayHerName (African American Policy Forum, 2015) and #IfTheyGunnedMeDown (“If They Gunned Me Down,” n.d.). Including images of a Black victim in particular serves to simultaneously individuate and racialize them. Racializing victims in this way can also be understood as an antidote to more neutral, *deracialized*, representations of victims that frame them so minimally and generically that there is little basis for inferences of injustice. More generally, there is a good deal of evidence that portraying a specific identifiable victim elicits greater interest and a more sympathetic response than generic information (e.g., Iyer & Oldmeadow, 2006; Thomas et al., 2018; Västfjäll et al., 2014).

The Current Study

In the current study, we examined how online news media oriented to different (racial and political) audiences framed Michael Brown's shooting and the subsequent protests in Ferguson. Drawing on theory suggesting framing is primarily derived from decisions about what information to include, leave out, and emphasize in the news (Entman, 1993), we examined the presence or absence of key concepts in headlines, featured images, and captions. We focused on headlines, images, and captions in an effort to pinpoint the content most ubiquitous in modern online news

browsing consumption patterns. We analyzed the extent to which online news outlets included images and words referencing (disruptive) protesters and police in the 10 days following Michael Brown's shooting. We expected a high frequency of such references given the widespread use of the protest paradigm news frame that portrays protest as a conflict between protesters and police (McLeod & Detenber, 1999). We also examined the extent to which online news focused on Brown's death and the presence or absence of content suggesting that his death was unjust and thus a legitimate cause for protest. Specifically, we examined the extent to which online news referenced Brown by name or image, or mentioned race, that Brown was young and unarmed, that Brown was dead, or that he was (actively) killed. We expected that African American-oriented sources would include more of these protest-legitimizing types of references, given the above cited work showing that Black readers are more familiar with incidents of police killings and their precipitating role in subsequent protests of police force, and more supportive of the protesters (Reinka & Leach, 2017, 2018). We additionally expected that left-leaning news media would exhibit characteristics more similar to African American-oriented sources than right-leaning media, given that White Democrats in the U.S. responded to the events more similarly to Black Americans, whereas White Republicans' responses sharply diverged. We preregistered two general hypotheses about how news frames would differ by type of news outlet (<https://osf.io/sd58n/>):

H1: Police and protest images should not differ much by outlet's political leaning or source audience, except that perhaps general public and right wing sources refer to protest a little more or moderately more negatively.

H2: African American-oriented and left-leaning news media should provide at least moderately more explanatory information that may frame the killing as unjust and therefore the subsequent protests as legitimate.

In addition, we preregistered a plan to conduct an Exploratory Factor Analysis (EFA) using the visual and textual content of the headlines and featured images in order to identify the overarching frames in news sources (e.g., "the protest paradigm," "the death of Michael Brown").

Method

Data

The present data come from a database created by Turetsky and Riddle (2018), who collected 3,278 online news articles published in the 10 days after the shooting of Michael Brown in Ferguson, Missouri. This time period was strategically selected to capture the initial wave of protest in Ferguson. The sample includes all published articles that mentioned "Ferguson" from the top 51 online news sources and the top 18 African American-oriented online news media sources in the U.S. The top general news sources were identified based on the number of unique U.S. visitors to their websites in January, 2015, and were reported by Pew Research Center (2015). The top African American-oriented news sources were identified by the Maynard Institute, a non-profit devoted to emphasizing diversity in news media, and their web traffic data was also reported by Pew Research Center (2015). The sample sizes of general news sources and African American-oriented news sources are unequal because we relied on the Pew reports for these data and are unable to independently identify more African American-oriented sources to make the samples more equal at the time of data collection. The dataset includes the text of all articles mentioning the correct Ferguson, screened manually by research assistants, along with all images included online within each article, from 66 sources (after accounting for overlap in sources and sources without relevant articles). Full details of data collection, coding, and other aspects of the dataset can be found in Turetsky and Riddle (2018), who reported network analyses of these online news sources and their linguistic content.

The present analyses focus on aspects of the dataset not analyzed or reported in Turetsky and Riddle (2018). Here, we examine article headlines, featured images, and featured image captions, and the relationship between this content and source characteristics (audience and political leaning). Featured images are those embedded in the text of the article published online (as opposed to images included as part of a gallery to which an article links). In total, the present data include headlines from 3,278 articles, 5,502 featured images from these articles, and 4,220 corresponding image captions (1,282 images did not have a caption).

