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UNIVERSITY OF CALIFORNIA,
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The Design of Online Environments (Political Hashtags)
and the Quality of Democratic Discourse At-Scale

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Informatics

by

Eugenia Ha Rim Rho

Dissertation Committee:
Professor Melissa Mazmanian, Chair
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Professor Kai Zheng

2020

DEDICATION

To

my father, Yoon Rho

and

mother, Kwang Sook Kim

for their

unconditional love and encouragement.

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“Political Hashtags & the Lost Art of Democratic Discourse.” Eugenia Ha Rim Rho and Melissa Mazmanian. Political Hashtags & the Lost Art of Democratic Discourse. *ACM Conference on Human Factors in Computing Systems*, May 2020, p. 1-13. Best Paper Honorable Mention.

“Hashtag Burnout? An Experimental Study Investigating How Political Hashtags Shape Reactions to News Content.” *Proceedings of the ACM on Human-Computer Interaction*, Volume 3, Issue CSCW, November 2019, Article No.: 197, p. 1–25

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ABSTRACT

The Design of Online Environments (Political Hashtags)

and the Quality of Democratic Discourse At-Scale

by

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Facilitating democratic discourse, or people's ability to access factual information in service of thoughtful discussion of social issues, is critical for democracies to function properly. However, with the rise of online fake news, misinformation, and political extremism, it is becoming increasingly difficult to have civil conversations on the internet. As a first step to addressing this issue, scholars need to understand how the current design of online environments shapes people's ability to respectfully engage across social and political differences. In this dissertation, I investigate how common social media design features, such as hashtags directly impact the quality of democratic discourse at-scale. Using natural language processing, statistics, and experimental design, I empirically demonstrate how linguistic behavior and the presence of political hashtags in online social media news articles impact the quality of discussions surrounding race, gender, and equality. Through my findings, I provide a theoretical examination of *functionality* and *intertextuality* as critical aspects of online design. Online design considerations that consider *functionality* alone tend to promote a digital public sphere that predominantly favors hashtag (or content) producers over non-users and passive content consumers. The sole emphasis on the functionality of design features drives frequency-driven research practices that prioritize discourse conditions for hashtag

producers through volume-based definitions of discussion quality. Collectively, the research studies in this thesis are motivated by a desire to understand how online spaces can be better designed to foster interaction and discourse that can bridge rather than sharpen social differences. Results from this dissertation research strongly indicate that scholars, designers, and engineers need to rethink and evaluate how current methodological approaches that prioritize the functionality of online design choices are limiting the way we understand the quality of democratic discourse on the internet. As a step towards this direction, I evoke Kristeva's notion of intertextuality to demonstrate how online design choices facilitate the power of language in which important social topics are discussed across networks.

CHAPTER 1

Introduction

1.1 Online Democratic Discourse Around Social Media News Content

1.1.1 Agenda Setting Powers of the News Media

Whether through television, newspapers, or more increasingly through Social Networking Sites (SNS), news media coverage of current events have long played a significant role in mediating knowledge and information to the public. In Political Communication research, news media influence on the public's knowledge of current events is seminally explained through agenda-setting theory (M. E. McCombs & Shaw, 1972). The agenda setting power of the news media is described as having "the ability to influence the importance placed on the topics of the public agenda" (Blanco Ramírez & Scott Metcalfe, 2017). News media not only have the power to create public awareness around social issues (Brown & Deegan, 1998; L. Guo & McCombs, 2011; M. McCombs & Reynolds, 2002), but can also influence how the public perceives what issues to be most important (Kiousis et al., 2005; M. McCombs, 1997; M. McCombs & Reynolds, 2002; Russell Neuman et al., 2014). There are two fundamental assumptions that underlie this theory. First, news media filter and shape reality rather than reflect it and second, media concentration on specific issues can influence the public to perceive such topics as more important than others (M. McCombs, 1997; M. McCombs & Reynolds, 2002). These assumptions are not only important to understanding how people consume news content, but also how they engage in discussions around current events.

In fact, democratic discourse, or the manner in which people engage in discussions around critical social issues through factual information (Albrecht, 2006; Dahlberg, 2001a; Dahlgren, 2005; Hess, 2008; Papacharissi, 2004; Perrin, 2005) cannot be separated from the agenda-setting powers of the news media (George, 2006; Kioussis & Wu, 2008; Payne, 2009; Reese et al., 2001). Simply, news consumption is a key determinant of how people engage in democratic discourse around current events.

For example, people watch the news to obtain information through which they evaluate and form their judgments about the world (M. McCombs, 1997; Payne, 2009). News media is the source of informational input that people consume to weigh and consider different viewpoints to cultivate reasoned arguments (Kioussis et al., 2005; M. McCombs, 1997). This supply of (ideally) factually accurate, credible, and impartial information is the basic fodder of discourse for people to discuss current events with others (Chouliaraki, 2000; M. E. McCombs et al., 1997). Such discussions in return, build and shape people's understanding of the world, enacting a perspective of the reality in which they live (Pollner, 2010; Scheufele, 2000). Therefore, it is said that the *reality* of events is filtered by the news media through the delivery information to the public. Second, media concentration on specific themes and issues invariably sets the stage for what topics ought to be considered by the public as important matters of discussion (L. Guo & McCombs, 2011; M. E. McCombs & Shaw, 1972; Scheufele, 2000). In general, public discourse around current events, especially those that occur online are increasingly influenced by the issues that news media companies choose to concentrate on (J. Miller, 2014; Moberg, 2018).

1.1.2 The Importance of Democratic Discourse Around Current Events

People rely on factually accurate information to understand and constructively discuss current events with others. Such deliberation around important public issues in return, is critical for democratic societies (Bessette, 1980; Christiano, 1997; Coleman et al., 2015; Dahlgren, 2005). In fact, the basic tenet of deliberative democracy posits that citizens' ability to engage in democratic discourse, or the ability to access and interpret information (Bächtiger et al., 2010; Bessette, 1980; Bohman et al., 1997; Fishkin & Laslett, 2008) and to critically reflect and discuss important social issues (Bessette, 1980; Bohman et al., 1997; Fishkin & Laslett, 2008; Hess, 2008) enables individuals to find commonality among one another despite social or political differences (Bohman et al., 1997; Christiano, 1997; Cooke, 2000; Dryzek, 2006; Mouffe, 1999; Ryfe, 2005; Van Mill, 1996). People's ability to overcome individual differences by recognizing shared values and perspectives through deliberation helps society to transcend partisan extremities (Bohman, 2000a; Dryzek, 2002, 2006; Fishkin & Laslett, 2008; Hess, 2008) – a crucial aspect for democracies to function properly (Barber, 2003; Chambers, 2003; Dryzek, 2006; Granato et al., 1996; Morlino, 2004). The public's ability to engage in constructive democratic discourse is essentially what helps nurture a strong public voice (Albrecht, 2006; Bessette, 1997; Fishkin, 1997; Luskin et al., 2002). Through heated discussions and exploration of diverse viewpoints, democratic discourse of current events helps people to cultivate a strong public opinion that reflects collective values and perspectives (Albrecht, 2006; Bohman, 2000b; Christiano, 1997; Coleman et al., 2015). In return, it is the strength and soundness of the public voice that keep authorities accountable (Gastil, 2000; Luskin et al., 2002; Speer, 2012), hyper-partisan forces in check (Bächtiger et al., 2010; Bohman, 2000b; Cooke, 2000; Dryzek, 2006; Hess, 2008; Porta, 2013; Van Mill, 1996), and fuse society together despite social and political differences across individuals (Manning & Schütze, 1999)(Chambers, 2009; Christiano, 1997; Dryzek, 2002,

2006; Gastil, 2008; Granato et al., 1996; Mouffe, 1999). In essence, the formation of a resilient public voice through democratic discourse is critical for society to function properly. However, engaging in democratic discourse around current events is not without its challenges, especially today.

Today, most people find watching the news to be difficult (J. Gottfried, 2020) and talking about it with others, even harder, especially when it is about politics or social issues (Jurkowitz & Mitchell, 2020). According to a survey conducted in February 2020, almost half of Americans have stopped talking about news related to politics with other people (Jurkowitz & Mitchell, 2020). What is really interesting is that adults who are more engaged with political news are more likely to have stopped discussing social or political issues with others. More people increasingly report that fake news, mis/disinformation, and political extremism are making it harder than ever to talk to others about important social issues (Mitchell et al., 2019). For example, about 67% of Americans report to feeling confused about basic facts around current events while 70% report to having seen political news that seems completely made up (Jurkowitz & Mitchell, 2020). On top of this, it is reported that partisan polarization in the use and trust of media sources has widened in the past five years (Jurkowitz et al., 2020).

Furthermore, adding to these challenges is perhaps the influence of technology. The platforms and channels through which news is produced and consumed also shape how people perceive and talk about important social issues (Chouliaraki, 2000; Halpern & Gibbs, 2013; M. McCombs, 1997; Payne, 2009; Rishel, 2011). Technological advancements have certainly changed the conditions of news consumption and the avenues through which people engage in democratic discourse.

1.1.3 The Design of Social Media and the Changing Conditions of Democratic Discourse

Scholars have argued that the manner in which people engage in discussions around important social issues, or political discourse is becoming increasingly mediatized. In other words, “news media are increasingly shaping and framing the processes and discourse of political communication as well as the society in which that communication takes place” (Lilleker, 2006). With the introduction of new media technologies, it is said that modern public discourse too, is affected by technological advancements (Hepp, 2012; Hjarvard, 2013; J. Miller, 2014; Moberg, 2018). In essence, the way people access, interpret, and discuss news with others has significantly changed over the years thanks to technology.

The most prominent example is the emergence of social media news consumption. Obtaining political news or information around current events through social media is common in today’s digital age (Andrew Perrin, 2015; Duggan & Smith, 2016; Mitchell et al., 2016; A. Smith & Anderson, 2018). Most news publishers have a social media presence through Twitter or Facebook. Articles are posted with the expectation that readers will use the comments section of the social media platform to engage in discussions on current issues. Over the past few years people have been increasingly using SNS to not only discover news, but to share, comment, ask questions, and engage in discussion with those connected through their networks (Grieco, 2017; Shearer & Gottfried, 2017; Shearer & Matsu, 2018). In fact, according to Pew Research, Americans are more likely than ever to get news from multiple social media sites (Shearer & Gottfried, 2017). Approximately one out of four U.S. adults (26%) obtain news from two or more social media sites, up from 15% in 2013 and 18% in 2016 (Greico, 2017).

However, today's practices of consuming and discussing news through social media are a tremendous departure from the way people consumed and conversed about the news in the past (Babaei et al., 2018; Choi, 2016; Enli & Simonsen, 2018; A. Friedman, 2014; George, 2006; Pentina & Tarafdar, 2014; Posetti, 2010). In the past, people generally watched televised news broadcasts typically in the evening (Ahlers, 2006). Now, more people come across news whenever and wherever in the course of doing something else (Boczkowski et al., 2018; Mitchell et al., 2016). For example, it is typical for people to receive news from different sources simultaneously while multi-tasking on numerous screens from various media (Ahlers, 2006; J. A. Gottfried et al., 2017; Mitchell et al., 2016; Ran et al., 2016). Furthermore, while discussion of current events typically occurred through face-to-face interactions in 'salons' or public spaces for discourse (Dean, 2001), today, online conversations often take place with strangers known only perhaps by username or profile picture in a thread of thousands of other commenters.

The sheer amount of information people are exposed to is another example: a single Sunday edition of the current New York Times contains more information than what a typical 19th century citizen faced in his or her entire lifetime (Jurkowitz & Mitchell, 2020). Another example is the display of information. In newspapers, professional editors carefully curated content by category of topic and length. Whereas today, people come across news content sandwiched between advertisements, videos, or memes. In fact modern day online news consumption is best characterized by the "soaring number of sources that provide news via print, broadcast, and interactive modes, spewing text, pictures and video at any time and in any place" (Pentina & Tarafdar, 2014). This saturation of mixed content and the diversity of media format forces people "to cope with a surfeit of extra information, often unrelated to [personal] interests and needs, including spam and scams" (Pentina & Tarafdar, 2014), a reality particularly salient to news consumption on social media.

Furthermore, the *design* of social media environments engenders a dramatically different experience of news selection, exposure, and interaction with news content than in the past (Babaei et al., 2018; Choi, 2016; Esau et al., 2017; B. Semaan et al., 2015b). In fact, design features on social media increasingly shape the conditions of how people come across and talk about current events. Take for example: the infinity scrolling of content on news feeds where attention is calibrated in micro-seconds; hashtags that amplify the visibility of trending social topics; or the endless tirade of affective comments or emotive buttons that induce people to emotionally react to news content or observe how others do so. These design choices characterize the conditions in which people consume and interact SNS content, including news coverage on current events. Social media design choices deliver personalized content that is tailored based on how people interact with what they see as they click, react, comment, and search for using a hashtag. The way people interact with these design elements influence how they make sense of and discuss current events, thereby, warranting a deeper investigation into the discursive practices afforded by social media news consumption.

1.2 Motivation of Research

Researchers in both Political Communication and Human-Computer Interaction (HCI) have recognized the changing conditions of online democratic discourse. With the emergence of the internet, scholars in Political Communication have theorized how the digital public sphere or the conditions in which online discourse occurs, influences the nature of public discussions (Bohman, 2004; Brundidge, 2010; Dahlberg, 2001a, 2001b; Dahlgren, 2005, 2005; Gerhards & Schäfer, 2010; Gimmler, 2001; Papacharissi, 2002).¹ HCI scholars too, have shown that the design of technological spaces affects how people engage with others and interpret political and social content (Aragón et

¹ I will describe relevant scholarship in more depth in Chapter 2: Related Works.

al., 2017; Babaei et al., 2018; Coleman & Moss, 2012; Dahlberg, 2001b; D. H. Davis, 2017; Diakopoulos & Naaman, 2011; Gordon et al., 2016; Nelimarkka et al., 2017; B. Semaan et al., 2015b; B. C. Semaan et al., 2014; Towne & Herbsleb, 2012; L. Xiao et al., 2015).

For example, researchers and those studying online deliberation have demonstrated how design choices like active moderation (Camaj & Santana, 2015; A. Edwards, 2002; Noveck, 2003; Wright, 2009; Wright & Street, 2007) and asynchronicity (Esau et al., 2017; Janssen & Kies, 2005; Strandberg, 2015; Strandberg & Berg, 2015; Stromer-Galley & Martinson, 2009) can improve discussion quality on online debate forums. While prior work provides foundational understanding about the link between design and online deliberation, researchers have generally focused on the impact of design on digital spaces that were *specifically* created to facilitate online debates in the first place (Coleman & Moss, 2012; Dahlberg, 2001a; Esau et al., 2017).

Currently, online political discourse is increasingly taking place *beyond* structured debate forums that were purposefully designed for back-and-forth argument (Garimella et al., 2018; Munson & Resnick, 2010; B. Semaan et al., 2015b; B. C. Semaan et al., 2014). As previously mentioned, the conditions of discourse on social media represent a drastic departure from those of the past. Over the years, more people (beyond those *inclined* to visit debate forums) have been engaging in political discourse on social media spaces, such as Twitter on Facebook (Duggan & Smith, 2016; J. A. Gottfried et al., 2017; A. Smith & Anderson, 2018; Winter, 2019). However, most HCI and Political Communication research examining such discussions do not empirically demonstrate at-scale, how social media design features *directly* influence the nature of online discourse. Instead, researchers have predominantly focused on the nature of conversations in and of itself, without investigating how the specific conditions of discourse (shaped by various social media design features) impact discussion quality on social media.

Take political hashtags for example. Political hashtags are considered one of the most prominent social media design features in online political discourse around current events² (Bruns & Burgess, 2011; Enli & Simonsen, 2018; Lin et al., 2013; Rambukkana, 2015; Small, 2011; Sunstein, 2018). By allowing people to filter search, and join discursive networks linked to the keyword behind the ‘#’ symbol, hashtags are pervasively used to facilitate discussions on social media. Most scholars examining political discourse around social media hashtags situate the locus of analysis on *hashtagged* discussions (texts that contain hashtags) or those who use hashtags (Blanco Ramírez & Scott Metcalfe, 2017; Booten, 2016; Enli & Simonsen, 2018; Jackson et al., 2017; Lin et al., 2013; Posetti, 2010; Rambukkana, 2015; Shi et al., 2014; Starbird & Palen, 2012; F. Xiao et al., 2012). None of these studies are operationalized to empirically examine the *direct* impact of political hashtags as a social media design character across a *broad* audience. Yet, the implications derived from such studies are described as if the discursive powers of hashtags are generally applicable beyond those who use them.

The examination of how common social media design choices like political hashtags directly influence the conditions of discourse on the internet, warrants an investigation that goes beyond an analysis of hashtagged content or those who use hashtags. Looking at hashtagged discussions alone only provide a *partial* understanding of the role of political hashtags in facilitating online conversations on important social topics. How would discussions on identical topics and news

² Today, political hashtags are an inseparable part of widespread online discourse around political or social issues (Bruns & Burgess, 2011; Enli & Simonsen, 2018; Lin et al., 2013; Rambukkana, 2015; Small, 2011; Sunstein, 2018). Nearly anything political with the intent of attracting a wide audience is branded with a catchy hashtag. For example, take election campaigns (e.g., #MAGA, #HillaryForPrison), social movements (e.g., #MeToo, #BlackLivesMatter, and more recently, #HongKongProtest and #NoChinaExtradition), calls for political action (#ImpeachTrumpNow), support or opposition towards a bill (#LoveWins, #VoteNo), stance on a constitutional right (e.g., #2A, #PewPew, #GirlsWithGuns), or challenges against prevalent social norms (e.g. #DressLikeAWoman, #TakeAKnee) – the examples are plenty and still growing.

content emerge in the *absence* of social media design choices like political hashtags? While scholarship has advanced our understanding of the nature of social media dialogue around hashtagged content, a core task is to empirically examine and demonstrate at-scale, the *direct* impact of political hashtags on the quality of democratic discourse across a *broad* audience. This is the premise of my dissertation work.

Clearly, the conditions of modern democratic discourse around current events have changed substantially. The pervasive use of political or news-topic oriented hashtags related to social issues is a prime example of such changes. Without understanding how common social media design choices and norms are affecting the way people understand and talk about important social issues, it will be impossible to improve the online environment as an avenue for democratic discourse. Sitting at the intersection of Human-Computer Interaction (HCI) and Political Communication, this dissertation work empirically examines and demonstrates how the current design of online environments impacts the quality of online democratic discourse around social media news consumption. Specifically, the dissertation research asks how political hashtags operate as a social media design feature in shaping the quality of online discussions around news content related to gender and racial issues.