Measures

Source-level measures. We used two key source characteristics as predictor variables in our analysis. The first was source audience: top general (sources among the top 51 most-frequented online news organizations identified by Pew) or top African American (sources among the top 18 African American-oriented news organizations identified by Pew). The second variable was an estimate of political leaning for each news source, based on the political leaning of their audience. The estimates were calculated by Turetsky and Riddle (2018) based on data collected from both Amazon Mechanical Turk workers in the U.S. and a Clearvoice panel of American homeowners. Estimates reflect the relationship between the political leaning of those individuals and the extent to which they trust each news source (for details, see Turetsky & Riddle, 2018).

The online news sources frequented most by those in the U.S. included six U.K. based sources: the BBC, Daily Mail, Independent, Mirror, Telegraph, and the Guardian. Additional analyses reported in the online Supplemental Material examined whether treating U.K. sources as a third type of source improved upon the two-category audience variable we preregistered (general vs. African American-oriented). Model comparisons using Bayes factors suggested that the two-category audience variable, as preregistered and reported below, fit the data better overall. One interesting exception is discussed below.

Article-level measures. For the results presented in the main text, we scored article headlines, featured images, and featured image captions in a binary fashion such that they either did or did not contain the measured concept. Alternative specifications, reported in the online Supplemental Material, are consistent with the results presented here.

Featured images. Each image featured in an article was coded by a pair of research assistants as depicting Michael Brown, protest, or police. These categories were not mutually exclusive; each image could be coded as depicting one, multiple, or none of these categories. Interrater reliability on this binary labeling task was very good, Cohen's $\kappa = .85$.

Words in article headlines and image captions. We used custom-written R code (R Core Team, 2019) implementing dictionary methods to measure the linguistic content of article headlines and featured image captions. Although there are now a variety of ways to measure the linguistic content of texts, dictionary methods are simple, straightforwardly interpretable, and easily understood. We measured three broad categories of linguistic content with word lists that we specified in our preregistration. Several aspects of this content were examined with similar custom dictionaries by Reinka and Leach (2017, 2018) and Turetsky and Riddle (2018).

The first two linguistic categories we measured were mentions of **police** and **protest**. Police mentions included words containing the stems *police**, *cop**, *officer**, and *trooper**, as well as *law enforcement*, *patrolman/men*, and *lawman/men*. Protest mentions included words containing the stems *protest**, *riot**, *unrest**, *loot**, *demonstrat**, and *march**, as well as *uprising*. In addition to this broader protest category, we also examined the subcategory of **disruptive protest** mentions, measured by the words *riot**, *unrest**, and *loot**, as a particular way of framing the protests in Ferguson.

The third linguistic category we measured included words related to **Michael Brown and his death**, given that news sources' descriptions

of Brown and the circumstances of his killing by police are key to their framing of the events, and could have implications for perceived legitimacy of police actions and the subsequent protests. We examined six subcategories of this overarching theme. First, we examined mentions of **Michael Brown** by name (measured using the word list *Michael Brown, Michael, Mike, Brown*). Second, we examined the use of three types of descriptors of Brown and the circumstances surrounding his shooting: **race** words (*black, african american, white, caucasian, race, ethnicity*), words related to him being **unarmed** (*unarmed, weaponless, innocent*), and words related to his **youth** (*teen*, youth, young, adolescent, child, graduat*, high school*). Finally, we examined two ways of referring to the police shooting of Brown: **active, agent-caused death** (*kill*, gun* down, mow* down, murder*, slaughter*, butcher*, execut*, massacr**) and **neutral, non-agentic death** (*dead, death, died, perish*, shot, shoot*, fatal**).

It should be noted that, as with any dictionary method, it is not possible to directly compare different dictionary categories, since there are different numbers of words in each category, and the words composing the category are likely to differ in how frequently they occur in natural language. Thus, readers should not interpret differences in estimated rates of use between word categories as representing differential emphasis on the underlying theoretical construct, as there are many additional contributors to those differences.

Data Analysis Strategy

We preregistered our analysis with an open-ended analysis plan on the Open Science Foundation (<https://osf.io/sd58n/>). Analyses not reported here may be found in the supplemental material. Any additional analyses, or departures from the preregistration, are noted explicitly. Furthermore, the OSF contains many additional details of the work, including code, data, and analyses that did not fit into the main text or the supplemental material.

Our analyses consisted primarily of a series of Bayesian multilevel logistic regressions, with

article-level observations nested within source, with source-level intercepts allowed to vary (i.e., random intercept models). These models weight effects of source by the number of articles produced by each, such that the more prolific news sources have greater weight in the analyses. Unless otherwise indicated, all model quantities are reported in terms of the median of the posterior distribution, with 95% highest density intervals, and with the posterior probability that the relationship is in the direction stated. Robustness checks can be found in the supplemental materials. None of these indicated meaningful disagreement with the results we present in the main text.

Results

All models examined the effect of source political orientation and source audience simultaneously. Thus, all analyses presented in the main text contain the effect of political orientation and all figures comparing the top general and African American-oriented sources show predicted values at the mean of the political orientation distribution. However, because of concerns about the nature of the political orientation variable, the generally weaker effects of political leaning are discussed mainly in the Supplemental Material. Specifically, our sample contains only three right-leaning sources, with one conservative source nearly five standard deviations away from the mean political leaning, and the vast majority of sources having a moderately liberal bent (Figure S1). Although this accurately captures the media landscape of top general news sources at the time of the shooting, this distribution makes it difficult to reliably assess the effect of political leaning. These concerns are detailed further in the supplemental material.

Police and Protest: Words and Images

Figure 1 displays results comparing representations of police and protest in article headlines, captions, and images in top general and African American-oriented sources. Across all five ways

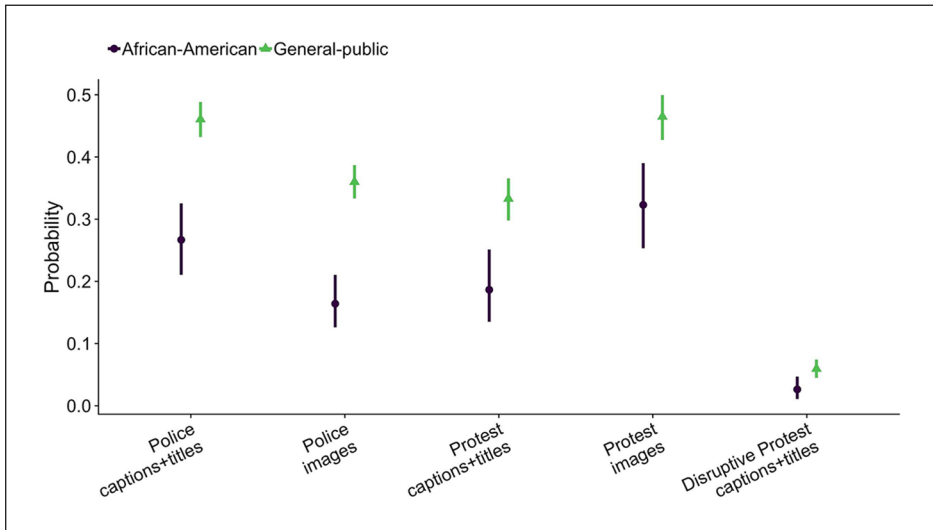


Figure 1. Probability of images or text including a given concept. Points represent the median of the posterior distribution, and bands represent 95% highest density intervals.

Note: Please refer to the online version of the article to view the figure in colour.

of measuring these representations, sources oriented toward the general public were more likely to emphasize both police and protest than sources oriented toward African Americans. For representations of police, the top general sources were more likely to feature images of police, $P_{Gen} = .36$, [.33, .39]; $P_{AA} = .16$ [.12, .21], $prob_{Gen > AA} > .99$, and refer to police in headlines and captions, $P_{Gen} = .46$, [.43, .49]; $P_{AA} = .27$ [.21, .32], $prob_{Gen > AA} > .99$, compared to African American-oriented sources. For representations of protest, the top general sources were more likely to feature images of protest, $P_{Gen} = .46$, [.43, .50]; $P_{AA} = .32$ [.26, .40], $prob_{Gen > AA} > .99$, refer to protest in headlines and captions, $P_{Gen} = .33$, [.30, .37]; $P_{AA} = .19$ [.13, .25], $prob_{Gen > AA} > .99$, and refer to disruptive protest specifically in headlines and captions, $P_{Gen} = .06$, [.04, .07]; $P_{AA} = .03$ [.01, .05], $prob_{Gen > AA} = .99$, compared to African American-oriented sources. This may suggest that narratives of police and protesters in conflict in Ferguson were more prevalent in sources oriented to the general public than to African Americans. Our analyses of images and words describing Michael Brown and the circumstances of his death, which explain why police

and protesters were in Ferguson, aimed to shed more light on this.