1.3 Dissertation Outline

1.3.1 Phases, Studies, and Research Questions

The primary goal of this dissertation work is to examine at-scale, the impact of political hashtags on the quality of online democratic discourse. In this vein, I ask the primary research question: How do political hashtags in social media news posts affect the quality of democratic discourse? Using #MeToo and #BlackLivesMatter (the most prevalently used hashtags in social media news articles)

as a topical lens, I investigate the impact of political hashtags (as a design feature) on the quality of online democratic discourse through three studies across Phases 1 and 2 with the following focus:

Phase 1: What do ‘in-the-wild’ conversations³ around political hashtags in social media news articles look like? (Study1)

Phase 2: How does the presence of political hashtags in social media news posts affect quality of online discourse around news content? (Studies 2 and 3)

In Phase 1, I investigate how linguistic factors related to discourse quality - the words people use and how they use them - contributes to the divide in online conversations around political hashtags. In Phase 2, I examine how the presence versus absence of political hashtags in social media news articles directly impacts the quality of discourse around social topics related to race and gender. Given that the empirical study of mediated political discourse is primarily an examination of language practices in their institutional context (Chouliaraki, 2000), I examine the quality of democratic discourse through the linguistic behavior of commenters using discourse analysis (Gee, 2014), natural language processing (NLP), and statistics for all three studies.

Phase 1: What do ‘in-the-wild’ conversations around political hashtags in social media news articles look like? (Study1)

In Study 1, I examine real-world discussions taking place around social media news articles that include political hashtags (#MeToo) across three politically distinct social media news publishers (far-left, center, and alt-right). The goal of Study 1 is to take a close examination of the discussions taking place in the context of social media news articles containing political hashtags in-the-wild.

³ Actual Facebook comments appended under news articles

Like most political content, the perception of political hashtags are different across individuals with varying political views and orientations. I examine the nature of discussion inspired by social media news publishers known to attract users with distinct political orientations (Democracy Now for far-left, New York Times for center⁴, and Breitbart for alt-right). For this first study, I focus on the following research questions.

Study 1 Research Questions:

- RQ1. What linguistic and affective attributes characterize commenting behavior across three politically distinct news sources covering #MeToo?
- RQ2. What are the differences in the semantic contexts in which #MeToo is framed in the commenting discussion across three politically distinct news sources?
- RQ3. What kind of rhetorical patterns are observed from the discussion of the most important keywords across commenters from three politically distinct news sources?

Phase 2: How does the presence of political hashtags in social media news posts affect quality of online discourse around news content? (Studies 2 and 3)

In Phase 2, I empirically compare how the presence versus absence of political hashtags (#MeToo and #BlackLivesMatter) in social media news posts impact perspective (Study 2) and commenting behavior (Study 3) around news content. I take an experimental approach and manipulated the presence vs. absence of political hashtags in news posts. In order to keep the effect of the platform constant, I focus on news outlets considered mainstream and center (Figure 1.1).

⁴ I understand that New York Times is considered left-center. I discuss this in the limitations and justify why NYT was selected as the appropriate social media news publisher for this study.

		POLITICAL ORIENTATION		
		Far-Left	Center	Alt-Right
DESIGN	Phase 1			
	Hashtag <i>Present</i>			
	Hashtag <i>Absent</i>			
	Phase 2			
	Hashtag <i>Present</i>			
	Hashtag <i>Absent</i>			

Figure 1.1 Dissertation Approach Across Two Phases

Note: In Phase 1, I examine discourse behavior across three politically distinct social media news publishers under one uniform design condition (social media news posts with hashtags). In Phase 2, I vary the design condition by altering the presence versus absence of political hashtags in the news post while focusing on one news publisher that is considered center (or left-center).

For Study 2, I examine how the presence of political hashtags in social media news posts affects perception of news content by asking the following research questions.

Study 2 Research Questions

- RQ1. How does the presence of political hashtags in news posts affect how a general audience orients towards news content?
- RQ2. How do people across the political spectrum, particularly the politically moderate, respond to news posts framed with political hashtags?
- RQ3. How does the presence of political hashtags affect whether high vs. low intensity Facebook users perceive partisan bias in news posts?

To understand how discourse behavior around news content is affected by political hashtags, in Study 3, I ask the following research questions:

Study 3 Research Questions

How does the presence of political hashtags in news posts influence:

RQ1. the topical content discussed by the commenters?

RQ2. the emotional tone of commenters?

RQ3. the rhetorical style of discourse across commenters?

1.3.2 General Overview of Chapters

In Chapter 2, I discuss related work by focusing on two areas of scholarship: (1) online deliberation research and (2) scholarship on political hashtags. In reviewing the state of online deliberation literature, I explain how the technical characteristics of the internet have motivated researchers to explore the online realm as an avenue for democratic discourse. I then describe the importance of considering design in online deliberation research. I conclude with ontological challenges in online deliberation literature as well as the reliance on Habermasian-inspired models of discourse that make assessing deliberation quality challenging for empirical researchers examining modern political discourse on social media. Relatedly, I argue for the importance of including everyday political talk and moving beyond the strict adherence to Habermasian standards of online deliberation in evaluating democratic discourse on the internet. Finally, I highlight the fact that the link between design and deliberation has not been explored in depth, especially in the context of social media news consumption.

In the second part of Chapter 2, I set the stage for why political hashtags need to be examined as a common social media design character in relation to online democratic discourse. First, I describe the journalistic use of political hashtags on social media and how prior literature views the role of political hashtags in online democratic activism and political discourse. Then I discuss how scholarship on political hashtags is limited to an examination of those who use hashtags or what I describe as 'hashtag producers'. Additionally, I discuss methodological limitations in current approaches to assessing discourse quality around political hashtags. Finally, I provide a brief background on the #MeToo and the #BlackLivesMatter hashtag as they are the two primary hashtags examined in this dissertation work.

In Chapter 3, I detail the methods, findings, and discussion for Study 1. In this chapter, I empirically demonstrate how linguistic factors related to discourse quality - what words people use and how they use them - contributes to the divide in online conversations around political hashtags. In Chapter 4, I describe the design of the controlled online experiment in Phase 2 for studies 2 and 3. The purpose of this experimental approach is to empirically demonstrate the direct impact of political hashtags on people's perception (study 2) and discourse behavior (study 3) in their consumption of social media news content. Specifically, by designing and launching a large-scale controlled online experiment, I empirically investigate how the presence versus absence of political hashtags in social media news articles directly shapes people's perception (Chapter 5) and the quality of online discourse (Chapter 6) around current events pertaining to topics of gender and race. Results from the three studies demonstrate the powerful impact of political hashtags on the quality of online democratic discourse around current events. Finally, in Chapter 7, I recap the three main contributions of my dissertation research and conclude my thesis by making four primary

arguments based on a theoretical examination of the functional and intertextual qualities of political hashtags as a social media design character as summarized below.

Main Contributions of this Research

- I. An empirical examination of how people's linguistic behavior is reaffirming divisions in how political hashtags are consumed and understood.

- II. An empirical demonstration of how the presence of political hashtags in social media news posts impacts (a) the perception and (b) the quality of discourse surrounding social topics pertaining to race and gender across a general audience.

- III. A theoretical examination of functionality and intertextuality as critical dimensions to consider in designing spaces for online discourse based on four primary arguments:
 1. Argument 1: Designs that consider functionality alone tend to favor operative research and engineering practices based on the frequency of commenting behavior, which are biased toward volume-based definitions of discourse quality.

2. Argument 2: Frequency-driven research practices tend to promote a digital public sphere that predominantly favors hashtag (or content) producers over non-users and passive content consumers.
3. Argument 3: The creation and assessment of online systems that focus on the creation of content (particularly by hashtag producers) over how content is consumed and understood do not meet the deliberative standards of inclusivity and equity of participation in democratic discourse.
4. Argument 4: To better design for online democratic discourse, we need to consider not just functional, but *intertextual*, aspects of online design features.

CHAPTER 2

Related Work

2.1 Designing for Online Deliberation

2.1.1 Internet as a Deliberative Public Sphere

Deliberative democracy has been one of the most influential theoretical concepts among researchers examining the relationship between democracy and internet technology (Chadwick, 2009). First coined by Joseph M. Bessette, deliberative democracy is a school of thought in political

theory that argues that political decisions should be based on fair and reasonable discussion among citizens (Bessette, 1980). Advocates of deliberative democracy view the deliberation of public issues as an ideal mechanism for citizen participation in politics, where “rational debate or argumentation between citizens over common problems leads to critically informed public opinion that can guide and scrutinize official decision making processes” (Dahlberg, 2007). Based on these ideals of deliberative democracy, many of the first online democracy scholars viewed the internet as an opportunity to expand the public sphere for citizen deliberation (Benson, 1996; Bessette, 1980; Bohman, 2004; R. Davis, 1999; Fang, 1996; Noveck, 2000; Sunstein, 2001; Wilhelm, 2000). Such scholars felt that the “internet’s two-way, relatively low cost, semi-decentralized and global communications, combined with [the] evolving interactive software and moderation techniques” (Dahlberg, 2007) offered the ideal technical characteristics that would foster a virtual space for rational deliberation.

As the use and understanding of the internet as a space for political discourse gradually expanded, online deliberation scholars further refined this stream of research by theorizing the internet as an ideal space for deliberation (Dahlberg, 2001a, 2001b; A. Edwards, 2002; Papacharissi, 2002, 2004; Wright & Street, 2007). Such scholars argued that online deliberation would help strengthen public voices to hold government officials accountable (Dahlberg, 2001a; Wright & Street, 2007). Further, it would nurture “informed [and] thoughtful citizens, whose exposure to one another’s experiences and arguments might equip them to perform a role as intelligent participants in their own governance” (Coleman & Moss, 2012). In short, the “Internet was considered to provide an infrastructure for the public sphere that many deliberative advocates have dreamed of” (Graham & Witschge, 2003).

Hence, understandably, interest in the internet as a space for online deliberation flourished since the 2000s (Albrecht, 2006; Black et al., 2011; Coleman & Gotze, 2001; Dahlberg, 2001a; Davies & Gangadharan, 2009; Delborne et al., 2011; Gerhards & Schäfer, 2010; Graham & Witschge, 2003; Price & Cappella, 2002; Stromer-Galley & Martinson, 2009) with scholars viewing online deliberation as, in the words of Coleman and Moss (Coleman & Moss, 2012):

“[T]he opening up of the Internet as a popular agora in which positions can be exposed to public scrutiny and debate, and the force of the more reasoned argument might prevail.”

However, with growing concerns over filter-bubbles (Pariser, 2011), digital divides (Rice & Katz, 2003), privacy risks (Abokhodair & Vieweg, 2016; Acquisti et al., 2015; Alashoor et al., 2016), poor corporate management of personal data (Isaac & Kang, 2019), and more recently polarization (Baum & Groeling, 2008; Tucker et al., 2018; Weber, 2013), political extremism (Ben-David & Fernández, 2016; Lafree et al., 2018; Rudinac et al., 2017; Tucker et al., 2018, 2018; Wojcieszak, 2010), and mis/disinformation (Allcott et al., 2019; Bode & Vraga, 2015; Chou et al., 2018; Janna et al., 2017; Kuklinski et al., 2000; Starbird, 2019; Starbird et al., 2019; Tucker et al., 2018; Vicario et al., 2016), scholars have become increasingly wary of the internet’s potential as the new digital public sphere (R. Davis, 1999; Hill & Hughes, 1998; Margolis et al., 2000; Sunstein, 2018; Wilhelm, 2000; Wright, 2012).

Research spanning Political Communication, HCI, and Computer-Supported Cooperative Work (CSCW) has repeatedly demonstrated the deteriorating quality of online discussions marked with violence (Kalmoe, 2014; J. Li et al., 2017; O’Halloran et al., 2019; Tan et al., 2018), hate speech (Ben-David & Fernández, 2016; Chandrasekharan et al., 2017; Eddington, 2018; Fortuna & Nunes, 2018;

Gao & Huang, 2018; Gröndahl et al., 2018; Mandl et al., 2019; Mathew et al., 2019; Mondal et al., 2017; O'Halloran et al., 2019; Schmidt & Wiegand, 2017; Tan et al., 2018; Waseem & Hovy, 2016), racial (Chander, 2016; Obermeyer et al., 2019; Zou & Schiebinger, 2018) and gender biases (Garg et al., 2018; Sun et al., 2019; Vochocová, 2018; Zou & Schiebinger, 2018) along with political extremism (Ben-David & Fernández, 2016; Lafree et al., 2018; Rudinac et al., 2017; Tucker et al., 2018, 2018; Wojcieszak, 2010), and mis/disinformation (Allcott et al., 2019; Bode & Vraga, 2015; Chou et al., 2018; Janna et al., 2017; Kuklinski et al., 2000; Starbird, 2019; Starbird et al., 2019; Tucker et al., 2018; Vicario et al., 2016) and fake news (Al-Rawi, 2018; Borden & Tew, 2007; Conroy et al., 2015; Fourney et al., 2017). As a result, internet democracy researchers, who were once optimistic, are now coming to “cautious conclusions about the Internet facilitating deliberative democracy” (Dahlberg, 2007). Instead, scholars have begun to see online environments as amplifying what is ‘politics as usual’ (R. Davis, 1999; Hill & Hughes, 1998; Margolis et al., 2000; Sunstein, 2018; Wilhelm, 2000; Wright, 2012).

Resorting to this notion of ‘politics as usual’ however, does not entertain the idea that the design of online spaces might be making deliberative democracy *less* viable. Nor will this perspective change the fact that online spaces will continue to be popular and important spheres of political discourse – where current events around social issues are routinely shared and discussed (Mitchell et al., 2016; Shearer & Gottfried, 2017, 2017; Shearer & Matsa, 2018; A. Smith & Anderson, 2018). As mentioned earlier, the conditions of online discourse have been rapidly changing. Without understanding how the design of online spheres is affecting the nature of deliberation taking place in these arenas, it will be impossible to truly assess the internet’s potential to facilitate deliberative democracy.

2.1.2 Why We Should Consider Design in Online Deliberation

Research in online deliberation is fraught with challenges and debate around the theoretical conceptualization of what deliberation is, or what rightfully constitutes deliberation quality (Coleman & Moss, 2012; Dahlberg, 2001a; Davies & Gangadharan, 2009; Graham & Witschge, 2003). Before delving into these challenges, I build on the seminal work by Coleman and Moss in which they conceptualize the ‘deliberative citizen’ as a constructed and contingent entity (Coleman & Moss, 2012) to explain why design must be considered in online deliberation research.

In “Under Construction: The Field of Online Deliberation Research”, Coleman and Moss argue that deliberation and the capacities it presupposes are neither universal nor naturally occurring (Coleman & Moss, 2012). Evoking seminal scholarship on democracy and citizenship (Pamela Johnson Conover & Searing, 1994; Dahlgren, 1995; Trend, 2013), civic competence (Dahl, 1992; Shah et al., 2009), political efficacy (Balch, 1974; Easton & Dennis, 1967; Finkel, 1985; Karp & Banducci, 2008; Kenski & Stroud, 2006; Niemi et al., 1991), and civic education through political socialization (Chaffee et al., 1970; Finkel, 2002; Galston, 2004; Gimpel et al., 2003; Hyman, 1959; Kioussis et al., 2005, 2005; Torney-Purta, 2000), the authors argue that the “ability of individuals to make the most of their rights and exercise them in a responsible manner is not natural and does not emerge spontaneously” (Coleman & Moss, 2012). Instead, deliberation is something that “has to be learned, developed, and practiced through processes of socialization” (Coleman & Moss, 2012). In other words, a deliberative citizen is, a “construction all the way down, a contingent product of a particular set of discourses and practices” (Coleman & Moss, 2012). Hence, online deliberation researchers must “consider the extent to which the deliberative citizen is ‘formed and normed’” (Coleman & Moss, 2012).

If deliberation is indeed, an evolving set of discourses and the development of norms that are learned through practice, then the shifting channels through which deliberation occurs cannot be separated from the understanding of what deliberation is. By this logic, the *design* of online environments that constitute the very conditions in which discourse takes place, shapes socialization, practice, learning, and how people engage in discourse on digital platforms. Thus, by the very definition of deliberation as a constructed and contingent product (or the deliberative citizen as a constructed and contingent entity), the scholarly examination of online deliberation quality cannot be exempt from a co-examination of the evolving emergence of online design features (comments, affective buttons, hashtags, etc.) and the changing socio-technical practices (e.g., how people use and engage with online design choices) through which deliberation takes place. This is what makes the examination of design and its effect on deliberation an imperative for online deliberation research. The significance of considering design in online discourse is in fact, strongly echoed in HCI scholarship where researchers have repeatedly demonstrated how the design of technological spaces influences the way people engage with others and interpret online content (Aragón et al., 2017; Babaei et al., 2018; Coleman & Moss, 2012; Dahlberg, 2001b; D. H. Davis, 2017; Diakopoulos & Naaman, 2011; Gordon et al., 2016; Nelimarkka et al., 2017; B. Semaan et al., 2015b; B. C. Semaan et al., 2014; Towne & Herbsleb, 2012; L. Xiao et al., 2015).

However, most researchers studying online deliberation implicitly treat deliberation as a natural and universal phenomenon rather than a learned practice (Coleman & Gotze, 2001; Dahlberg, 2001a; Dahlgren, 2005; Davies & Chandler, 2012). This assumption is apparent in volumes of online deliberation research where acknowledgement of deliberation as an *evolving* set of *learned* practices is conspicuously absent. Instead, prior literature focuses on operationalizing deliberation as a standardized tool of measure (Bächtiger & Parkinson, 2019; Black et al., 2010; Ivison, 1997;

Lord & Tamvaki, 2013; Monnoyer-Smith & Wojcik, 2012; Steenbergen et al., 2003; Steiner et al., 2004; Stromer-Galley, 2007) for assessing online discourse quality. Implicit in such scholarship is the assumption that practices of deliberation are universal and stable (Coleman & Moss, 2012)—something that can be objectively standardized and calibrated for assessment.

As such, scholars operationalize deliberation by adhering to Western standards of rational communication that are seen as ‘naturally occurring,’ thereby enabling the creation of a *universal* standard of deliberation (Coleman & Moss, 2012; Dahlberg, 2001a; Seong-Jae, 2014; Wright et al., 2015).

The danger of such assumption in theoretical and methodological research practices is twofold. First, a strict adherence to discursive standards without a robust examination of the standards themselves can idealize deliberation practices that are based on a particular social and political world view (Black, 2008; Bohman et al., 1997; Elster & Przeworski, 1998; Fung, 2005; Min, 2009; Waldron, 1993; Warren, 2006). Such standards thereby run the risk of marginalizing the voices of culturally minoritized communities (Dahlberg, 2001a; Karpowitz et al., 2012; Mendelberg et al., 2014; Seong-Jae, 2014; Wright et al., 2015) that do not fit into molds of what is considered universal.

Second, when deliberation is perceived a natural and universal phenomenon, the practice or standards of deliberation can easily become exempt from critical inspection or expectations for improvement. This minimizes expectations on design and designers to work toward positively shaping and improve the practices of deliberation. It encourages research on online deliberation to treat the role design as superficial to the deeper project of understanding and fostering democratic deliberation. This becomes apparent when researchers describe making a checklist of which design feature does and does not work in promoting the said ‘universal’ form of deliberation. Such an

orientation to design not only hinders a deeper conceptual understanding of what deliberation is, but also minimizes the role and impact of design as an opportunity to improve practices that pertain to deliberation.