Michael Brown and his Death: Explanatory Words and Images

Figure 2 shows the results for each of the concept measurements relevant to the second hypothesis. Consistent with this hypothesis, online news sources oriented to African Americans included more words and images that explain why police and protesters were in Ferguson by suggesting the police unfairly killed unarmed, Black, young Michael Brown. The aggregate of the seven categories of content shown on the far left of Figure 2 shows that, in general, African American-oriented sources were more likely to feature words and images that explained Ferguson in ways that legitimize the protests, $P_{Gen} = .40$, [.37, .43]; $P_{AA} = .63$ [.56, .70], $prob_{AA > GP} > .99$. In individual analyses of concept measures, African American-oriented sources were more likely than top general sources to reference Michael Brown by name, $P_{Gen} = .28$, [.25, .31]; $P_{AA} = .48$ [.40, .57], $prob_{AA > Gen} > .99$, to feature images of Michael Brown, $P_{Gen} = .06$,

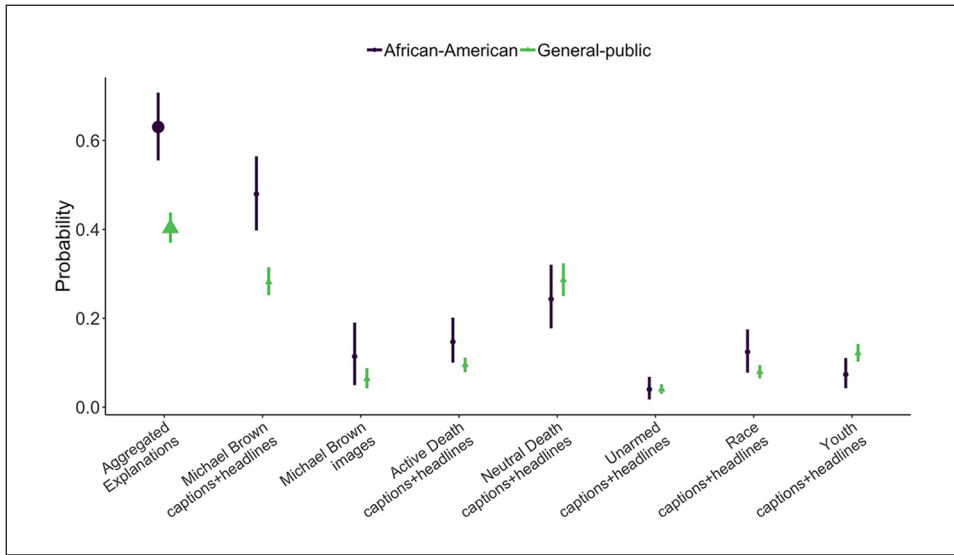


Figure 2. Probability of images or text including a given concept. Points represent the median of the posterior distribution, and bands represent 95% highest density intervals.

Note: Please refer to the online version of the article to view the figure in colour.

[.04, .09]; $P_{AA} = .11$ [.05, .19], $prob_{AA > Gen} = .95$, and to reference race, $P_{Gen} = .08$, [.06, .10]; $P_{AA} = .12$ [.08, .18], $prob_{AA > Gen} = .97$, in their narratives of the events. Additionally, African American-oriented sources were more likely than top general news sources to reference active, agent-caused death, $P_{Gen} = .09$, [.08, .11]; $P_{AA} = .14$ [.09, .19], $prob_{AA > Gen} = .98$, whereas the top general news sources were more likely than African American-oriented sources to use neutral, non-agentic death descriptors, although the latter difference was not robust, $P_{Gen} = .28$, [.25, .32]; $P_{AA} = .24$ [.18, .32], $prob_{AA > Gen} = .17$.

Counter to our second hypothesis, references to Michael Brown being unarmed were roughly equivalent for the two source types, $P_{Gen} = .04$, [.03, .05]; $P_{AA} = .04$ [.02, .07], $prob_{AA > Gen} = .49$. Additionally, the top African American-oriented sources were less likely to focus on youth than the top general sources, $P_{Gen} = .12$, [.10, .14]; $P_{AA} = .07$ [.04, .11], $prob_{AA > Gen} = .02$. Thus, support for our second hypothesis was not as consistent as that for our first hypothesis. Nevertheless, online news sources oriented to African Americans made greater reference to race and Michael Brown being actively killed by the police to

explain events in Ferguson than did online news oriented to the U.S. general public.