2.1.3 Ontological Challenges in Defining Online Deliberation

Among online deliberation researchers, there is no widely adopted or clear-cut agreement on the definition of deliberation (Coleman & Moss, 2012; Dahlberg, 2001a; Gastil, Black, Deess, et al., 2008; Gastil, Black, & Moscovitz, 2008; R. Kies, 2010; Raphaël Kies, 2010b, 2010a; Muhlberger, 2000, 2005, 2006). The main consensus within deliberation scholarship is that there exists “little agreement... regarding what deliberation is and how it might be measured” (Muhlberger, 2000). For example, Parkinson criticizes Button and Mattson (1999) for classifying discussions that “exhibit none of the procedural conditions of genuine deliberation” (Parkinson, 2003) based on what Parkinson considers as true deliberation in his work. This lack ontological consensus over what is and is not deliberation has thereby, made it even more challenging for online deliberation scholars to identify deliberative talk when it occurs (Bächtiger et al., 2010; Bächtiger & Parkinson, 2019; Button & Mattson, 1999; Coleman et al., 2015; Coleman & Moss, 2012). As a result, The assessment of deliberation is like aiming a moving target that “blurs the boundaries between the definition of deliberation and its evaluation” (Gonzalez-Bailon et al., 2010).

The lack of scholarly consensus can be attributed to the fact that researchers have drawn from different schools of thought around deliberative democracy (Dahlberg, 2001a). Online deliberation scholars have incorporated definitions and theoretical interpretations of deliberative democracy from various scholars in political philosophy, such as James Fishkin (Fishkin, 1997, 2011; Fishkin & Laslett, 2008), Joshua Cohen (Cohen, 1989, 1997), and Amy Gutmann and Dennis F. Thompson

(Gutmann & Thompson, 1998, 2009). This reliance on a variety of interpretations has affected how researchers define deliberative conditions and evaluate the extent and quality of online discussions. However, it can be safely argued that one of, if not the most influential theoretical underpinnings for online deliberation research is the work of Jürgen Habermas. In effort to empirically assess and understand the conditions of online deliberation, researchers commonly refer to the ideal conditions of discourse based on the Habermasian notion of the public sphere (Clifford, 2012; Dahlberg, 2001a; Dryzek, 2002; Gimmler, 2001; Graham & Witschge, 2003, 2003; Vitale, 2006; Wright et al., 2015).

2.1.4 Reliance on Habermasian Inspired Models of Deliberation

The ideal public sphere, according to Habermas, consists of four normative conditions necessary for proper deliberation to take place (Calhoun, 1992; Jürgen Habermas, 1991; Wiklund, 2016). The first condition pertains to what scholars describe as generality. The condition of generality stipulates that all competent citizens whose interests are affected by political decision-making have the right to be active participants in the deliberative process or are rightfully included in the deliberation of social issues pertaining to their everyday lives (Fang, 1996; Jürgen Habermas, 1991; Wiklund, 2016). The second condition pertains to the autonomy (from state and commercial influence) of communicative spaces in which people should be able to freely and openly engage in deliberation (Calhoun, 1992; Jürgen Habermas, 1991; Wiklund, 2016). The third condition stipulates that there should be reasoned exchange of arguments unaffected by power asymmetries between participants of the discussion or that “‘the forceless force of the better argument’ (or communicative power)...be allowed to sway participants” (Calhoun, 1992; Jürgen Habermas, 1991; Wiklund, 2016). The fourth condition pertains to the importance of perspective-taking among deliberation participants

(Calhoun, 1992; Jurgen Habermas, 1991; Wiklund, 2016). According to this fourth condition, participants must engage in role-taking or “put themselves in the position of all those potentially affected by the claims under consideration, and consider the situation from these other perspectives” (Dahlberg, 2004). Here, participants need to adopt attitudes of reciprocity (listening and talking sincerely rather than strategically) and impartiality (viewing matters of the common concern from the perspectives of others (Calhoun, 1992; Jurgen Habermas, 1991; Wiklund, 2016).

Unlike the first three conditions that generally relate to the requirements needed for this communicative act to take place, the fourth condition, pertains most closely to the actual communicative act of deliberation. In effort to operationalize and empirically assess deliberation quality, online deliberation researchers have further expanded this fourth condition. In doing so, scholars have turned to the concept of communicative rationality by Habermas (Jürgen Habermas, 2015; Jurgen Habermas, 1984). According to Habermas, Communicative rationality “involves the public use of reason via a process of argumentation where validity claims are criticized as being untrue, immoral, or insincere” (Graham, 2009). It is through the process of communicative rationality that people engaged in deliberation find shared meanings and consensus about the world (Jurgen Habermas, 1984)

2.1.5 Epistemological Challenges in Evaluating Deliberation Quality

Scholars realize the need for a categorical standard of assessment in order to empirically evaluate deliberation quality. Hence, researchers extracted and identified deliberative characteristics based on the interpretations of communicative rationality put forth by Habermas (Dahlberg, 2004; Graham & Witschge, 2003; Raphaël Kies, 2010a; Wright et al., 2015). However, scholars continue to

disagree over exactly what should and should not be categorically included in definitions of the qualities of rational deliberation (Janssen & Kies, 2005).

For example, Dahlberg identifies reasoned exchange of problematic validity claims, reflexivity, ideal role taking, sincerity, formal inclusion and discursive equality, and autonomy from state and corporate power as the six conditions of deliberation from the Habermasian readings of communicative rationality (Dahlberg, 2004). Schneider, on the other hand, distinguishes the “four dimensions that embody the spirit of the idealized public sphere” as equality, diversity, reciprocity and quality (Schneider, 1998). In response, some scholars like Jankowski and Van Os, exhaustively combine the dimensions suggested by both Schneider and Dahlberg’ (Jankowski & Van Os, 2004) while others selectively choose dimensions that are most relevant and appropriate for their specific study: form, dialogue, openness, tone, argumentation, and reciprocity (Jensen, 2003).

Further, scholars use different wordings or expressions to refer to similar or even identical deliberative characteristics. In other cases, researchers create hierarchal categories to distinguish deliberative qualities into separate groups. For example, Graham groups (1) rational-critical debate, (2) coherence, (3) continuity , (4) reciprocity , (5) reflexivity under the category of “process achieving mutual understanding” and (6) empathy (7) structural equality, (8) discursive equality, (9) structural autonomy, (10) discursive freedom, and (11) sincerity under “dispositional fairness” (Graham, 2009)

Finally, even if researchers are using the same list of deliberative qualities in their study, they differ in how to operationalize the measurement of these deliberation qualities. Take the quality of reciprocity – in some research, reciprocity is assessed as the number of replies along with a qualitative analysis on the actual content of what is included in the back and forth exchange of

discussions (Janssen & Kies, 2005). By contrast, some researchers employ exclusively quantitative approaches like Schenieder who states, “a message is considered reciprocal to a previous message if it appears in the same thread within seven days of the previous message, or if it cites the message directly by message identification number” (Schneider, 1998). Another example concerns the measurement of sincerity in deliberation. In assessing sincerity, Dahlberg argues for a qualitative analysis of texts focused on identifying coherence and consistency in speech and action (Dahlberg, 2004). Graham on the other hand assesses sincerity based on its absence, focusing on instances where online forum participants are aggressive towards one another (Graham & Witschge, 2003).

As shown, prior literature demonstrates clear epistemological challenges around empirically investigating deliberation quality. The selection of deliberation standards and operationalizing deliberation quality as a measurement scheme vary widely among scholars, resulting in what Janssen and Kies criticizes as researchers “operationalizing their own conceptions of what ‘good’ communication looks like” (Janssen & Kies, 2005). In the next sections, I draw on prior literature to elaborate on the dangers of excessively formalized measurement schemes and standards of deliberation that limit a holistic and robust assessment of online discourse quality. In doing so, I set the stage for the importance of including everyday political talk in online deliberation scholarship.

2.1.6 Risks of Excessively Formalized Deliberation Standards

As previously demonstrated, the Habermasian-inspired models of deliberation puts a strong emphasis on formalized conceptions of discourse that can be operationalized as measurement constructs (Bächtiger & Parkinson, 2019; Black et al., 2010; Graham & Witschge, 2003; Janssen & Kies, 2005; R. Kies, 2010; Raphaël Kies, 2010a). Such standardized notions of deliberation however,

overlook and marginalize individuals and groups whose deliberative voices do not fit into such criteria .

In fact, scholars have criticized the Habermasian model of deliberation as being exceedingly rational (Coleman & Moss, 2012), ethnocentric (Benhabib, 1994; Crocker, 2008; Dahlberg, 2001a; Min, 2009; Rosenberg, 2006; Seong-Jae, 2014), and gendered (Karpowitz et al., 2012; Karpowitz & Mendelberg, 2014; Mendelberg et al., 2014). As a result, deliberative standards pertaining to communicative rationality too often dismiss political talk as non-deliberative (Coleman & Moss, 2012; Dahlberg, 2001a). According to Coleman and Moss, strict deliberative standards inevitably “embody codes of class and status that work insidiously to filter out voices” (Coleman & Moss, 2012). This creates what Wright et al. describe as a ‘gentlemen’s club’ where discourse becomes “too dispassionate, rationalist, disembodied, masculine, and Western/Eurocentric in its orientation in insisting only on certain modes of rational, critical argument in political discourse”(Wright et al., 2015). When discourse is conceptualized as a privileged mode of communication, “some participants are advantaged over others, as some participants’ ‘naturalized’ modes of communication (often Western and masculine) are closer to the legitimate normative mode than others” (Dahlberg, 2007). Therefore, in order to fit in, or “in order not to be excluded, some voices must be more normalized and disciplined into fitting the deliberative mode than others” (Dahlberg, 2007).

The burden to become “normalized” or to qualify as eligible to participate in public discourse, is counter to the democratic intuition underlying the concept of deliberation. In order to be considered legitimate participants of deliberation, those wanting to participate must know how to “internalize the rules of the particular form of communication deemed democratically valid or be excluded from the public sphere”(Dahlberg, 2007). Otherwise, as aptly described in the words of Warren:

“Those on the outside must often shout in order to enter the conversation, and when they shout, they do so with accents, mannerisms, and ways of making points that don’t fit with the dominant model of deliberation.”

(Warren, 2006)

Clearly, it is evident that overly rigid adherence to prescriptive standards of deliberation runs the risk of disproportionately amplifying the voices and views of groups that have a ‘normalized’ advantage over those who do not. Upholding deliberation norms and practices as infallible is therefore undemocratic and counter to the foundational values of deliberative democracy. As a result, this has led some scholars to adopt a more expansive view of deliberation, one that includes everyday political talk.

2.1.7 The Importance of Considering Everyday Political Talk

Unlike formal debates, everyday political talk emerges in the context of daily conversations and is often interweaved with discussions that are not political in character (Pamela Johnston Conover & Searing, 2005; Dahlgren, 2002; Graham, 2015; Jackman & Sniderman, 2006; Kim & Kim, 2008; McCoy & Scully, 2002; Vromen et al., 2015; Wright et al., 2015; Wyatt et al., 2000). In contrast to the formal and rational Habermasian standards of deliberation, everyday political discourse tends to embrace “the vernacular, expressive and porous characteristics of everyday public speech, rather than strictly instrumental or institution-bound conceptions” (Wright et al., 2015). Despite being fragmented, anecdotal, and at times incomplete or messy (Highfield, 2017; Mansbridge, 1999; Wright et al., 2015), scholars acknowledge that everyday political talk possesses qualities that contribute to meaningful perspective-taking and public action foundational to deliberation

practices (Pamela Johnston Conover et al., 2002; Jackman & Sniderman, 2006; Kim & Kim, 2008; Mansbridge, 2007, 2007; McCoy & Scully, 2002; Vromen et al., 2015; Wright et al., 2015; Wyatt et al., 2000).

I argue that it is important to consider everyday political talk in examining the impact of design in online democratic discourse for two reasons. First, engaging in everyday political talk is a key aspect of democratic citizenship (Mansbridge, 1999; Wright et al., 2015). It has been shown that everyday conversations can better inform people's knowledge about social issues (Dahlgren, 2006; Vromen et al., 2015; Wyatt et al., 2000) as well as inspire shifts in political attitudes (Pamela Johnston Conover et al., 2002; Dahlgren, 2002; Huckfeldt et al., 2004; Perrin, 2005). Everyday political talk allows citizens to "construct their identities, achieve mutual understanding, produce public reason, form considered opinions, and produce rules and resources for deliberative democracy" (Kim & Kim, 2008). In fact, some scholars argue that everyday political talk is the basic foundation of formal deliberation (Pamela Johnston Conover et al., 2002; Kim & Kim, 2008; Mansbridge, 1999). Without understanding how people listen and talk in everyday vernacular about politics, it would be difficult to understand how they engage in more formal and deliberative forms of discourse (Graham, 2015; Jackman & Sniderman, 2006). In fact, everyday political discourse is the "microdynamics of democracy" (Dahlgren, 2006). In other words, free from the structural formalities of deliberation that create barriers to participation (Eveland Jr et al., 2011; Mansbridge, 2007; Wyatt et al., 2000), the 'pre/proto-political' nature of everyday political discourse (Wright et al., 2015) allows people to freely express personal ideas (Wyatt et al., 2000), cultivate political agency (McCoy & Scully, 2002), and develop a sense of solidarity among those who engage in conversation. Hence, everyday political talk is fundamental to democracy and should be considered in empirical studies focusing on the quality of online deliberation.

Second, with the advent of social media, everyday political talk has exponentially increased. Certain forms of political talk have poured into online spaces where the conditions of discourse have changed. Before social media became prevalent, people, particularly those with the motivational interests to discuss political topics, did so on online debate forums (Coleman & Moss, 2012; Dahlberg, 2001a; Esau et al., 2017). Here, discussion norms typically followed argumentative formats were conversations were often moderated by administrators (Albrecht, 2006; Benson, 1996; Dahlberg, 2001a). Expectations around discussion norms on social media are different (Garimella et al., 2018; J. A. Gottfried et al., 2017; Rho et al., 2018; Robertson et al., 2013; B. C. Semaan et al., 2014). The participation barrier for conversation is much lower (Jackman & Sniderman, 2006; Wyatt et al., 2000). It has become far easier for a larger and more general audience to actively engage in everyday political talk around current events – though comments appended below articles posted on social media news feeds or as comments to individual SNS pages (Dahlgren, 2002; Gil de Zúñiga et al., 2012; McCoy & Scully, 2002; Vromen et al., 2015).

Yet, most online deliberation scholars interested in the impact of design on discourse quality predominantly focus on internet debate forums or discussion-based online communities that are more adapted to the Habermasian qualities of rational discourse (Coleman & Moss, 2012; Dahlberg, 2001a; Friess & Eilders, 2015). The communicative norms and sociotechnical structures of such online environments are different from those of social media sites like Facebook and Twitter (B. Semaan et al., 2015a; B. C. Semaan et al., 2014). These platforms foster everyday political talk that often does not live up to the expectations of formal deliberation (Eveland Jr et al., 2011; Mansbridge, 2007; Wright, 2012; Wright et al., 2015). Hence, aside from a few noted exceptions (B. Semaan et al., 2015b; B. C. Semaan et al., 2014), scholars in both Political Communication and HCI studying the quality of political discourse on social media avoid mentioning the word ‘deliberation’ in their work

or distance themselves from formal conceptions of deliberation. Instead, these scholars refer to deliberation as ‘political’, ‘public’, and ‘civic’ discourse, or ‘social discussions’ or ‘democratic dialogue’ – often using these terms interchangeably.

Without reference to prior deliberation scholarship, this lack of consistency around terminology adds to the ontological confusion around how deliberation should be defined. Without clarifying or discussing how everyday political talk relates to theories of deliberation (which has a longer history of scholarship in the fields of HCI and Political Communication), it is too easy for online political discourse to be dismissed as non-deliberative. Hence, I take this opportunity to emphasize the importance of political talk and its imperative relevance in the examination of how design impacts the quality of political or democratic discourse⁵.

2.1.8 Designing for Online News Consumption and Discourse

In the context of online news consumption, there a small number of design features have been empirically demonstrated to affect the quality of online deliberation. First, asynchrony has been shown to be impact deliberation quality on online platforms. Researchers found that in synchronous discussion spaces, such as group chats where people talk to one another in real-time, it is more difficult to hold rational-critical debate (Esau et al., 2017; Janssen & Kies, 2005; Strandberg, 2015; Strandberg & Berg, 2015; Stromer-Galley & Martinson, 2009). In synchronous discussion settings, people are less likely to make coherent or complete arguments and more likely to engage in small talk, jokes, and personal attacks (Esau et al., 2017; Janssen & Kies, 2005; Strandberg, 2015; Strandberg & Berg, 2015; Stromer-Galley & Martinson, 2009). By contrast, asynchronous discussion settings allow people to take more time to internally reflect and elaborate their arguments, which

⁵ I use these terms interchangeably.

has shown to positively impact deliberation quality (Esau et al., 2017; Janssen & Kies, 2005; Strandberg, 2015; Strandberg & Berg, 2015; Stromer-Galley & Martinson, 2009).

Second, scholars have found that moderation is an important design feature that can promote respectful exchanges between deliberation participants (Camaj & Santana, 2015; Coleman & Gotze, 2001; Davies & Chandler, 2012; A. Edwards, 2002; Esau et al., 2017; Noveck, 2003, 2004; Rowe, 2015; Wright, 2009; Wright & Street, 2007). In fact, Coleman and Gøtze (2001) found that moderation and asynchrony combined promote more civil online conversations around news content. Particularly in the context of social media news articles, Stroud et al. (2015) found that when journalists facilitated the discussion of audience comments appended to Facebook news articles, users engaged in discussion behavior that was more deliberative and rational.

Third, scholars have recognized the availability and presentation of relevant information as an important design factor in facilitating positive dialogue (Gudowsky & Bechtold, 2013; Himelboim et al., 2009; Towne & Herbsleb, 2012). Given that constructive discourse often requires understanding and assessing various perspectives and arguments, availability of information enables discursive exchanges to be more fruitful and relevant to the topic of discussion. Furthermore, similar levels of knowledge around mutually shared information helps participants to develop shared mental models that help discussions to remain coherent and constructive (Gudowsky & Bechtold, 2013; Himelboim et al., 2009; Towne & Herbsleb, 2012).

Finally, researchers have identified that the granularity of discussion topic is an important design consideration in online deliberation. For example, if the discussion topic is more specific and better-defined, corresponding discussions among participants remain more targeted and topically coherent (Noveck, 2009). In their literature review of design principles for online deliberation,

Towne and Herbsleb argue that it is important to organize information and content topically, rather than temporally (Towne & Herbsleb, 2012). These scholars found that temporal organization of content may cause participants to repeat their points many times (Towne & Herbsleb, 2012). By contrast, organizing information and content by topic makes it easier for discussion participants to locate specific topics when a variety of topics are being discussed simultaneously (Gudowsky & Bechtold, 2013; Himelboim et al., 2009; Towne & Herbsleb, 2012).

In sum, prior scholarship in online deliberation have empirically investigated various design choices that shape the manner in which people deliberate upon current events. However, social media design features, such as political hashtags have been yet to be examined with the same depth and breadth.

2.2 Political Hashtags

Hashtags are powerful tools that focus attention, and in essence 'brand' an issue. As a locus of media attention and a shorthand phrase that serves to link numerous texts, hashtags can mobilize people around specific topics and dramatically amplify a message that goes 'viral'. Hence, in the context of online social movements, hashtags can effectively operate as political framing tools (Hadgu et al., 2013; Jackson & Foucault Welles, 2015, 2016), social markers of identity (Jackson et al., 2017; Monk-Payton, 2017; Rodino-Colocino, 2014), and conversation facilitators (Bruns & Burgess, 2011; Kitzie & Ghosh, 2015; Monk-Payton, 2017; Oh et al., 2016; Small, 2011; L. Yang et al., 2012).

Researchers have shown that hashtags can "rapidly elevate discourse beyond specific localities" (Jackson & Foucault Welles, 2015) and raise the overall profile of their intended messages (Booten, 2016; Carney, 2016; Golbeck et al., 2017; Romero et al., 2011; X. Wang et al., 2011). This is best demonstrated in several studies exploring the use of hashtags in social movements (Bruns et al.,

2013; Garza, 2014; Papacharissi & de Fatima Oliveira, 2012; Starbird & Palen, 2012; Yang, 2016).

News media companies also understand such possibilities that hashtags can afford. Hashtags that take off increase audience reach. More importantly, they can elicit strong emotional responses that play on the social and political identity of the reader based on where the person may stand in regards to a particular issue or social movement (Hadgu et al., 2013; Kitzie & Ghosh, 2015; Lin et al., 2013; Romero et al., 2011). Thus, it is not surprising that news media companies regularly use political hashtags in their headlines as a way to increase reach and cater content to specific viewership profiles (based on political orientation, age, gender etc.). However, this could possibly explain why, while reactions around online hashtag movements are often messy, they are known to be strongly divided by political orientation (Carney, 2016; Garber, 2014; Kitzie & Ghosh, 2015; Stewart et al., 2017). That said, to my knowledge, Study 1 of this dissertation work is the first to examine from a linguistic perspective what and how people talk about the events and issues surrounding an online social movement in relation to the political orientation of the news source they consume on social media.

2.2.1 Journalistic Use of Political Hashtags on Social Media

A prominent feature of news articles published on social media is the use of viral political hashtags in the heading and subheadings of stories. When covering news stories on social or political topics, major news outlets often craft headlines with well-known hashtags related to social issues discussed in the article (A. Friedman, 2014; Holcomb et al., 2011; Posetti, 2010). The prevailing assumption is that by including political hashtags in news posts, reporters can significantly expand readership by targeting potential readers who are likely to click-on or follow real-time trending hashtags. In the limited real-estate of social media newsfeeds (where audience attention is

calibrated in micro-seconds) such viral political hashtags in headlines provide an immediate branding effect for news stories. It is also highly likely that readers recognize well-known political hashtags. Incorporating such hashtags in news content thus allows journalists to contextualize an article and speak to an existing discursive network. In addition, linking a specific story to a viral hashtag offers news writers the chance to add their perspective to on-going social issues. While these reasons for weaving political hashtags into news headlines make sense, it is unclear whether or not this practice affects the possibility of engendering constructive debate around political issues in the comments section of news posts.

Specifically, in the news context, political hashtags or those related to social issues signal that a tweet or Facebook post (and by extension the linked article) is related to a particular trending social issue or topic ([Holcomb et al., 2011](#)). In that sense, news organizations increasingly competing for audience attention on social media news feeds, often use trending hashtags to increase readership ([A. Friedman, 2014](#); [Holcomb et al., 2011](#)) or to contextualize their article in short, digestible posts. According to a recent Pew Research study on major news organization practices, “the lack of hashtag usage [would be] surprising as hashtags would enhance the chance that a news organization’s stories will be read by individuals who are not already following their feed” ([Holcomb et al., 2011](#)). Similarly, *Columbia Journalism Review*, asserts that not only is “hashtag activism [a] good way to introduce a story or perspective into the mainstream news cycle”, but also “a way to figure out what the public wants to discuss and learn more about” ([A. Friedman, 2014](#)). This creates an “added bonus that when journalists add more reporting and perspective to the conversation, their work gets duly hashtagged and receives an added boost” ([A. Friedman, 2014](#)). Thus, it is not surprising that major news outlets are crafting headlines and social media news posts to include hashtags, some of which are often political or explicitly related to social issues

(Holcomb et al., 2011). For this tactic to be effective, it is common for news writers to capitalize on political hashtags that are known to have “gone viral” and thus have broad resonance with the current and potential readership (A. Friedman, 2014).

News articles on social media (hereby, referred to as news posts) are key spaces for online civil discourse around social issues (Papacharissi & de Fatima Oliveira, 2012; Rho et al., 2018). Ideally, the inclusion of these political hashtags in articles headlines and news posts would foster heated but constructive debate that generates a diversity of perspectives through discussion and greater interest in social issues. However, discourse surrounding political hashtags are often complicated (Lin et al., 2013; Small, 2011). The virality of a political hashtag may denote the magnitude of people’s interest in the social issues embodied by the hashtag, and perhaps willingness to engage and know more about the issue (A. Friedman, 2014; Holcomb et al., 2011). However, at the same time, as with most political content that goes viral, political hashtags in social media news articles also frame an article with the political baggage (e.g., partisan bias (am, 2017; G. Yang, 2016) and controversy (Papacharissi & de Fatima Oliveira, 2012; Stewart et al., 2017) associated with the hashtag.

Prior research in Human-Computer Interaction (HCI) and Computer-Supported Cooperative Work (CSCW) demonstrates that political hashtags can promote critical conversations through storytelling and perspective-taking – aspects that enhance the online public sphere (Booten, 2016; Michie et al., 2018; Starbird & Palen, 2012). However, such studies focus on content creators who use hashtags strategically, rather than the majority of users who are merely exposed to hashtags in the course of reading the news. Those who use political hashtags do so to denote alignment with an issue (Lin et al., 2013), demonstrate why a particular social cause is personally important to them

(Loza, 2014), and raise support around the issues embodied by the hashtag (Michie et al., 2018). We do not know how such practices are received by people who passively consume hashtagged content.

To address this lack of knowledge, studies 2 and 3 of the Phase 2 online controlled experiment is the first empirical investigation to investigate the impact of political hashtags among not only those who explicitly use hashtags, but across a broader general audience, including those who are merely exposed to, and have not used political hashtags in posting content online.

2.2.2 The Role of Political Hashtags in Democratic Activism and Political Discourse

From the earliest work on political hashtags in the context of the Arab Spring (Bruns et al., 2013; Howard et al., 2011; Starbird & Palen, 2012) to the more recent studies based on the #MeToo (Manikonda et al., 2018; Rodino-Colocino, 2018) and #BlackLivesMatter movements (Jackson & Foucault Welles, 2016; Stewart et al., 2017; G. Yang, 2016), researchers have shown how hashtag activism or “hashtivism” (Blanco Ramírez & Scott Metcalfe, 2017) has succeeded in stimulating critical conversations around contested political and social topics (Blanco Ramírez & Scott Metcalfe, 2017; Clark, 2016; Garza, 2014; Michie et al., 2018; G. Yang, 2016). However, several years after gaining attention in popular media and scholarly research (Small, 2011), it remains unclear how political hashtags affect awareness of, and participation around, social and political issues (Marcotte, 2017; D. Smith, 2017; The Economist, 2018; Tolentino, 2018). Political hashtags are a frame that bring with them a legacy of information about an issue. How do these frames affect how people make sense of and engage with particular news articles tagged in a certain way? Are political hashtags fostering constructive civil discourse and raising positive awareness around key social issues as demonstrated by prior literature (Blanco Ramírez & Scott Metcalfe, 2017; Clark, 2016; H. Li et al., 2018; Lin et al., 2013; Michie et al., 2018; G. Yang, 2016) or is the effect more complicated?

Research exploring political hashtags in the context of democratic discourse has centered around how hashtags promote public awareness around social issues through personalized storytelling (Michie et al., 2018) and expression of solidarity (Clark, 2016, 2016; Loza, 2014). Findings from Computer-Supported Cooperative Work (CSCW) and Human-Computer Interaction (HCI) literature have generally focused on how political or social-issue hashtags act as resources for particular communities to coalesce around shared interests (Albright, 2016; W. L. Bennett, 2012; Bruns & Burgess, 2011; Dahlberg, 2001a; Kitzie & Ghosh, 2015; Small, 2011; Stewart et al., 2017) and assert particular identities (Carney, 2016; Jackson et al., 2017; Loza, 2014; Rodino-Colocino, 2014). In this vein, scholars have explored how hashtags inform debate around political issues (Hadgu et al., 2013) and challenge public perceptions around contested social topics (Bonilla & Rosa, 2015; Chokshi, 2016; Kitzie & Ghosh, 2015). This scholarship generally takes the perspective of the communities who are using hashtags to provide a frame for social issues around which they already affiliate (Albright, 2016; Harlow, 2012; Jackson et al., 2017; Jackson & Foucault Welles, 2015; Kalmoe, 2014; Kitzie & Ghosh, 2015; Papacharissi & de Fatima Oliveira, 2012). Implicit in this work is the assumption that hashtagged media is received in manner aligned with the goals of the community using political hashtags to promote awareness of a particular issue (Jackson et al., 2017; Lin et al., 2013; Loza, 2014; Rodino-Colocino, 2014). As such, political hashtags are seen as agentic frames that inspire new forms of democratic activism and social dialogue in the social media landscape (Blanco Ramírez & Scott Metcalfe, 2017; Clark, 2016; H. Li et al., 2018; Lin et al., 2013; Rodino-Colocino, 2018; G. Yang, 2016).

We see this perspective in the shift in how scholars discuss “slacktivists” (H. Li et al., 2018; Starbird & Palen, 2012). Once pejoratively defined as “those who sit on a comfortable couch in their living room watching TV or interacting with others solely on social media” (Blanco Ramírez & Scott

Metcalf, 2017), the term “slacktivists” is used in recent studies with less derision– for example, as someone whose “vicarious participation has a more meaningful and new connection to the hard work of the social movement than is readily visible” (Starbird & Palen, 2012). This vicarious participation, namely, “reading, retweeting, commenting on others’ tweets or posting their own with the same hashtag” (G. Yang, 2016) is seen as having the power to curate narratives that “provoke empathy, foster polyvocality, and ultimately expand the engaged community” (Michie et al., 2018).

Such an assumed link between social-issue hashtags and political engagement is common in HCI research. Take statements such as: “Twitter is a democratic media, because it allows for [real-time] democratic activism” through hashtags (Small, 2011) and “posting a political hashtag can be seen as a participatory act” (Small, 2011). Starbird et. al, state in no uncertain terms that “slacktivism may indeed have been a productive component of [a] revolution” (Starbird & Palen, 2012). Such forms of democratic participation may exist and be facilitated by political hashtags. However, these findings do not guarantee that political hashtags lead to interest in social issues or increased democratic engagement more broadly. Without an empirical examination of how political hashtags denoting current social issues are actually received by a general population, we cannot fully understand the role of political hashtags in demarking, motivating, and promoting democratic and social engagement.

2.2.3 Overrepresentation of “Hashtag Producers” in the Data

Prior research on political hashtags tends to focus on those who use hashtags in posting and tweeting media content rather than the less vested on-lookers who may only read and consume hashtagged content (Blanco Ramírez & Scott Metcalfe, 2017; Bonilla & Rosa, 2015; Booten, 2016;

Lin et al., 2013; Small, 2011). Given the common process of collecting data through API-filtering of tweets or comments that include specific hashtags, this focus on hashtag creators is an inevitable outcome of prevailing methods. However, these methods overrepresent those who have a specific opinion about the political hashtag or the social issues embodied by it while underrepresenting a large majority of those with a more neutral or moderate stance. Therefore, in statements such as, “I argue that a hashtag’s narrative logic—its ability to produce and connect individual stories—fuels its political growth” (Clark, 2016), the term “political growth” is expressed with a positive connotation. The question remains, is that growth fueled by the already converted? Or do political hashtags provide energy and awareness to new audiences who were not already sympathetic to the issue at hand?

Furthermore, scholarship tends to focus on the emergence of a political hashtag and accompanying social awareness of the issues it represents – often the first weeks to months leading to a hashtag’s viral peak. This can result in a data that represents the initial intense and heated conversations from the point in time when the hashtag was “most-tweeted” or “trending” (Hadgu et al., 2013; Manikonda et al., 2018; Rodino-Colocino, 2018; G. Yang, 2016). Such scholarship cannot avoid oversampling people who are emotionally-vested (via tweets and posts) and “tuned-in” to an issue. We know little about what happens over time and whether political hashtags that are no longer trending play a different role in democratic participation.

Both qualitative and quantitative work based on such samples draw conclusions about the productive power of hashtags for social movements (Booten, 2016; Loza, 2014; Starbird & Palen, 2012). Such work finds, for example, that “hashtag activism is effective... in ensuring social movements remain within the public discourse through the use of viral Twitter hashtags” (Simpson,

2018). Whether or not such findings are the effect the timing or methods for data collection has yet to be examined.

2.2.4 Issue of Quantification in Assessing Discourse Quality Around Political

Hashtags

Computational research on social media hashtags often use the frequency of tweets as proxies for understanding social engagement around political hashtags (Booten, 2016; Hadgu et al., 2013; Lin et al., 2013; Romero et al., 2011). In an effort to understand what makes a hashtag “successful” Lin et al. quantify “conversational vibrancy” (Lin et al., 2013) surrounding hashtags through multiple measures of volume. The authors define the measure of topicality based on “the number of times a hashtag is retweeted” (Lin et al., 2013), diversity as “the number of unique tweets with the hashtag” (Lin et al., 2013), and interactivity based on “the number of replies co-occurring with the hashtag” (Lin et al., 2013).

Similarly, in an attempt to understand "what makes a hashtag “successful” or “[spread] like a best-selling book” Romero et. al quantify social engagement through “stickiness” or the probability of a tweet with a hashtag spreading from one person to another. Their findings demonstrate that political hashtags are more persistent compared to non-political ones (Romero et al., 2011). Studies examining the relationship between hashtags and democratic participation cite these computational findings as evidence that political hashtags get stronger and more powerful from repeated exposures (Booten, 2016) citing (Romero et al., 2011). However, we do not know whether escalation in volume of hashtagged content is snowballing within specific groups (the volleying of content within an information bubble) or reflecting positive impact on a more general audience.

Furthermore, studies on political hashtags that involve large longitudinal network datasets can run the risk of collapsing the data into a single snapshot (2016) when employing quantitative approaches that solely rely on volume-based metric for engagement. Aggregating and quantifying most frequent tweets and posts from a single longitudinal data dump can leave out key temporal dynamics and contexts around how social engagement surrounding political hashtags evolve over time (Jackson & Foucault Welles, 2016). While findings from such computational approaches provide valuable high-level insights about network patterns (Booten, 2016; Huang et al., 2010; Lehmann et al., 2012; Romero et al., 2011; L. Yang et al., 2012), these methods cannot address whether quantified definitions of a political hashtag's success hold true over time or across a broader audience.

2.2.5 Background on the #MeToo and #BlackLivesMatter Movements

The power of hashtags is well demonstrated through the intense momentum and political discourse surrounding the #Blacklivesmatter and the #MeToo movements. In this section, I provide brief background information on the development of these two political hashtags.

#MeToo

On October 15, 2017, American actress Alyssa Milano took to Twitter to encourage women sexually harassed or assaulted in the past to use "MeToo" (Bret Stephens, 2017; Park, 2017; Santiago & Criss, 2017) – a phrase first used by Tarana Burke in this context in 2006 (Garcia, 2017) – to demonstrate the pervasiveness of the problem. Within 24 hours, the hashtag was tweeted more than 500,000 times and used by more than 4.7 million Facebook users in approximately 12 million posts (Santiago & Criss, 2017). Since then, the hashtag spread across 85 countries in dozens of other languages with local variations of the phrase (Park, 2017). Millions of SNS users used "#MeToo" to share

experiences of sexual assault (J. Bennett, 2018b; Hartocollis, 2018), prompting a national discussion of sexual misconduct at the workplace in many countries (A. MacKinnon, 2018; Chira, 2018; Chira & Einhorn, 2017; Park, 2017; Phelan, 2018).

Events surrounding the #MeToo movement garnered mixed reactions from the public with diverse media portrayals from various news sources across the political spectrum. While many praised the movement for serving as a platform for marginalized voices (A. MacKinnon, 2018; Chira, 2018; Hartocollis, 2018), others criticized the movement as a reflexive social media witch-hunt (Bret Stephens, 2017; Daphne Merkin, 2018; Landler, 2018; Safronova, 2018) with an unclear agenda around who is and is not (e.g., sex workers and males) (Chira & Einhorn, 2017; Cooney, 2018) allowed to participate or use the hashtag. Garnering significant amounts of both support (J. Bennett, 2018a; Codrea-Rado, 2018; Sang-Hun, 2018; Stevens, 2018) and backlash (Bonos, 2017; Kahn, 2018; Ryall, 2018; Tarbox, 2018; Tolentino, 2018; Wendy Kaminer, 2017), the online social movement generated both massive on- and offline political discourse on SNS (Appiah, 2018; Codrea-Rado, 2017; Hanrahan et al., 2017; Hartocollis, 2018).

#BlackLivesMatter

According to Twitter, #BlackLivesMatter was the third most tweeted social-issue hashtag in the 10-year history of the platform (Monica Anderson and Paul Hitlin, 2016). The #BlackLivesMatter movement was first sparked in 2013 after the acquittal of George Zimmerman who fatally shot Trayvon Martin who was a 17 year-old Black teenager in February 2012. The movement further gained national attention after the deaths of Michael Brown who was fatally shot by the police, and Eric Garner who was killed by a police officer's chokehold. Further outraged by these incidents, #BlackLivesMatter protests initially broke out across the streets in Ferguson, Missouri and in the

city of New York in the United States and later spread across globally in more than seven countries in 2016(McKenzie, 2016). From its first appearance in mid-2013 to March 2016, #BlackLivesMatter was tweeted nearly 12 million times, frequently used in support of the broader social movement (Park, 2017).

There is no doubt that political hashtags can be strategically leveraged for promoting social awareness as proven by #MeToo and #BlackLivesMatter. Both the #BlackLivesMatter and the #MeToo movements effectively demonstrated the ability of political hashtags to rapidly scale across online platforms, enabling people to aggregate discussion (G. Yang, 2016) and heighten visibility on police brutality and sexual harassment issues (Rodino-Colocino, 2018; Small, 2011). However, although these online hashtag movements were first initiated with the intent to share and bring attention to the pervasiveness of severe social problems of critical importance, reactions toward these political hashtags became further polarized over time (Horowitz & Livingston, 2016; The Economist, 2018; Tovia Smith, 2018a, 2018b). For example, one year after the #MeToo movement, reports show that people's opinions shifted against #MeToo survivors (Tovia Smith, 2018b, 2018a). According to polls, people are more and more divided on issues surrounding sexual harassment – with the divide running primarily along partisan groups (The Economist, 2018). In a similar vein, several years after the Black Lives Matter came to national prominence the majority of Americans now have an unfavorable view of the movement (Swanson, 2017), again cutting sharply on racial and partisan lines (Horowitz & Livingston, 2016).