As explained in the supplemental materials, there was little indication that the U.K. online news sources should be distinguished from the top U.S. general sources. In fact, according to model comparisons, of the 14 facets of content examined above, for only two was it preferable to use a three-category audience variable distinguishing the U.K. general sources from the U.S. general sources: Michael Brown images and Michael Brown words. In these cases, including the U.K. sources along with the U.S. sources in the top general audience news source category had the effect of making the top general sources appear a little more similar to the top African American-oriented sources because U.K. sources included more textual and visual references to Michael Brown than did the top U.S.-based general sources. In these cases, excluding the six U.K. sources from the category of general sources made the differences between general and African American-oriented sources even larger and more robust (e.g., for images of Michael Brown: $P_{AA} = .12$, [.06, .18]; $P_{Gen} = .05$, [.03, .07]; $prob_{AA > Gen} > .99$; see the Supplemental Material online for more details).

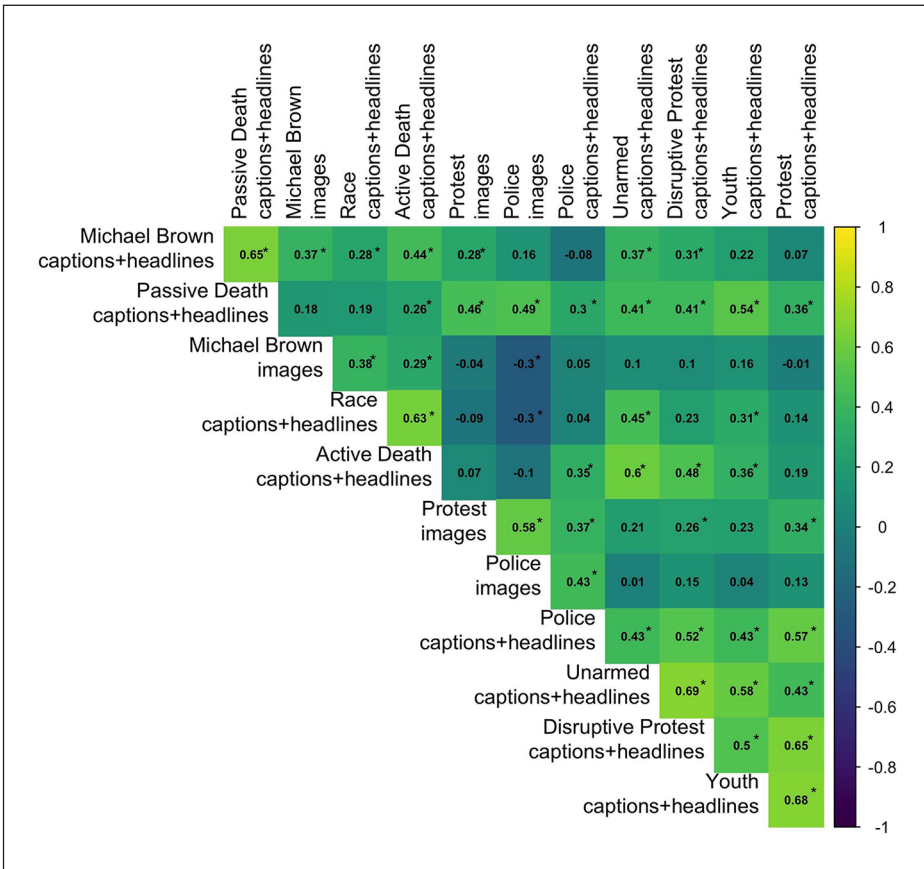


Figure 3. Correlation matrix of all source-level measurements (* $p < .05$).
 Note: Please refer to the online version of the article to view the figure in colour.

Latent Structure of Content Within Sources

Figure 3 shows the correlation of all measurements when aggregated to the level of online news source (e.g., NY Times, Daily Mail, Fox News). As specified in the preregistration, we used these source-level correlations in an Exploratory Factor Analysis (EFA) to assess the latent structure of article content. In other words, we examined whether the words and images aggregated into meaningful categories (i.e., factors). In addition, we created Factor Scores for these aggregated categories of content to examine whether online news sources oriented to different audiences had different patterns of content that together suggested an overall framing of

Ferguson (e.g., as a conflict between police and protesters over a death not characterized as racially or otherwise unjust).

Table 1 shows how each variable loaded onto the three extracted factors (loadings $< .3$ are not shown for legibility). Factor 1 appears to represent online news sources that frame Ferguson as a disruptive protest at an unjust police killing of an unarmed, Black youth (who is not named or pictured). Thus, Factor 1 explains Ferguson in racialized terms as a seemingly legitimate protest at a racial injustice because the victim of the police killing is young, Black, and unarmed, but this victim is not individuated.

Factor 2 appears to represent online news sources that frame Ferguson as a conflict between police and protesters over a death. These sources

Table 1. Variable loadings for the exploratory factor analysis on source-level content.