CHAPTER 3

Phase 1: How Linguistic Behavior Contributes to the Divide in Perspectives Around Political Hashtags

Linguistic style and affect shape how users perceive and assess political content on social media. Using linguistic methods to compare political discourse on far-left, mainstream and alt-right news articles covering the #MeToo movement, we reveal rhetorical similarities and differences in commenting behavior across the political spectrum. We employed natural language processing techniques and qualitative methods on a corpus of approximately 30,000 Facebook comments from three politically distinct news publishers. Our findings show that commenting behavior reflects how social movements are framed and understood within a particular political orientation. Surprisingly, these data reveal that the structural patterns of discourse among commenters from the two alternative news sites are similar in terms of their relationship to those from the mainstream – exhibiting polarization, generalization, and othering of perspectives in political conversation. These data have implications for understanding the possibility for civil discourse in online venues and the role of commenting behavior in polarizing media sources in undermining such discourse.

3.1 Research Questions

Based on the literature review, we expect the following linguistic attributes and patterns on social media to affect perception of content, especially for “hot-button” issues embodied by the #MeToo movement: 1) structural patterns of linguistic content, 2) semantic contexts, and 3) rhetorical patterns based on important keywords associated with discussion themes. Hence, to examine how

these linguistic attributes and patterns might differ among people who produce and consume different political information, we ask the following research questions. All research questions are examined in the context of the #MeToo movement.

- Research Question 1: What linguistic and affective attributes characterize commenting behavior across three politically distinct news sources covering #MeToo?
- Research Question 2: What are the differences in the semantic contexts in which #MeToo is framed in the commenting discussion across three politically distinct news sources?
- Research Question 3: What kind of rhetorical patterns are observed from the discussion of the most important keywords across commenters from three politically distinct news sources?

Research Question 1: What linguistic and affective attributes characterize commenting behavior across three politically distinct news sources covering #MeToo?

Given that the linguistic style of online comments is known to affect how users perceive content, this research question allows us to uncover distinct structural patterns in linguistic behavior across the three publishing sites. Such patterns may underlie factors inducing further polarization of perspectives among commenters. As discussed above, negative affective language has been shown to have considerably stronger effects on people's attitudes than positive information, especially when the content is political (B. Miller, 2010; Redlawsk et al., 2010). Hence, the use of negative affective language, (e.g., anger) can have strong persuasive influences (Utych, 2017, 2018) in formation of political opinion. Furthermore, the use of socially offensive language such as swear words or sexually explicit expressions can elicit affective reactions which can lead to more

entrenched opinions. Therefore, this research question will identify whether differences exist among commenting behaviors in the three politically distinct sites, whether there are strong trends around affective language patterns, and how these differences might be associated with various viewpoints.

Research Question 2: What are the differences in the semantic contexts in which #MeToo is framed in the commenting discussion across the three politically distinct news sources?

Understanding how a word is characterized by its nearby words can reveal key linguistic contexts in which it is discussed (Firth, 1957). People of different political orientations may in fact discuss the same issue with very different contexts. Context, in turn, can influence how arguments are understood. For example, the semantic context through which a topic is conversed has been shown to predict the norms of online group discussion among different weight loss communities on Reddit (Chancellor et al., 2018). Hence, with this research question we investigate the latent contextual cues of words associated with the token, “MeToo” across the three publishers by examining the semantic closeness of nearby words.

Research Question 3: What kind of rhetorical patterns are observed from the discussion of the most important keywords across commenters from three politically distinct news sources?

The types of rhetorical engagement (McGee, 1980) that characterize political conversations can potentially reveal how commenters understand and make sense of an issue. It can also inform us of the persuasive tactics used on different sides. This research question is comprised of two parts. First, we identify the tokens that consistently appear in the commenting discussion among the three political news sites. Then we use the token results as anchors from which to explore rhetorical

patterns surrounding these important keywords to help understand how the three political commenter groups frame issues and construct arguments.

3.2 Methods

3.2.1 Data Source

After a careful review of approximately 100 news sources from mediabiasfactcheck.com as well as their social media presence on Facebook, we selected three contrasting sites for our data sources that represent three distinct political viewpoints: Democracy Now (DemNow) which represents a far-left viewpoint, the New York Times (NYT) which represents a mainstream viewpoint, and Breitbart which represents a right-wing viewpoint (referred to in popular culture as the alt-right) ⁶. All three news publishers consistently posted their articles on Facebook. As criteria for our selection, we used the number of Facebook page followers⁷, likes⁸, and the overall number of #MeToo articles as well as the number of Facebook comments on these articles.

3.2.2 Data Collection

To gather data for this study, we first selected all article posts that included the phrase “#MeToo” either in the article headline or in the text portion of the Facebook post during the period between October 2017 (when Alyssa Milano first shared her tweet using #MeToo) and March 2018 from all three publishers’ Facebook pages. We used the Facebook API to collect all user comments and replies from the selected article posts⁹. Unfortunately, due to Facebook’s API restriction, we were

⁶ DemNow and Breitbart are a close mirroring of each other in terms of political extremity (Media Bias Fact Check, 2018a, 2018b). We take into consideration that NYT is considered left-center (Media Bias Fact Check, 2018c).

⁷ Number of Facebook page followers at the time of data collection: DemNow=1.2M, NYT=15.1M, Breitbart=3.8M

⁸ Number of Facebook page likes at the time of data collection: DemNow=1.2M, NYT=15.5M, Breitbart=3.9M

⁹ Comments were not curated by the publishers and were publicly available on Facebook through the publishers’ Facebook page.

unable to collect anonymized commenter ids¹⁰, which would have provided us valuable information on the unique number of commenters.

During this six-month period, there were a total of 21 published article posts from DemNow, 10 from Breitbart, and 62 from NYT Facebook pages. Such difference in the number of articles is a potential limitation, which we discuss further in later sections. For our analyses, we used both original comments and replies to these comments from all the #MeToo articles posted on the three publishers' Facebook pages, giving us a total of 17,491 user comments from NYT, 10,821 user comments from Breitbart, and 1,409 user comments from DemNow posts as shown in Table 3.1. While the number of average comments per article was highest in Breitbart news posts, the average comment length in character count was the lowest compared to those of DemNow and NYT.

¹⁰ Only the owners of the publisher's Facebook pages have API access to anonymized versions of the commenters' user ids.

Table 3.1. Descriptive Statistics: Number of Comments (Per Article) and Comment Length From #Metoo Coverage Posts Shared by Democracy Now, New York Times, and Breitbart Facebook Pages.

		Democracy Now (21 articles)	NYT (62 articles)	Breitbart (10 articles)
Number of original Facebook comments per article (total comments in parentheses)	mean	35 (67)	158 (282)	927 (1,082)
	median	30 (49)	56 (128)	553 (669)
	min	8 (16)	4 (4)	297 (426)
	max	112 (220)	2,003 (2,868)	3,306 (3,455)
	total	743 (1,409)	9,811 (17,491)	9,267 (10,821)
Number of Facebook replies per article	mean	32	124	155
	median	20	74	140
	min	5	0	38
	max	108	865	326
	total	666	7,680	1,554
Length of Facebook comments (in number of characters)	1st quartile	35	35	25
	mean	146	139	85
	median	80	80	52
	3rd quartile	160	170	100
	max	4,972	4,925	7,904

3.2.3 Analysis

Research Question 1: Linguistic Style and Affect

In order to investigate the linguistic and affective traits characterizing commenting behavior, we used the 2015 Linguistic Inquiry and Word Count (LIWC). LIWC is a well-validated psycholinguistic lexicon (Brubaker et al., 2012; Cheng et al., 2017; Danescu-Niculescu-Mizil et al., 2011; De Choudhury et al., 2013) widely used by HCI and CSCW scholars to understand online discourse (Brubaker et al., 2012; Cheng et al., 2017; Danescu-Niculescu-Mizil et al., 2011; De Choudhury et al., 2013). We focused on six LIWC categories to measure affect (positive emotion, negative emotion, and anger) and linguistic style (swear words, informal language, and sexual words) based on prior findings on linguistic behavior in political discourse as discussed in the literature review. We added the sexual word category given the topical nature of the data as well as the fact that a large proportion of the swear words in the data were related to sex.

Research Question 2: Semantic Proximity to “MeToo”

Unlike traditional topic modeling, word embeddings, implemented through neural network architecture such as word2vec (Mikolov, Chen, et al., 2013; Mikolov, Sutskever, et al., 2013) and GloVe (Pennington et al., 2014) reveal latent contextual cues of tokens by capturing the co-occurrence of terms with an associated word. Hence, in order to answer RQ2, we used word2vec to quantify the semantic proximity using cosine similarity distance between the token “MeToo” and nearby words that co-occur with it. Using this unsupervised learning algorithm, we built embedding models for each publisher with a minimum count of 50 for all words based on a conservative

window of 12 words¹¹. Our total vocabulary size was 6,302, 23,655, and 12,507 unique tokens for DemNow, NYT, and Breitbart, respectively. Before vectorizing our tokens, we lowercased all text and removed stop words (e.g., functional words, such as “the”, “is”, “at”, etc.). We also customized our stop words to ensure that words prefaced with the hashtag symbol, ‘#’ were not removed given the nature of our data.

Research Question 3: Rhetorical Patterns in Discussion of Important Keywords

First, to investigate the important keywords frequently discussed among commenters across the three different news sites, we used term frequency-inverse document frequency (TF-IDF) analysis. TF-IDF is a ranking function widely used in information retrieval and text-mining to investigate how important a word is within a corpus of text data (Sparck Jones, 1972; Wu et al., 2008). The importance of a word, or its TF-IDF weight increases in proportion to the number of times the word appears in a document (e.g. one comment from NYT), but is offset by the frequency of the word in the entire corpus (e.g. all comments from NYT articles). To examine the important keywords discussed in the alternative news sites (Breitbart and Democracy Now) in relation to those that appear in the more mainstream news source (New York Times), we conducted two TF-IDF analyses – first on the combined corpus of Breitbart and NYT comments and second, on the corpus of DemNow and NYT comments.

Next, we used discourse analysis (Gee, 2014) to analyze all comments that included the top tokens with the highest TF-IDF weights to explore the rhetorical patterns used by commenters in their discussion of important keywords. Discourse analysis is a form of qualitative analysis that involves identifying patterns, relationships, and values in text data (Gee, 2014), and has been used in several

¹¹ As most comments contained 12-14 words on average (\bar{x} =12 for Breitbart, \bar{x} =13 for DemNow, and \bar{x} =14 for NYT)

HCI and CSCW works examining online comments (Rho et al., 2017; Y.-C. Wang et al., 2008). First, we thematically grouped all 1302 comments with the top TF-IDF tokens (“sex”, “color”, “experience” “flirting”) and used axial coding (Strauss & Corbin, 1998) to delve into each comment in greater depth. We performed discourse analysis on the comments to identify consistent patterns of rhetoric across commenters. All three authors iteratively engaged in thorough discussion and interpretation of comments throughout the analysis.

3.3 Results

Our findings show strong differences in linguistic style and affect across the comments from the three politically distinct news publishers. Commenters from both the far-left and alt-right sites use a significantly greater proportion of negative affective words and informal speech compared to those who engage in discussion on mainstream news media (RQ1). Furthermore, the top tokens with the highest semantic proximity to “MeToo” are thematically different across comments from DemNow, NYT, and Breitbart, suggesting that the framing of discussion around the MeToo hashtag is different based on the political orientation of the news source (RQ2). Partisan identity is also reflected in the important keywords commenters discuss based on our TF-IDF results (RQ3). By taking a closer examination of how the top tokens with the highest TF-IDF weights are discussed among commenters, we examine distinct patterns of rhetoric and discourse across the three groups in our data. We discuss our results in greater detail below.

3.3.1 Linguistic Style and Affect

Research Question 1: What linguistic and affective attributes characterize commenting behavior across the three politically distinct news sources covering #MeToo?

Table 3.2 below summarizes the six linguistic measures of affect and style on user comments on DemNow, NYT and Breitbart #MeToo article posts shared by the three publishers' Facebook pages. In the summary table, we show the mean proportion of affective words considered swear, informal, or sexual language. Given that the LIWC values for each comment across the three news sources were not normally distributed, we used the Kruskal-Wallis test, a non-parametric alternative of analysis of variance (ANOVA), to examine whether the differences in the proportion of LIWC words were statistically significant across the three groups. The test indicated that the proportion of words corresponding to each of the six LIWC categories was indeed significantly different among the three corpora of comments from each publisher.

Table 3.2. Proportion of LIWC Words Across Breitbart, Democracy Now, and New York Times Comments.

Note: The Kruskal-Wallis test statistic (χ^2) and corresponding p-values indicate that the proportion of lexical content is significantly different across the three groups (***=p<.001).

LIWC Category	Democracy Now	New York Times	Breitbart	χ^2	p
Affect					
Positive Emotion	0.0495	0.0512	0.0655	99.185	***
Negative Emotion	0.0461	0.0409	0.0626	15.963	***
Anger	0.0244	0.0159	0.0270	158.63	***
Linguistic Style					
Swear	0.0153	0.0052	0.0255	590.97	***
Informal	0.0325	0.0286	0.0573	56.644	***
Sexual	0.0109	0.0048	0.0147	61.792	***

To understand the differences in more depth, we conducted Wilcoxon signed rank pairwise tests for the three pairs of groups across the six LIWC categories. As shown in Table 3.3, pairwise tests indicated that the proportion of lexical content based on affect and linguistic style were significantly different (p-value <0.001, adjusted for a Bonferroni correction) for certain pairs. We describe the differences in more detail in the following sections.

Table 3.3. Wilcoxon Rank Sum Test With Bonferroni Adjusted P-Values (<0.05 =**, <0.001 =***).

LIWC Category	Democracy Now & New York Times	Democracy Now & Breitbart	New York Times & Breitbart
Affect			
Positive Emotion	1.0000	0.0003***	2.0e-16***
Negative Emotion	0.5684	0.0076**	0.0016**
Anger	6.4e-06***	2e-16***	2.0e-16***
Linguistic Style			
Swear	2-16***	0.32	2.0e-16***
Informal	2.5e-05***	1.0000	2.8e-11***
Sexual	0.0016**	2.3e-10***	5.1e-10***

Linguistic Affect: There is a significantly higher proportion of both positive and negative emotional words across Breitbart comments compared to DemNow and NYT comments. However, there was no significant difference in the proportion of affective words between DemNow and NYT comments. Breitbart comments also have the highest, and NYT comments the lowest proportion of anger-related words among the three groups.

Linguistic Style: Comments from the three publishers also differed in terms of linguistic style. There was a significantly higher proportion of sexual words across Breitbart comments compared to those of DemNow and NYT comments. Breitbart comments contained nearly three times the proportion of sexual words compared to NYT comments. DemNow comments contained the second highest proportion of sexual words, with nearly twice the proportion found in NYT comments. Furthermore, Facebook comments from Breitbart posts contained a significantly greater proportion of swear words and informal speech compared to those written on NYT article posts. In fact, the average proportion of swear words used in Breitbart comments is five times higher, and the use of informal speech is nearly twice as greater than those used in NYT comments. By contrast, the difference in the proportion of swear words and informal speech between Breitbart and DemNow was not significant. Overall, NYT comments contained the least proportion of swear, informal, and sexual words among the three groups of comments.

Thus, in examining the linguistic attributes of comments in RQ1, we discovered that the comments from far-left and alt-right sites exhibit greater use of informal language, profanity, and words related to anger & sex, compared to those from the mainstream publisher. What is interesting is that there are no differences in the proportions of swear words and informal speech between the far-left and alt-right sites. However, comments from the Breitbart site (the alt-right) are the angriest, most emotional (positive and negative) and sexual compared to the comments from the other two publishers.

3.3.2 Semantic Proximity to “MeToo”

Research Question 2: What are the differences in the semantic contexts in which #MeToo is framed in the commenting discussion across the three politically distinct news sources?

In this section, we present results from the word embedding analyses using word2vec to analyze semantic context. Our findings show that the top words most semantically associated with “MeToo” is noticeably different across the three news sources. In Table 3.4, we show the 25 tokens semantically closest to the word “MeToo” based on cosine similarity values from the three embedding models.

Each embedding model was separately built from the corpora of DemNow, NYT and Breitbart comments. The cosine similarity values listed in descending order in Table 3.4 indicate the similarity of angles between each vectorized token and the word “MeToo”, ranging from 1 (identical) to -1 (absolute opposites).

The embedding results show thematic differences in the linguistic context of how #MeToo is described and understood among commenters from the three publishers. Among NYT comments, “MeToo” is semantically closest with tokens such as “hashtag”, “group”, and “campaign” – words that are somewhat intuitively characteristic of #MeToo as an online social movement or a hashtag campaign. Tokens such as “courage”, “respect”, and “brave” are also semantically associated with the word “MeToo”, suggestive of the emotive context in which NYT commenters describe content related to the hashtag. Action words such as “giving”, “take”, “read”, “share”, “help”, and “call” are also often used in relation to “MeToo” in the corpus of NYT comments.

By contrast, the embedding tokens from Breitbart and DemNow comments that are semantically closest to “MeToo” are somewhat more thematically dispersed. However, it is noticeable that some of these top tokens, such as “whore”, “stupid”, and “hypocrite” from Breitbart and “assholes” from DemNow have clear negative connotations. Top DemNow tokens, such as “fame”, “money”, “famous” and “rich” and perhaps “hollywood” are also linguistically related to socioeconomic status.

Table 3.4. Top 25 Word Embedding Tokens Most Similar to the Word “Metoo” Based on Cosine Similarity Values. Note: Three embedding models were built separately for Democracy Now, New York Times & Breitbart Facebook News Comments.

Democracy Now		New York Times		Breitbart	
word	cosine	word	cosine	word	cosine
metoo	1.000	metoo	1.000	metoo	1.000
fame	0.887	hashtag	0.906	whore	0.942
movements	0.874	group	0.838	always	0.940
society	0.845	campaign	0.819	joke	0.937
money	0.834	silence	0.807	paid	0.934
ignored	0.798	courage	0.807	tell	0.933
predators	0.795	ones	0.798	stupid	0.925
famous	0.792	giving	0.795	must	0.925
hollywood	0.768	names	0.780	list	0.923
rich	0.767	takes	0.775	expect	0.922
standing	0.766	read	0.750	morals	0.917
thank	0.766	respect	0.743	day	0.917
times	0.758	past	0.739	boy	0.913
agenda	0.748	breakers	0.734	back	0.911
choice	0.742	share	0.724	movement	0.907
cultural	0.737	instead	0.717	makes	0.904
seriously	0.736	stories	0.712	ok	0.904
least	0.736	sharing	0.712	guys	0.903
profile	0.733	choice	0.699	office	0.901
assholes	0.732	name	0.696	actually	0.901
act	0.732	magazine	0.693	hypocrite	0.899
sorry	0.730	white	0.692	best	0.898
prostitution	0.728	help	0.685	anything	0.896
conversation	0.724	call	0.676	figure	0.896
knowing	0.718	brave	0.657	people	0.889

To more deeply examine the differences in the semantic context of these tokens in relation to the keyword, “MeToo”, we present a discussion of selected quotes from the comments. We present examples focusing on the top tokens that reflect clear thematic patterns and nuances around how #MeToo is discussed among commenters based on its larger semantic framing across the three news sites.