Words & Images	Factor 1	Factor 2	Factor 3
Protest images		.498	
Police images		.819	
Michael Brown images		-.393	.324
Race words	.305	-.587	
Unarmed words	.580		
Youth words	.775		
Michael Brown words			1.02
Active, agent-caused death words	.606	-.387	
Neutral, non-agentic death words	.388	.302	.540
Police words	.815		
Protest words	.712		
Disruptive protest words	.590		

appear to deracialize the killing as they are very unlikely to show images of Michael Brown or mention race, and also de-individuate Brown by not referencing him by name. That these sources are also less likely to reference active, agent-caused death further suggests that this framing avoids a suggestion of (racial) injustice and thus likely casts the Ferguson protests as illegitimate. In all these ways, Factor 2 fits the protest paradigm frame found previously in print and television news (Chan & Lee, 1984; McLeod & Detenber, 1999).

Factor 3 appears to represent online news sources that frame Ferguson in very stark terms as the death of Michael Brown who tends to be named and shown (and thus both racialized and individuated) in an accompanying image.

The correlations between the factors ranged from very small to moderate. The first factor is weakly correlated with the second ($r = .13$) and moderately correlated with the third factor ($r = .32$). The second factor has a small negative correlation with the third factor ($r = -.05$). Thus, the second factor—Ferguson as a conflict between police and protesters over a death—is most distinct from the others. That the first and third factors are moderately correlated with each other, but not with the second factor, reinforces the impression that the first and third factors legitimize the protests in a way not done by the second factor. Indeed, the first and third factors together

provide a comprehensive framing of Ferguson as a disruptive protest at the unjust police killing of unarmed Black youth Michael Brown.

As seen in Figure 4, the top general online news sources did not tend to frame Ferguson as either a disruptive (racialized) protest at an unjust police killing of an unarmed, Black youth, $F1 = .12, [-.13, .37]$, or as the (racialized) death of Michael Brown, $F3 = -.11, [-.37, .16]$. Indeed, both of these factor scores were statistically indistinguishable from zero for top general sources. Thus, consistent with Hypothesis 2, the top general sources did *not* tend to frame Ferguson in a way that legitimizes the protests. Rather, the top news sources tended to frame Ferguson as a (deracialized) conflict between police and protesters over a death, $F2 = .32, [.12, .53]$. As in prior work on the protest paradigm in print and television news (Chan & Lee, 1984; McLeod & Detenber, 1999), the most popular online news media in the U.S. tended to avoid framing the Ferguson protests as legitimate challenges to the societal status quo.

In stark contrast to the top general news sources, those oriented to African Americans are much less likely to frame the events in Ferguson as a deracialized conflict between police and protesters, $F2 = -.91, [-1.33, -.55]$, $prob_{AA} <_{Gen} < .01$. In addition, the top news sources oriented to African Americans tended to avoid framing Ferguson as a disruptive protest at an unjust

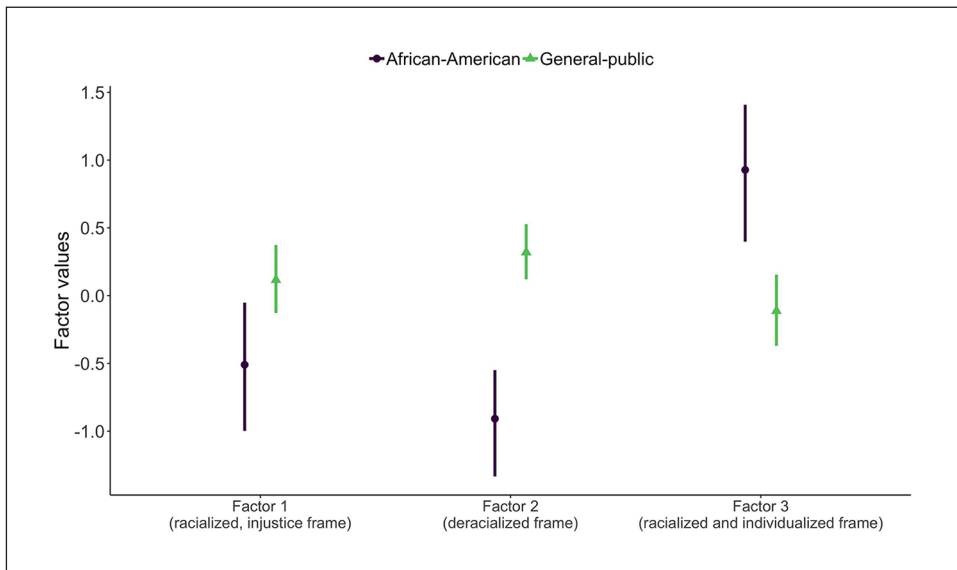


Figure 4. Factor scores as a function of source audience. Points represent the median of the posterior distribution, and bands represent 95% highest density intervals.