“Hashtag” and “Group” – words semantically closest to “MeToo” across mainstream news comments. Among NYT comments, the token “MeToo” is often referred to as a hashtag. As it is the case with online hashtag movements, the brevity of a hashtag phrase that goes viral is indeed effective, but can also be confusing in meaning, due to its pervasive use across social media users in multiple contexts that can change and evolve over time. Compared to Breitbart and DemNow commenters there is a greater number of NYT commenters who hint confusion, but also greater willingness to understand and engage in discussion as to what the hashtag represents. In one of the NYT article posts, one commenter, Jim, expressed confusion towards what the “MeToo” hashtag stood for:

“Not trying to start fights, but metoo is hard to understand...To my understanding, sexual harassment can be something as simple as a catcall on the street. So I guess my question is are all instances of misconduct, both verbal and physical a part of metoo, or is it women who have been assaulted and abused?”

In response to Jim, another commenter replied:

“Jim, the #metoo hashtag is intended to capture all of those instances. However, I think you will find that stories like the ones these women are telling are not as

uncommon as most people would like to believe... When I finally started talking to other women about my rape, I was shocked and dismayed to find how many of them (my friends, women I had known for years) had very similar stories to tell. #MeToo

Here, the commenter discusses “MeToo” in the context of a hashtag by explaining the purpose of its use and the spectrum of what the hashtag encompasses (“to capture all of those instances” of what #MeToo stands for). The commenter also refers to the functional aspects of the hashtag by hinting its affordance to highlight the pervasiveness of an issue (“stories...these women are telling are not as uncommon”). Furthermore, the commenter also uses the MeToo hashtag as it has been used by others by signing off her comment with “#MeToo” after mentioning her own personal experience (“my rape”).

The token “group” is the second closest word semantically associated with “MeToo” in the context of this NYT use-case as demonstrated in the following example. Throughout our analysis of NYT comments, there were numerous commenters, like the example from above, who used the comment threads below the article to briefly mention or share personal experiences of sexual harassment and assault with others. However, unlike personal Facebook posts where one can adjust the privacy settings to customize audience visibility, article posts shared by the publishers are all public, including the comment threads where any Facebook user can see or reply to what others wrote. Hence, in order to steer personal experiences into a less visible and more private space, some commenters invite others into “MeToo” groups. Thus, the context of the token "group" here refers to persons taking action related to the " MeToo " topic:

"#MeToo I have too many stories to write. I started a #MeToo group for all survivors."

“Joke”, “Whore”, and “Always” – words semantically closest to “MeToo” across alt-right news comments. The context in which “MeToo” is discussed among Breitbart commenters strongly contrasts with the tone in which NYT commenters talk about the survivors or those associated with the movement. For example, the token “MeToo” is often referred to as a “joke”, the second highest embedding token from the model, as this quote makes clear:

"MeToo is a huge joke, so is Holly weird and mainstream media – no use for any of them."

In response to a Breitbart article, in which the sub-headline read, “The #MeToo movement sought to remove those in Hollywood who have been accused or found guilty of rape and sexual assault. Instead, they just gave one of them an Oscar”, one commenter responded:

"Always a pleasure to hear a lecture from someone, that literally bought and paid his way out of a rape charge, lecture others. #MeToo what a joke."

Most Breitbart coverage of the #MeToo movement shared through its Facebook page contained headlines and post texts with strong insinuations that seem to undermine the general purpose of the #MeToo movement. Unsurprisingly, this caters and feeds well to its Facebook audience who also commonly refer to #MeToo participants as “whores”:

"METOO has no meaning. Finding out they all are a bunch of hussie whores looking for cash. They all need to get out on the street corner and get their cash. Maybe 10% have a legitimate complaint."

Furthermore, Breitbart commenters often use linguistic absolutes, such as “always” in their comments:

“Because a lot of #metoo is about fake idiot liars looking for profit and control, hence it’s always the “powerful” males they name... Naming little schleppy nobody will get them nothing. But when it’s profitable to suck up to them or on them they are still willing to do that too. Whatever happened...she was a profit seeking slutty little whore. Can’t believe he fell for it.”

Here, the commenter generalizes how it is “always” the powerful that #MeToo participants accuse rather than those who are less well-known. This shifts the context of the #MeToo movement from a campaign of sharing experiences to one purposed to name accusers.

“Fame”, “Money”, “Rich” – words semantically closest to “MeToo” across far-left news comments. On DemNow comment threads, “MeToo” is often semantically associated with words like “fame”, “money”, and “rich” where commenters often discuss the #MeToo movement in relation to race and socioeconomic status:

“I was more than insulted listening online this morning to Oprah compare the violent and brutal pain of rapes and even murders that Black women endured by racist white men during Jim Crow to that of rich white women in Hollywood and business. The brutal gang rape of Recy Taylor by six white men in Alabama is not comparable to the alleged sexual assaults that rich white women (often times purposely endured for fame and money) are fighting in their new #TimesUp and #MeToo movements. To compare the savagery and racism that fueled the many rapes and abuse that Black women had to endure by the hands of racist white men to that of rich white women’s new fight for dominance and power is a shameful erasure, even for Oprah. These rich women weren’t raped, beaten, bloodied and left to die because of hate and white power, these

rich women chose silence out of fear of their careers and wealth, Black women who chose silence during Jim Crow etc., chose silence out of fear for their very lives and that of their families.”

Here, the commenter takes a strong partial stance by using language that villainizes the experiences of one group (rich white women) over those of others (Black women). The commenter makes generalized assumptions on race and socioeconomic identities, claiming that “alleged sexual assaults that rich white women” experience are often “purposely endured for fame and money”. This kind of discourse with strong partial references to race and socioeconomic identities is heavily echoed throughout DemNow comments as it will be further shown in the findings.

In summary, the top tokens that are semantically associated with “MeToo” show noticeable thematic differences. This suggests that the framing of discussion around #MeToo is different as shown through the different words that are semantically closest to the hashtag. That said, commenters can understandably react to #MeToo or related-topics in different ways depending on how the hashtag is presented across the three publishers. In other words, potential different framing biases (Druckman, 2001a, 2001b; I. P. Levin et al., 1998) around the MeToo hashtag can elicit different cognitive prejudices related to the movement, manifest in the discussion among commenters of these politically distinct news sites.

3.3.3 Rhetorical Patterns

Research Question 3: What kind of rhetorical patterns are observed from the discussion of the most important keywords across commenters from three politically distinct news sources?

To analyze rhetorical patterns based on important keywords, we first needed to identify the key tokens discussed among commenters from DemNow, NYT, and Breitbart Facebook article posts on #MeToo. We conducted two TF-IDF analyses – first on the combined corpus of Breitbart and NYT comments and second, on the corpus of DemNow and NYT comments. Our TF-IDF results show that commenters from DemNow and Breitbart tend to focus on sexual subject matters while NYT commenters are more topically focused on the nuance of events related to the online movement as well as experiences shared through the #MeToo movement.

Important keywords. In Figures 3.1 and 3.2 we show the top 40 linguistic tokens in descending order of their TF-IDF weights from Breitbart and NYT, and from DemNow and NYT analyses, respectively. We first describe the keyword results before presenting findings from the discourse analysis.

Comments from Breitbart and Democracy Now are topically focused on sex. Of the top 40 words with the highest TF-IDF weights for Breitbart in Figure 3.1, nearly three-fourths of the tokens are either swear- or sexual words, consistent with the results from the LIWC analysis. Similar to the list of Breitbart tokens, almost half of the top 40 DemNow tokens shown in Figure 3.2 are also either expletives or words related to sexual profanity. In fact, the 12 overlapping tokens between Breitbart and DemNow TF-IDF are: “sex”, “whores”, “ass”, “pussy”, “bullshit”, “fuck”, “fucking”, “asshole”, “assholes”, “dick”, “bitch, and “penis”. Tokens from Breitbart comments contain degenerative expressions such as “libtard”, “douche”, “prick”, “jackass” as well as those more specific to women (“whores”, “slut”, “bitches”, “prostitute”, “skank”). Furthermore, Breitbart and DemNow tokens suggest that comments from both the alt-right and far-left coverage on #MeToo tend to be topically focused on aspects related to sexual profanity based on the frequent references to both male and female body parts (“ass”, “asshole”, “dick”, “penis”, “balls”, “vaginas”).

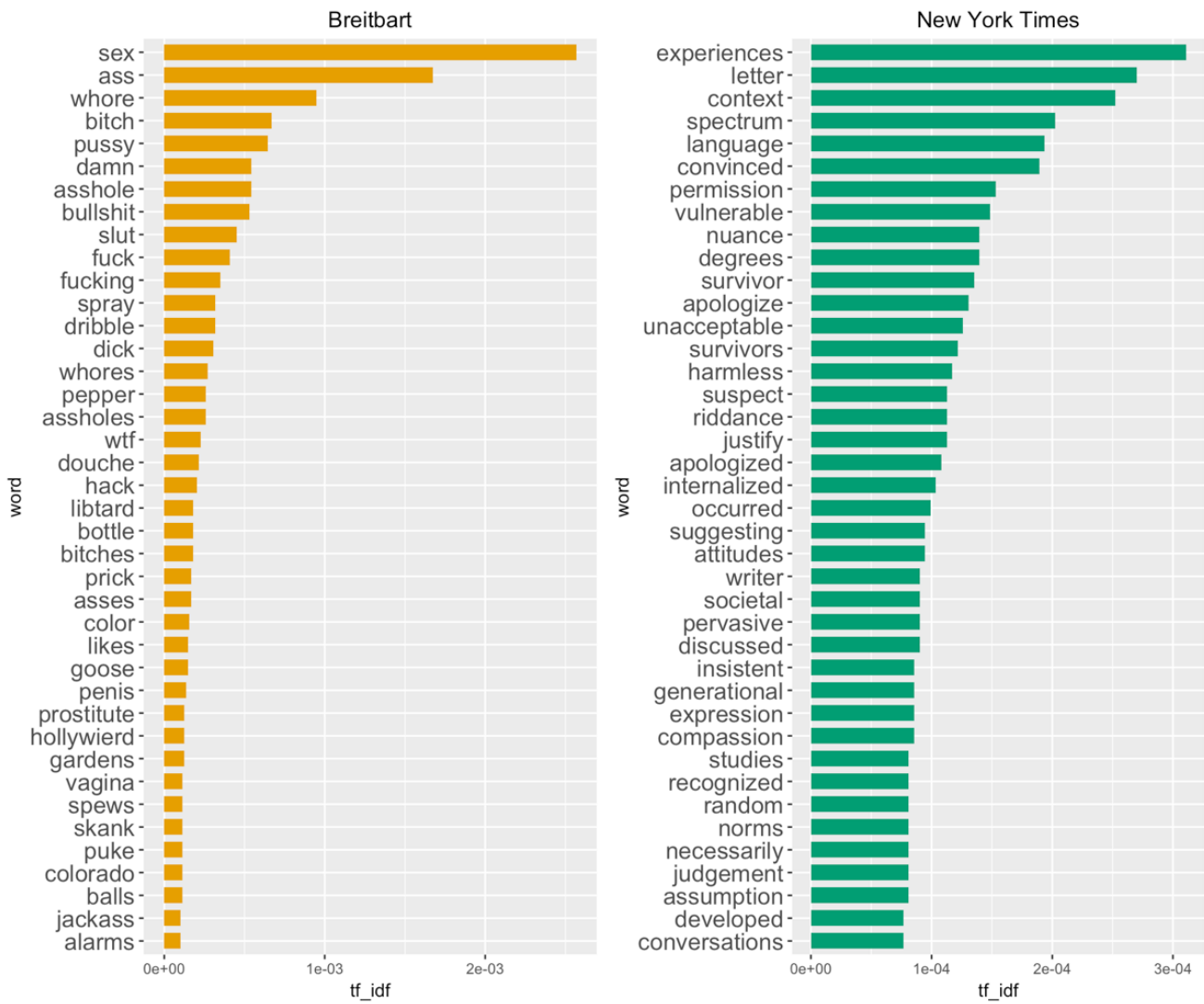


Figure 3.1. TF-IDF Analysis of Alt-Right and Mainstream News Comments on #MeToo Articles on Facebook.

Note: Displayed are the top 40 tokens in the descending order of their TF-IDF weights based on a TF-IDF analysis of Breitbart & New York Times comments on #MeToo articles.

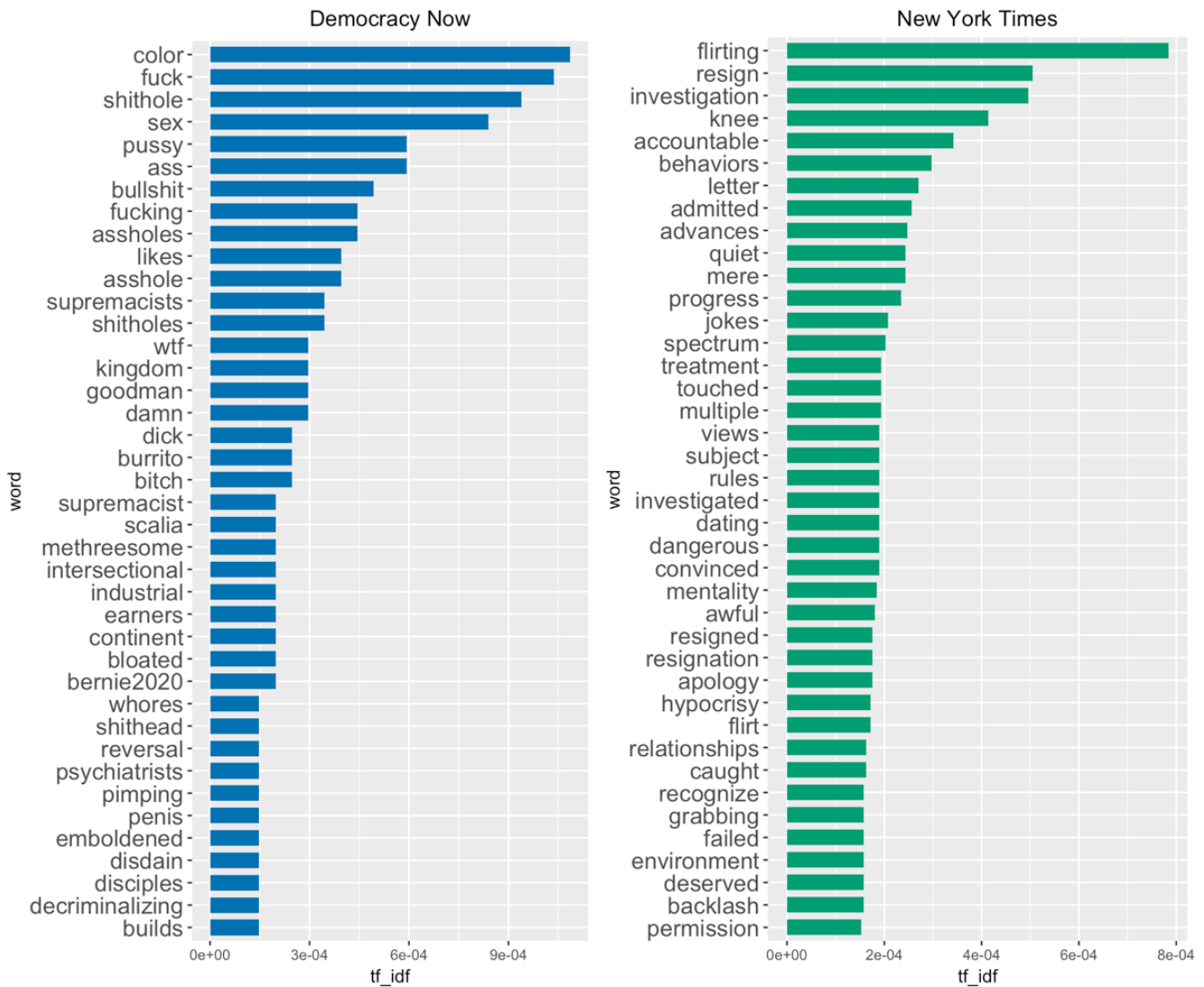


Figure 3.2 TF-IDF Analysis of Far-Left and Mainstream News Comments on #MeToo Articles on Facebook.

Note: Displayed are the top 40 tokens in the descending order of their TF-IDF weights based on a TF-IDF analysis of Democracy Now & New York Times comments on #MeToo articles.

Comments from the New York Times focus on experience and nuance. By contrast, NYT tokens are more semantically nuanced in reference to sex: “flirting”, “advances”, “dating”, “relationships”, “touched”, “knee” as shown in Figure 3.2. In fact, each list of the top 40 NYT tokens from both TF-IDF results do not contain any profanity or sexual references to women. Instead, the linguistic tokens are suggestive of aspects related to people’s experience, context, or discourse

around the topic of #MeToo as well as the various perspectives and quality of perspectives surrounding issues related to the topic as shown in Table 3.5.

Table 3.5. Categorization of New York Times Tokens From the Two TF-IDF Results (Mutual Tokens Are Bolded).

Experience	Context	Discourse	Perspectives	Quality of Perspectives
“experiences”	“context”	“discussed”	“norms”	“societal”
“survivor”	“nuance”	“justify”	“attitudes”	“generational”
“occurred”	“language”	“suggesting”	“views”	“pervasive”
	“degrees”	“expression”	“assumption”	“internalized”
	“spectrum”		“mentality”	“convinced”
			“judgement”	“recognized” / “recognize”
			“compassion”	

While all articles from the three publishers are topically focused on events surrounding the #MeToo movement, the TF-IDF results clearly resonate strong differences in important keywords discussed among commenters. This suggests that it may be challenging for political discourse surrounding important social topics (as embodied by the #MeToo movement) to topically converge among those who consume news sources that are highly distinct in political orientation. In the next section, we present the context in which the top TF-IDF tokens are discussed by the commenters in greater depth.

Analyzing rhetorical patterns using important keywords. To investigate the various rhetorical patterns observed in discussion among commenters, we draw examples from the data in which the top TF-IDF tokens are expressed in the comments. Findings from our discourse analyses, as shown in the selected examples from our data, demonstrate similarities in rhetorical style between DemNow and Breitbart commenters. Commenters on the far-left and alt-right sites both exhibit discourse behavior that subverts a particular social group and fragments solidarity of the movement based on racial and socioeconomic statuses.

Breitbart comments tend to dehumanize one group. Among the top 40 Breitbart tokens, the word “sex” has the highest TF-IDF weight. Breitbart commenters use the token most commonly to describe how the #MeToo movement is about women using sex to advance their careers:

"Isn't this how the whole #MeToo movement got started? Have sex in exchange for what you want."

The token “sex” is often used when #MeToo participants are framed in the context of participating in or encouraging their own sexual abuse, or what the commenter below would describe as engaging in “prostitution” to “further their career”:

"I have ZERO respect for women who participated in the sexual abuse in exchange to further their career and now are crying me too. That is not sex abuse, that is called prostitution."

Breitbart commenters also often bring up the notion of whether #MeToo experiences truly entailed “forcible sex”, often defining those that can be considered legitimate “MeToo” incidents as “rape” or

life-threatening situations where victims would have had to understandably choose forced sex in order to have saved their lives at knife- or gunpoint:

"So you sleep around...and then 20 or 30 years later decide to say you were harassed or made to have sex. Did any claim rape? Did they have a gun or knife held to their throats? How does one claim they were forced to have sex? I'd just like to know."

In these examples, it is evident that Breitbart commenters are bringing in strong prior beliefs about the legitimacy of victim status in sexual encounters. These data reveal a prevailing attitude that #MeToo stories are illegitimate statements of harassment. Further, there is a sense that commenters see themselves as exposing hypocrisy in the movement by suggesting those who have come forward are weak, manipulative, and untrustworthy individuals who are, across the board, using harassment complaints for personal gain. These commenters mostly criticize the #MeToo movement and its participants for encouraging women to fabricate their narratives of sexual abuse. The criticisms are usually accompanied by the commenters' own assumptions around what they consider legitimate sexual abuse or harassment.

DemNow comments tend to promote social fragmentation based on race. Among the top 40 DemNow tokens, the word "color" has the highest TF-IDF weight. "Color" is an important keyword frequently mentioned among commenters who often argue over which race is excluded or included in the #MeToo narrative:

"That's true! It's largely a bunch of fed up white women in #MeToo."

One commenter echoes agreement, arguing the #MeToo conversation is primarily focused on those who are racially and socioeconomically privileged:

"Yes...women of color and working-class women are especially vulnerable, but the #metoo conversation is primarily with regard to upper class white women."

Here, the commenter may be making a valid point on the importance of recognizing intersectional identities. However, the comment also serves to 'other' those who have come forth by suggesting that some women are garnering attention based on race and socioeconomic status. In response to a DemNow interview article on Tarana Burke, one Facebook commenter criticizes the #MeToo founder for "making it about racism":

"OMG, Stop already. Nobody is being excluded. Since when did using the word "women" mean just white women or whatever perceived persecution she sees? I thought we were talking about ALL women...Did someone go out there and say, 'this conversation is strictly limited to white women'? She's CHANGING the discourse now and making it about racism and exclusion of people of color because SHE'S doing that...The Time cover I'm looking at has a black woman squarely in the FRONT of the group...So where is the exclusion?"

Ironically, the DemNow commenter criticizes the focus on race by using race as rhetoric: "The Time cover...has a black woman squarely in the FRONT...So where is the exclusion?". The comment exhibits a form of discourse that emphasizes social fragmentation based on race, stripping away empathy towards understanding others' experiences. While not blaming the victim based on the same criteria as those posting comments on Breitbart stories, such generalizing and othering emerges as a striking rhetorical similarity in how each of the polarizing venues differs from the mainstream.

NYT comments encourage perspective-taking, informing, & educating others. The word with the highest TF-IDF weight in the list of NYT tokens from the NYT-Breitbart TF-IDF result was “experiences”. While Breitbart comments largely expressed judgments about others who had come forth with #MeToo stories, NYT comments often contain descriptions of the commenters’ own experiences. Taking the position of one’s own experience, these comments are written in style of personal disclosure and empathy. Such comments are framed to inform, encouraging others to take victims seriously and withhold generalized perspectives. An NYT article headlined, “Catherine Deneuve and Others Denounce the #MeToo Movement” was posted by the NYT Facebook page with the following Facebook post text: “Catherine Deneuve and others disapprove of #MeToo for punishing men when ‘the only thing they did wrong was touching a knee, trying to steal a kiss, or speaking about ‘intimate’ things at a work dinner or sending messages with sexual connotations.” In response, one commenter wrote:

*"It's not just a knee touch or sexual comments made in the work place! It's the entire **experience** of discomfort or guilt that you may have unknowingly somehow led that male on. It happened to me. My coworker and I became close friends, but he took it further, thinking I was flirting and hinting I would welcome his advances. I spent MONTHS being uncomfortable in a job that was my dream job otherwise. And when I finally DID address it, I was let go and he got to stay, because he had tenure, and no one witnessed his behavior (we often worked alone in a lab together). It's not a witch hunt. Each situation should be heard and judged independently, and NOT solely on your own harassment **experiences**-or lack of them."*

Here, the commenter shares a personal experience in an attempt to provide context around why certain incidents that some might consider harmless can be an injuring experience with significant

consequences for others. The focus of this comment highlights the fact that incidents of sexual harassment are more complicated than the description of concrete acts (“just a knee touch or sexual comments”) that have occurred. Rather than defining whether a certain act is and is not legitimate sexual harassment, the commenter here focuses on how the experience made her feel, encouraging others that “each situation should be heard and judged independently” rather than generalized.

The token “experiences” is also used in the context of informing and educating others on the topic of sexual abuse and harassment:

*“Keep in mind that many who have been assaulted began their **experiences** as children, or preteens/teens, setting them on a path to later engage in relationships that would further subject them to more assaults. The words “me, too” often do not equate to one single event of sexual harassment or assault, but years and even decades of such events by several perpetrators. The struggle to recover from this can last a lifetime.”*

The discussion prompted by the articles encourages some NYT commenters to remind readers that the point of the #MeToo movement is about “Listening...to put aside your prejudices and just be present to others in pain” of their experiences. Some NYT commenters warn others not to “categorically deny other women’s experiences” or put the burden on #MeToo participants to “explain away their personal experiences in some broad manner”. As such, whether the token “experience” is used in the context to describe one’s own or others’, many NYT comments focus on informing and sharing the experience of sexual harassment and abuse rather than generalizing and demonizing those who have come forth.

From the TF-IDF analysis of DemNOW and NYT comments, the word “flirting” had the highest TF-IDF weight in the list of NYT tokens. Among NYT commenters, there was a lot of discussion over the nuances that separated flirting from sexual harassment. For example, one commenter makes a distinction by providing situational context to her perspective:

*"Touching my knee, going in for a kiss, and **flirting** are NOT harassment or assault. They might be inappropriate/harassment depending on context (i.e. one person is a teacher and the other is a student). I don't mind a man doing any of those things I listed, even if I'm not interested. The problem is if he continues when I've made it clear it's unwanted attention."*

Another NYT commenter offers a discussion around how definitions need to be re-evaluated as they can evolve with time and encourages perspective-taking across generations:

*"The world is changing. What was "**flirting**" and "just having a little fun" a decade or so ago is being re-evaluated. The definitions of sexual assault have changed - they're tighter, now. Society evolves, and #MeToo has kindled a flare-up of awareness and of reaction. It isn't simply my parents' generation that has to rethink some aspects of casual behavior, it's mine, too."*

NYT commenters also express the need for perspective-taking across culture when talking about what is considered harmless flirting. In response to a lengthy discussion among several NYT commenters on a French actress's infamous critique of the #MeToo movement, one commenter argues that the critique warrants a deeper cultural understanding even though she personally disagrees with the actress:

*"American living in France here. I have come across many French women who feel this way, and it does not surprise me. I feel like it's a very big part of the macho culture here. When I first moved here I was shocked by things said in commercials on regular TV channels during the middle of the day that kids can see, the manner men talk to women and the racist jokes that are just culturally acceptable. A lot of the older women and younger women I speak to are scared of losing this macho man culture, men open doors for them, whistling at them, [because some] enjoy it. Whereas others including myself, am not flattered by a cat call. But this is why it is up to us to speak up in the moment and say we are uncomfortable with what is happening. Some women want and enjoy using their femininity as power and more power to them! Others do not. And that does not make one wrong or right. As mentioned above by [previous commenter's name] the difference is someone in power **flirting**/stealing kisses/placing hands on knees and using this power over the person and it's up to us the person receiving these gestures to openly question this behavior and speak up if we are not comfortable with it."*

Here, the commenter uses expressions such as "I feel like" and "I was shocked" in sharing her own experience of living in France as a way to provide other commenters, a better contextualization to the actress's critique in the original article shared on the NYT Facebook page. In addition to sharing her own experience, the commenter emphasizes reflection and acknowledgement of other people's experiences, noting that the different perspectives people have therefore "does not make one wrong or right".

In summary, findings from our discourse analysis demonstrate strong stylistic differences as well as similarities in rhetorical engagement based on the three politically distinct groups embodied by

the DemNow, NYT, and Breitbart comments. Research has shown that online users tend to converge to one another's communicative behavior (Danescu-Niculescu-Mizil et al., 2011); in other words, commenters in the same discussion group are likely to parrot each other's rhetorical manner in online conversation. This could in turn, amplify both positive (informing, educating, and perspective-taking) and negative (generalization, dehumanization, and social fragmentation) impacts as shown through our analysis. We discuss further implications in greater depth in the next section.

3.4 Discussion

3.4.1 Affective Language and Heuristic Processing

Heuristic processing, which involves making quick judgments about the information one comes across rather than engaging in deep reflection or discussion with others before coming to a conclusion (Schwarz & Clore, 1991), is particularly salient to social media consumption (Koh & Sundar, 2010; Metzger et al., 2010; Shrum, 2009). Content related to politics is not an exception (Messing & Westwood, 2014). Researchers have shown that users often rely on cognitive shortcuts and heuristic cues to evaluate political comments on social media (J. Lee & Pingree, 2016). Moreover, research has shown that when people engage in heuristic processing of political information online, negative emotional words induce more negative conclusions on the topic of discussion (J. Lee & Pingree, 2016; Messing & Westwood, 2014; Utych, 2018). Hence, a deluge of comments charged with negative emotions (negative affect, swear words, anger, sexual profanity) can create a strong negativity bias (Baumeister et al., 2001; Cavazza & Guidetti, 2014; Stieglitz & Dang-Xuan, 2013a; Utych, 2017, 2018) towards the subject of discourse. Our work supports these findings while also

suggesting that different venues appear to play a key role in the form of the emotional weight and rhetorical style in commenting behavior.

Research has also shown that when political information is communicated using negative emotional words, people are able to recall that information more easily (Utych, 2018). In other words, using language laden with negative affect makes a longer-lasting impression on people's memory, potentially allowing certain topics to be discussed more disproportionately often among commenters. This in return, can exacerbate the problems of political echo chambers on SNS (Garrett, 2009; Sunstein, 2018), biasing the nature of discussion around online news content among commenters.

Our analyses reveal that, compared to NYT commenters, Breitbart and DemNow commenters tend to use substantially more sexual profanity and curse words that are dehumanizing towards women. Studies have shown that dehumanizing language leads to negative emotional responses and attitudes towards the dehumanized group (Utych, 2017). This prevents openness of understanding other people's experiences – a key component of constructive democratic discourse (Dahlberg, 2001a).

3.4.2 Framing Effects and Generalized Perspectives

Framing effects (Druckman, 2001a; I. P. Levin et al., 1998) have been a useful concept in understanding the complex facets around social movements (Benford, 1997; Benford & Snow, 2000; McLeod & Detenber, 1999), news coverage (McLeod & Detenber, 1999; Scheufele, 1999; Schuck & De Vreese, 2006; Semetko & Valkenburg, 2000) as well as the formation of political opinion (Druckman, 2001a; Meraz & Papacharissi, 2013; Nelson & Oxley, 1999). A framing effect is a form of cognitive bias, in which people react to a given choice in different ways depending on how it is

presented (Druckman, 2001a; I. P. Levin et al., 1998). Results from our embedding analyses showed noticeable differences in the top tokens most commonly associated with “MeToo” across comments from the three publishers. Such differences imply potential framing effects (Druckman, 2001a; I. P. Levin et al., 1998) around how #MeToo is discussed across commenters consuming news sources with clear differences in political orientation – at least in our three samples. Furthermore, discourse analysis and embedding results on Breitbart comments demonstrate that the token “MeToo” is semantically associated with absolutist expressions, such as “always”. Absolutist rhetoric is harmful for democratic discourse (Berger, 2014), especially on moral and political topics that entail a wide spectrum of opinions. Research has shown that generalizing expressions tend to brush off contrasting perspectives, arguments (Marietta, 2012), as well as important facts (Marietta, 2012; Marietta et al., 2017) without seriously engaging with them – elements characteristic of fake news dissemination (Conroy et al., 2015; Janna et al., 2017; Rubin et al., 2016).

Furthermore, Breitbart comments are often laden with sweeping assumptions about the definition of sexual harassment and the character of people who have come forth while DemNow commenters make blanket statements around which group deserves more sympathy in the #MeToo narrative. Generalized expressions promote dominant viewpoints while marginalizing minority perspectives and stifling discussion (Berger, 2014; Triandafyllidou, 2000), which discourages empathy and sharing (Kalmoe, 2014; Marietta, 2012; Marietta et al., 2017; Triandafyllidou, 2000). This may account for why there was a much smaller proportion of Breitbart and DemNow commenters disclosing personal stories of sexual harassment or #MeToo experiences compared to NYT commenters in the data.

3.4.3 In-Group and Out-Group Dynamics

Our analyses reveal strong in-group and out-group dynamics (Robertson et al., 2013; Tajfel, 1974, 1981) among Breitbart and DemNow commenters. Breitbart comments portray #MeToo participants as “whores” and “sluts” who have manipulative sex to advance their careers. This form of out-group derogation (Branscombe & Wann, 1994; S. Levin & Sidanius, 1999; Tajfel, 1974), or the tendency to have negative views about people not part of one’s own group, villainizes all survivors of sexual harassment who are using the #MeToo movement as a platform to share personal stories.

DemNow commenters, on the other hand, exhibit strong in-group favoritism (S. Levin & Sidanius, 1999; Mullen et al., 1992; Tajfel, 1974) based on racial and socioeconomic groupings. Commenters frequently argue over how women of color deserve more attention within the #MeToo movement or that rich, white women are unfairly hijacking the #MeToo narrative from black women. Such in-group/out-group biases in discussion could polarize the #MeToo movement and undermine the initial solidarity of those using the movement to speak out on difficult experiences.

3.4.4 Summary of Implications

The most surprising insight generated by these data was the structural and rhetorical alignment between commenters in our selected cases of the far-left and alt-right news sites in relation to the comments on more mainstream media. The crassness, emotional weight, generalizing, and othering of these comments were noticeably similar. Media polarization research suggests that there is likely little to no overlap in the population of individuals consuming the articles in these different media venues. However, distance from the mainstream appears to foster a particular interaction pattern in relation to current events. Across the board, the comments in both of these venues tended to be

more absolutist and judgmental in striking contrast to the emotionally subdued, inclusive, personal, and empathetic comments that proliferated in the mainstream media. These data suggest that if online media has any chance of fostering democratic dialogue – a discourse in which viewpoints are shared reasonably, assumptions are challenged productively, and personal experience is used to promote inclusivity – it would not happen at either end of the political spectrum. This is a hypothesis that can be explored with further research.

3.4.5 Limitations

Our study has several limitations. First, for our data source, we chose only three sites, which may not have been representative of the three disparate political views. However, we feel that these three cases provide a basis for future investigation, in which we will employ a larger sample of news sources so as to increase generalizability. Furthermore, the number of articles among the three publishers were different. Breitbart contained the fewest, and New York Times the highest, number of articles posted on Facebook. While this sheds interesting light in terms of publication behavior towards #MeToo coverage between the two politically distinct news media, such difference in the number of articles could have influenced the topical diversity of discussion among commenters. Another potential limitation is that the tone of the article could have influenced the tone of the comments. While analyzing the alignment of article and comment discourse is beyond the scope of the current study, this can be addressed in future research.

Furthermore, reader demographics could explain the differences among the sites' comments as education levels are likely to affect linguistic style. Based on traffic statistics provided by Alexa, a data analytics company owned by Amazon, readers who went to college and graduate schools are overrepresented on NYT and DemNow websites (Alexa, 2018b, 2018c). For breitbart.com, the

proportion of those who went to college among its audience are similar to the general Internet population while those who are graduate degree holders are underrepresented (Alexa, 2018a). Furthermore, compared to the general online population, males are overrepresented at breitbart.com while underrepresented on nytimes.com and democracynow.com (Alexa, 2018a, 2018b, 2018c).

3.4.6 Conclusion

In this research, we use linguistic tools to compare commenting behavior across three politically distinct news sources covering the #MeToo movement. Through our work, we show that commenting behavior reflects how topics surrounding an online social movement are framed and conversed about within a particular political orientation. Our work shows that linguistic style and affect, as well as rhetorical patterns, can shed light on the underlying factors that influence civil discourse on social media. Comments from the far-left and alt-right sites that we analyzed exhibited structural similarities in rhetorical and linguistic patterns that could promote polarizing viewpoints, while comments from the mainstream site we analyzed tended to encourage contextual understanding through empathetic discussion. While in our study we examined three sites of disparate political orientations, we feel that analyses of linguistic patterns can be applied more broadly to examine a range of different sites and topics to more deeply understand polarization and entrenchment of views.

CHAPTER 4

Phase 2: How the Presence of Political Hashtags in Social Media News Posts Shapes Perception and Discourse Quality Across a General Audience

Both hashtag activists and news organizations assume that trending political hashtags effectively capture the newness of social issues that people care about (A. Friedman, 2014). In fact, news organizations with growing social media presence increasingly capitalize the use of political hashtags in article headlines and social media news post – a practice aimed to generate new readership through lightweight news consumption of content by linking a particular story to a broader topic (Holcomb et al., 2011). However, response to political hashtags can be complicated as demonstrated with the events surrounding #MeToo and #BlackLivesMatter. In fact, the semantic simplicity of political hashtags often belies the complexities around the question of who gets to participate (G. Yang, 2016), what intersectional identities are included or excluded from the hashtag (Marcotte, 2017), as well as how the meaning of the hashtag expands and drifts (Booten, 2016) depending on the context through which it is expressed. Overtime, reports show increasing backlash (Monica Anderson and Paul Hitlin, 2016; The Economist, 2018; Tolentino, 2018) and polarization (am, 2017; Garber, 2014; Taub, 2017a, 2017b; Tolentino, 2018) against key issues embodied by political hashtags. In this vein, we assume that political hashtags affect how people make sense of and engage with media content. However, we do not know how the presence of political hashtags –signaling that a news story is related to a current social issue – influences the assumptions potential readers make about the social content of an article.

Whether or not the general audience engages with hashtagged news posts in a manner that is aligned with the intent of content creators is an open question worth examining. To this end, we investigate whether the presence of political hashtags – signaling that a news story is related to a current social issue – influences the way a general audience reacts to and comments on the news content of a particular article.

4.1 Design of Experiment

The goal of this work is to examine the how political hashtags in social media news posts focusing on social issues affect people’s reactions toward the social topic of the news content. Through a randomized control experiment, we examine how the presence vs. absence of political hashtags (particularly the most prevalently used #MeToo and #BlackLivesMatter) in social media news posts (articles shared on Facebook by news publishers) shape reactions across a general audience (n=1979). We launched a survey randomizing the display of news posts to participants who answered questions and commented in reaction to the news post that either contained or excluded the political hashtag (control group) as shown in Figures 4.1 and 4.2.



Figure 4.1. Example of an Experimental Condition Facebook News Post (News Post With a Political Hashtag).

Note: The original news post (Figure A.1, Appendix) was identical to this experimental version, except for the bolded #MeToo followed by the text description.



Figure 4.2. Example of a Control Condition Facebook News Post (News Post Without a Political Hashtag).

Note: For the control condition, the hashtag was excluded from the post text, as well as the from phrase “#MeToo Prompts” in the headline.