Note: Please refer to the online version of the article to view the figure in colour.

police killing of an unarmed, Black youth, $F1 = -.51, [-1.0, -.04], prob_{Gen > AA} = .99$. The frame of the events in Ferguson most characteristic of the top African American-oriented news sources was focused on the death of Michael Brown, $F3 = .93, [.40, 1.41], prob_{AA > Gen} > .99$. This frame was racialized given the frequency of his image in news articles, and individualized given the naming of Brown as the victim. This is consistent with Hypothesis 2. However, the apparent avoidance by the top African American news sources of the Factor 1 frame that most clearly describes Ferguson as legitimate protest at racial injustice is inconsistent with Hypothesis 2. There are numerous possible reasons for this, some of which we discuss in the Discussion section.

Because Factor 3—the (racialized) death of Michael Brown—included the content that supplementary analyses showed to be affected by the six U.K. sources (i.e., Michael Brown images and words), the supplemental materials report parallel analyses that examine the effect of the three possible source types on the Factor Scores. As there are only six U.K. sources in the present study, distinguishing them had very little effect on the

results for the top general U.S.-based sources of news. Interestingly, U.K. sources were distinctive in their relatively frequent reference to Ferguson as a disruptive (racialized) protest at an unjust police killing of an unarmed, Black youth (Factor 1). Given the limited size of, and the great variability in, the six U.K. sources, such findings should be interpreted with caution.

Discussion

Our analysis of online news media shows how sources oriented to different audiences differentially frame the same event. Examining article headlines, featured images, and their captions, we find that online sources oriented toward the general public tend to use a framing that emphasizes a disruptive conflict between protesters and police, consistent with prior work on the protest paradigm news frame (McLeod & Detenber, 1999). In contrast, media sources oriented toward African American audiences use framing features that convey information about the legitimacy of the protesters' social cause, including explicit references to Michael Brown and use of images of

him in their coverage, as well as referencing race and death in a way that highlighted the police officer's active, agentic role in killing Brown.

Our findings that online news sources oriented toward different audiences employ distinct news frames when covering protest have several potential implications for social psychological processes of polarization and collective mobilization. Most generally, to the extent that the different news frames used by sources are compatible with their audience's preexisting beliefs, differential framing of the same events may promote selective exposure to like-minded perspectives and reinforce individuals' attitudes and beliefs (DiFonzo et al., 2013). Such reinforcement can make individuals more extreme in their views, contributing to social and political polarization. More specifically, sources' differential use of the protest paradigm frame could, in particular, exacerbate polarization. Recent research shows that conflict frames—news media's emphasis on conflict or disagreement between two entities (in this case, police versus protesters)—lead to the perception of greater mass-level polarization between the entities, which in turn can lead to greater personal attitude polarization (Han & Yzer, 2019). In other words, when encountering the protest paradigm frame in mainstream media, people who are predisposed to identify more with the police may believe more strongly that the protest is illegitimate and the police response was warranted. In contrast, people predisposed to identify more with the protesters may believe more strongly in the legitimacy of the protest and the importance of the protested injustice. These findings also have implications for collective mobilization. Polarization could increase mobilization among the group identifying more with the protesters, if they are led to strengthen their beliefs that the protest is legitimate. However, by emphasizing the most fraught clashes between protesters and the police, the protest paradigm frame could also reduce collective mobilization across mainstream audiences, given that highlighting extreme protest actions reduces public support for protests (Feinberg et al., 2020).

We focused our analysis on the elements of news coverage that are most likely to be consumed in an online news browsing context: headlines, images, and captions. As online news consumption is increasingly oriented toward breadth rather than depth, the framing that exists in these elements takes on increasing importance (Ofcom, 2018). When news consumers engage with content more superficially, images and headlines take on even greater persuasive power (Cyr et al., 2018). Our work emphasizes the need for greater understanding of the frames that exist in these bite-size pieces of news content, especially with respect to persuasive power of images (Eberhard et al., 2004; Reinka & Leach, 2017, 2018).

Given that we predicted that African American-oriented sources would provide more information legitimizing the Ferguson protests across the board, it was notable that these sources were not more likely than top general sources to frame the events in Ferguson using the frame identified by Factor 1 of the exploratory factor analysis, but were more likely to use the frame identified by Factor 3. Though it also emphasized disruptive protest and police, the Factor 1 frame stressed the death of someone who was Black, unarmed, and young, information that ostensibly supports the legitimacy of the subsequent protests by highlighting the role of race and harm against an undeserving victim. However, it did not name or show images of Michael Brown (nor did the Factor 2 protest paradigm frame). In contrast, the Factor 3 frame emphasized the death of Michael Brown as a specific Black individual, referencing him by name and showing his picture. These results suggest that individuation of the victim may be a particularly salient distinction in news frames of protest. Indeed, an emphasis on individuation is consistent with other related movements, such as #SayHerName, which explicitly calls for naming and individuating Black victims of police brutality (African American Policy Forum, 2015). The galvanization of support for addressing the Syrian refugee crisis after the drowned 3-year-old Aylan Kurdi's photograph and name were widely distributed in

news and social media also supports the idea that individuation of victims may be a particularly powerful aspect of news frames of social issues and the protests they spark (L. G. E. Smith et al., 2018). Protest movements and disadvantaged groups could benefit from understanding and capitalizing on the apparent strength of this type of individuating frame, though future work should attend to the distinction between individuation frames in the mass media and individuation frames on the part of protest groups, as the effects may not be the same.

Our work highlights the need for additional work on source specialization and fragmentation. Much research has focused on the extent to which audience fragmentation, defined as different sources (or groups of sources) having largely non-overlapping audiences, is growing with the advent of online news and social media (e.g., Fletcher & Nielsen, 2017). However, little work has addressed whether the actual content of these sources is also becoming more specialized as news outlets compete for the attention of desired segments of the consumer population in a high-choice information environment. Tewksbury (2005) shows that the sites frequented by consumers vary in their content, but it is not clear whether this pattern has become more pronounced with the proliferation of online news sources, or whether the content varies systematically by audience. Our work may answer the latter question in the affirmative, but as our data is limited to coverage of one particular event, we hesitate to generalize to news media content more broadly. If online news sources are increasingly tailoring their content to their presumed audience, especially in ways that align with the audience's pre-existing beliefs, efforts to understand the impact of this phenomenon on selective exposure will be important. Source specialization could heighten selective exposure to attitude-confirming information and potentially increase polarization—even with no change in consumer behavior (DiFonzo et al., 2013; Iyengar & Hahn, 2009). This idea dovetails with recent work illuminating situational influences in the online news media

environment that could increase selective exposure beyond consumer choice (see Turetsky & Riddle, 2018). Work in this area could also provide insight into the extent to which online news frames are determined by traditional top-down influences (e.g., editorial decisions based on the news team's own belief systems and interpretation of events, professional and societal norms and values, and organizational pressures and constraints; Scheufele, 1999; Shoemaker & Reese, 2013; McCombs & Shaw, 1972) or bottom-up influences (news organizations covering events in response to real or perceived demand by the public). Understanding the source of digital news frames is important for those who wish to shape or understand the psychology of these frames.

Additionally, although we captured a near census of relevant articles from the top African American-oriented sources, this still amounted to just 18 sources. Although it would perhaps be informative to capture a larger number of sources, the relative audience sizes quickly become much smaller. For instance, the smallest African American site in our sample, ClutchMagOnline, had just 139,000 unique visitors in January of 2015, when Pew Research Center (2015) identified top sources. Although this is a large number, it is a small fraction of the approximately 42 million Black people in the United States as enumerated by the 2010 U.S. Census (Humes et al., 2011). Although more sources would be helpful, they would be drawn from sites with vanishingly small audiences. Additionally, because of our sampling methodology, the general public sources also featured six sources headquartered in the U.K. Although these sources are in our sample because they are heavily consumed by American audiences, there are likely to be some dimensions on which a fully random sample of English-speaking international sources would yield consistent differences in the variables we examined here. For example, perhaps sources are more likely to highlight injustices and legitimize protests occurring in other countries, when doing so does not implicate their own systems and institutions as potentially unjust.

By intentionally sampling both domestic and international coverage of events such as Michael Brown's shooting and subsequent protests—or by comparing coverage by the same sources of domestic and international events that are similar in nature—future research could shed light on how news frames of protest differ in this regard.

The news media plays a vital role in public discourse, but is undergoing rapid shifts in the digital era. Careful navigation of these shifts is imperative if the media is to continue to be a valuable communication and information dissemination tool. By framing the shooting of Michael Brown and the subsequent protests in different ways, these media organizations risk instead becoming tools to facilitate and maintain group divisions in attitudes and beliefs.

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Supplemental material

Supplemental material for this article is available online.

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