4.1.1 Experimental Factors and Levels

To understand how the presence of political hashtags influences people’s perception of news posts, we conducted a 2x3 factorial experiment with the following factors and levels:

Political Hashtag: (1) included, (2) excluded in the news post

Comments: (1) no comment, (2) positive comment, (3) negative comment

We included positive and negative comments as a second factor to mirror closeness to reality of the news posts in the social media ‘wild’ as they often contain affective comments under the article comment threads (Diakopoulos & Naaman, 2011; Glenski & Weninger, 2017; E.-J. Lee, 2012). Prior work has shown that negative comments induce more negative reactions towards social media news posts (Glenski & Weninger, 2017). Hence, we included affective comments in our experiment to control for reactions towards hashtagged vs. hashtag-absent news content. Therefore, a total of 48 news posts (two political hashtags x four news posts x six scenarios) were randomly displayed in the survey (see Figure 4.1)

Table 4.1. Phase 2 Experiment: Factorial Design With Hashtags and Affective Comments as Manipulated Factors.

	Hashtag	No Hashtag
No comments	Scenario 1: Article headline & the text portion of the news post include the hashtag while preserving the intended message of the content as much as possible.	Scenario 2: Article headline & the text portion of the post exclude the hashtag while preserving the intended message of the content as much as possible.
Positive comments	Scenario 3: Supplemented scenario 1 with (+) comment below the post.	Scenario 4: Supplemented scenario 2 with (+) comment below the post.
Negative comments	Scenario 5: Supplemented scenario 1 with (-) comment below the post.	Scenario 6: Supplemented scenario 2 with (-) comment below the post.

4.1.2 Selection of Hashtags

We specifically chose #MeToo and #BlackLivesMatter for this experiment based on two key criteria. First, we chose political hashtags that were directly related to broad social issues (e.g., not tied to a particular individual or a political campaign slogan). This criterion was implemented, because our study was designed to understand the impact of hashtags that frame pressing social issues on people's experience of news consumption.

Second, our selection focused on political hashtags that were published in the headlines of actual news stories put out by major news outlets at least five times in the past up until the time of survey design (December 2018). Criterion two was implemented, because this study examined hashtags that were being regularly used to frame news stories in major outlets, thereby suggesting broad resonance of the hashtag. Further, the fact that mainstream news sources were employing particular hashtags in the headlines suggests that they were deemed not overly-inflammatory. Only two hashtags fit within these criteria and thus were used in the experimental manipulations of this study.

4.1.3 Selection of Facebook News Posts.

For the experiment, we used a total of eight news posts - four news posts topically focused on #MeToo and four on #BlackLivesMatter from the New York Times (NYT) and NPR¹². The authors

¹² NPR and NYT are considered left-center (relatively close to mainstream) according to mediabiasfactcheck.com. We discuss selection of news source in the limitations section.

reviewed all Facebook article posts published by NPR and NYT containing the hashtags as well as articles that appeared in the search results and were topically related to the hashtags. After reviewing each news post based on its headline and the text portion of the news post, we selected four articles per hashtag. Selection was primarily based on whether the intended message of the article could be best preserved with minimal modification of the headline and post text when including and excluding the hashtag.

We included several articles in this study to ensure that the effect of hashtags was not a product of how the hashtag was used in the headline or the content of the article. For example, when the hashtag #BlackLivesMatter is included in an article on police killing versus an article about race in education, the emotional intensity in which the hashtag is framed is clearly different. Hence, including several articles in rotation reduced participant biases from over-contextualization.

4.1.4 Selection of Positive and Negative News Post Comments


We reviewed all the original comments from the eight news posts and separated positive and negative comments into two groups. We then selected comments that were clearly positive and negative as well as relevant to the article or the social topic of the news post. After screening out comments that failed to meet this initial criteria (e.g., expletives, emoticons, comments in foreign language, etc.), we then invited three researchers to our lab who were asked to rate the comments shown below each of the 48 scenarios (8 articles x 6 scenarios) in terms of three criteria: (1) clarity of language, (2) emotional intensity of language, and (3) positive vs. negative stance towards the issue of women's rights and protection from sexual harassment for #MeToo posts and/ or black rights and racial equality for black people against police brutality for #BlackLivesMatter posts¹³.

¹³ All ratings were based on a 5-point agreement Likert scale response to the following statements:


The researchers then discussed interactively with the main authors throughout the rating process. For each of the 8 news posts, we finally selected one positive and one negative comment to be added below the post for scenarios 3 and 6 (as shown in Figures 4.3 and .4.4). All personal information in these comments were de-identified to ensure the original commenter's privacy.

-
1. The language used in this comment is clear to understand.
 2. The emotional intensity of the language used in this comment is moderate.
 3. This comment is clearly positive towards women's rights and/ or protection from sexual harassment (or black rights and racial equality for black people).

Inter-rater reliability for the three criteria were relatively high (0.92, 0.90, and, 0.98, respectively).

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What does it mean to declare that **#blacklivesmatter** in education?



Questions of Race And Charter Schools Divide Education Reformers in the Era of #Blacklivesmatter
Black Lives Matter, the NAACP and the future of a once bipartisan alliance on education.
NPR.ORG

👍 Like 💬 Comment ➦ Share

Sorted by Highest Votes ▼

 **Alexis Lee** It means making sure that classes aren't set up so that all the white kids end up in honors and the black kids in basic skills classes. It means using multiple strategies to make sure that all kids have access to rigorous content and ideas regardless of race.


Like · Reply · 3h   912



Figure 4.3. Example of an Experimental Condition Facebook News Post with a Positive Comment (News Post With a Political Hashtag Appended with a Positive Comment).

 **NPR**
September 30, 2016 · 🌐


What does it mean to discuss racial issues in education?




Questions of Race And Charter Schools Divide Education Reformers
The NAACP and the future of a once bipartisan alliance on education.
NPR.ORG

 Like  Comment  Share

Sorted by Highest Votes ▼

 **Alexis Lee** Every single person in this country regardless of race, has the same opportunities as everyone else. If you can't make it, it's your fault. No one is being held back on purpose for being black.

  912

Like · Reply · 3h

Figure 4.4. Example of a Control Condition Facebook News Post with a Negative Comment (News Post Without a Political Hashtag Appended With a Negative Comment).

4.1.5 Survey Deployment

We used Qualtrics to design the survey, which randomly displayed one of the 48 scenarios to each participant. Participants were asked to answer questions about the news post in addition to leaving a comment in reaction to the news post. We launched the survey on Amazon Mechanical Turk across English-speaking workers over the age of 18 residing in the United States. Workers were compensated an hourly rate of \$8-\$10 for completing the assignment.

CHAPTER 5

Study 2: Influence of Political Hashtags on Perception of Social Media News Posts

In this work we conducted a randomized control experiment to examine how the presence of political hashtags (particularly the most prevalently used #MeToo and #BlackLivesMatter) in social media news posts shape reactions across a general audience (n=1979). Our findings show that compared to the control group, people shown news posts with political hashtags perceive the news topic as less socially important and are less motivated to know more about social issues related to the post. People also find the news more partisan and controversial when hashtags are included. In fact, negative perception associated with political hashtags (partisan bias & topic controversy) mediates people's motivation to further engage with the news content). High-intensity Facebook users and politically moderate participants perceive news with political hashtags as more partisan compared to posts excluding hashtags. There are also significant differences in discourse patterns between the hashtag and control groups around how politically moderate respondents engage with the news content in their comments.

5.1 Research Questions and Hypotheses

Research Question 1: How does the presence of political hashtags in news posts affect how a general audience orients towards news content?

We know that people who use political hashtags are doing so to denote alignment with an issue (Lin et al., 2013), personalize expression of why a particular story is important (Loza, 2014), and encourage others to engage in the content of the news story (Rho et al., 2018). We do not know how this practice is received and whether or not a general audience engages with hashtagged news content in a manner that is aligned with this intent. As mentioned earlier, computational approaches to understanding the value of political hashtags have operationalized frequency and volume of tags as positive engagement and social interest around hashtagged content (Booten, 2016; Hadgu et al., 2013; Lin et al., 2013; Romero et al., 2011). Yet again, these studies rely on data from hashtag producers rather than passive consumers. Therefore, we do not know for sure whether engagement and social interest around political hashtags translate between these groups. Through this research question we investigate whether political hashtags motivate or deter people from wanting to further engage with related social issues and by large, their impact on civil discourse in online venues through news posts on social media.

In order to understand whether the inclusion of political hashtags in news posts leads to motivation for constructive civil discourse and engagement as assumed by certain news practitioners and hashtag activists, we focused on two key aspects in participants' reaction to the news posts – motivation for engagement and negative perception.

Hypothesis 1

For motivation for engagement, we asked whether participants found the topic of the news post (referring to the randomized article post shown to the participant in the survey) was socially important (Social Importance of News Topic) and whether they wanted to know more about social issues related to the news post (Motivation to Know More). In Table 5.1, we show the corresponding questionnaire items in the survey that served as dependent variables to test our hypotheses. All survey items for the dependent variables were rated on a 5-point agreement Likert scale response.

Hypothesis 1 tests motivation for engagement towards news posts with vs. without political hashtags as follows.

- H1a: presence of political hashtags significantly influences perception of social importance towards the topic of the news post.
- H1b: presence of political hashtags significantly influences willingness to know more about social issues related to the news post.

Table 5.1. Phase 2 Experiment Questionnaire Items for the Dependent Variables.

Dependent Variables		Questionnaire Item
Positive Engagement	Social Importance of News Topic	I find the topic of this news post to be socially important.
	Motivation to Know More	I want to know more about social issues related to this news post.
Negative Perception	Partisan Bias	The partisan (liberal vs. conservative) undertone of this news post is obvious.
	Topic Controversy	I find the topic of this news post to be controversial.

Hypothesis 2

Although popular political hashtags are used by news publishers to denote an article's broader topical relevance to a social issue trending in discussion, we also know that people use popular hashtags to denote that they align with political and social identities (Bonilla & Rosa, 2015; Lin et al., 2013). We also see "hashtag wars" when political hashtags are used as a form of expressing commentary and backlash against the initial issue and movement (Hadgu et al., 2013; Jackson & Foucault Welles, 2015). Therefore, political hashtags, especially in political outlets can be wielded as partisan tools that spur excessive controversy and division, thereby undermining conditions for civil discourse (Rho et al., 2018).

Through Hypothesis 2, we examine whether and how negative perceptions pertaining to partisanship and controversy associated with political hashtags shape reactions toward news content. Hence, we asked participants about their perception of partisan bias (Partisan Bias) of the randomized news posts they saw and whether they found the topic of news post to be controversial (Topic Controversy).

Hypothesis 2 tests how political hashtags shape negative perceptions towards news content.

- H2a: presence of political hashtags is significantly associated with perception of partisan bias towards the news post.
- H2b: presence of political hashtags is significantly associated with whether people find the topic of the news post to be controversial.

Research Question 2: How do people across the political spectrum, particularly the politically moderate, respond to news posts framed with political hashtags?

#MeToo and #BlackLivesMatter are regarded as hashtags denoting “liberal” issues (Clark, 2016; Jackson et al., 2017; Michie et al., 2018; Rodino-Colocino, 2014). Prior research suggests that people who already have strong feelings about an issue or are polarized to the right and left of the political spectrum, employ political hashtags in attempt to control discourse (W. L. Bennett & Segerberg, 2011; Bruns et al., 2013). As mentioned earlier, by focusing on this population – people using rather than consuming hashtags – research may be inflating the impact of political hashtags to enhance mobilization around social issues. We can assume that those on the left and right have strong feelings about the presence of political hashtags in news content. However, we do not know how more moderate people engage with social issues online. Through this question we investigate how people who identify as politically moderate¹⁴ respond to news posts that either include or exclude a well-known political hashtag, such as #MeToo and #BlackLivesMatter.

Research Question 3: How does the presence of political hashtags affect whether high vs. low intensity Facebook users perceive partisan bias in news posts?

Prior work has shown that increased exposure to opposing political views on social media can increase political polarization (Bail et al., 2018). Through this research question, we investigate whether repeated exposures to political hashtags may influence perception of partisan biases as well. Assuming those who use Facebook more frequently are likely to have a higher chance of being exposed to these social media hashtags, we compared responses around perception of partisan bias between two different levels of Facebook use - high (use Facebook several times per day) and low (less than once per week) intensity users.

¹⁴ We use the 7-point Likert scale on Political View (1=Extremely Liberal, 2=Very Liberal, 3=Liberal, 4= Moderate or Middle of the Road, 5=Conservative, 6=Very Conservative, 7=Extremely Conservative) commonly employed by national survey institutions.

5.2 Analysis

Research Question 1: Impact of Political Hashtags on Audience Perception of News Content

To understand how presence vs. absence of political hashtags affect various perceptions related to motivation for engagement (H1) and negative perception (H2), we used regression models with Social Importance of News Topic, Motivation to Know More, Partisan Bias, and Topic Controversy as outcome variables.

Furthermore, for our regression models, we included gender, political view, and comment valence as control variables to eliminate potential confounding effects for the following reasons.

Gender: Research shows that women and men use different linguistic styles when tweeting political hashtags (Cunha et al., 2014) and that women tend to use political hashtags less frequently (Bates, 2015; Is Politics on Twitter a Man's World?, 2015). Given these findings, we included gender as a control variable to control for reactions towards hashtagged news posts in our experiment.

Comment Valence: As previously mentioned, affective comments are known to shape reactions towards online content; hence, we included comment valence as a control variable (-1=negative comment, 0= no comment, 1=positive comment).

Political View: Given that people with varying political orientation interpret political hashtags differently (Bonilla & Rosa, 2015), we asked respondents to report their political view based on a 7-point Likert scale (see footnote 2).

Research Question 2: Impact of Political Hashtags on the Politically Moderate

To compare how presence vs. absence of political hashtags affect reaction among the politically moderate, we conducted a t-test between the control and the hashtag group across those who identified as politically moderate (Political View = 4). We then conducted discourse analysis (Gee, 2014) on all the comments left by those who identified as politically moderate and present selected findings.

Research Question 3: Impact of Political Hashtags on Partisan Reaction Across How High vs. Low Facebook Intensity Users

For RQ3, we followed a similar procedure focusing on high-intensity Facebook users.

5.3 Results

Our findings show that compared to the control group, those who were shown hashtags in their news posts perceived the news content as less socially important and were less motivated to know more about social issues related to the post. Furthermore, respondents found the news more partisan and controversial when hashtags were included. In fact, perception of partisan bias and topic controversy towards news posts is the mechanism through which people perceive hashtagged news posts to be less socially important and are less motivated to know more about related social issues. Further, compared to news posts without hashtags, news with hashtags were perceived significantly more partisan among those who use Facebook more often as well as those who are politically moderate. Between the hashtag and control groups, there were also significant differences in discourse patterns around how politically moderate respondents engaged with the news content in their comments.

5.3.1 Participants

A total of 1979 participants (47% female, mean age 36.5) completed the experiment, with an average of 330 participants for each scenario (Table 5.2).

Table 5.2. Study 2 Participant Sample Breakdown in Each Scenario (n=1979).

	Hashtag	No Hashtag
No comments	340	323
(+) comments	325	339
(-) comments	320	333

More specific details on participant demographics are shown in Table 5.3. In aggregate, these workers contributed 1979 comments in reaction to the news post they saw in the survey (with an average of 24.8 words or 115 characters written per post).

Table 5.3 Study 2 Demographic Breakdown of Survey Participants (n=1979).

Category	Demographic Traits	Freq.	%
Gender	Male	1027	52%
	Female	929	47%
	Non-Binary	14	1%
	Prefer not to answer	9	0%
Age	18-27	458	23%
	28-37	776	39%
	38-47	379	19%
	48-57	226	11%
	58-67	114	6%
	68-77	24	1%
	78-87	2	0%
Political View	Extremely Liberal	221	11%
	Very Liberal	424	21%
	Slightly Liberal	287	15%
	Moderate, Middle of the Road	419	21%
	Slightly Conservative	256	13%
	Very Conservative	270	14%
	Extremely Conservative	102	5%
Education	High school incomplete or less	12	1%
	High school graduate or GED	168	8%
	Some college (community college, associate's degree)	605	31%
	Four year college degree/bachelor's degree	793	40%
	Some postgraduate or professional schooling, no postgraduate degree	89	4%
	Postgraduate or professional degree, including master's, doctorate, medical or law degree	312	16%

5.3.2 Decrease in Perception of Social Importance of News Topic

Research Question 1: Impact of Political Hashtags on Audience Perception of News Content

Hypothesis 1A: People perceive the news topic to be significantly less socially important when hashtags are included in news posts.

Presence of political hashtags in news posts emerged as a significant negative predictor of motivation for engagement. Our regression output (Table 5.4) demonstrates that the presence of political hashtags in news posts negatively affects people's perception that the news topic is socially important (a .048 standard deviation decrease in perception of social importance of news topic). In other words, when political hashtags are included in news posts, people perceive the news topic to be significantly less socially important. Our control variables also significantly contribute to a decrease in perception of social importance, showing that men (compared to women) and those who are politically conservative (compared to those identified as politically liberal) find the news topic less socially important. Comment valence is also a significant predictor. Compared to those shown news posts with negative comments, participants who saw news posts with positive comments found the news topic to be significantly more socially important.

Table 5.4. Standardized Linear Regression Models Demonstrating the Impact of Political Hashtags on Positive Perceptions Toward News Posts.

Note: Linear models show how the presence of political hashtags in news posts affect motivation for engagement towards the news post in terms of social importance of news topic (H1a) and motivation to know more about social issues related to the news post (H1b).

	DV= Social Importance of News Topic			DV= Motivation to Know More about Related Social Issues		
	B	SE B	β	B	SE B	β
Hashtag Present	-0.100*	0.042	-0.048*	-0.137*	0.052	-0.053**
Male	-0.213***	0.039	-0.108***	-0.178***	0.048	-0.074***
Political View	-0.216***	0.012	-0.358***	-0.233***	0.015	-0.317***
Comment Valence	0.090***	0.026	0.070***	0.091**	0.032	0.058**
Intercept	5.112***	0.055	0.000***	4.574***	0.069	0.000***
Adjusted R ²	0.147			0.111		

* p < .05; ** p < .01; *** p < .001

5.3.3 Decrease in Motivation to Know More about Relevant Social Issues

Hypothesis 1B: People are less motivated to know more about social issues related to news posts with political hashtags.

Similarly, when political hashtags are included in news posts, people are significantly less motivated to know more about related social issues (a .053 standard deviation decrease in motivation to know more about social issues related to the news post). The control variables significantly contribute to decreased motivation to know more in a similar manner to the regression results for perception of social importance. Men, politically conservative individuals, and those who were shown negative comments significantly want to know less about social issues related to the news post compared to their counterparts who are female, politically liberal, and from the positive-comment group.

5.3.4 Increase in Partisan Perception of News Content

Hypothesis 2A: People find news posts more partisan when political hashtags are included in news posts.

On the other hand, political hashtags in news posts is a significant positive predictor of negative perception. Based on our regression results for negative perception (Table 5.5), presence of political hashtags significantly increases people's perception that the partisan undertone of the news post is obvious (a .063 standard deviation increase in perception of partisan bias). In other words, when political hashtags are included in news post, people perceive the news post to be more partisan.

Overall, control variables also significantly contribute to perception of partisan bias towards the news post. Compared to women and the politically liberal, perception of partisan bias is significantly

higher across males and the politically conservative. Comment valence, however, has no significant effect on perception of partisan bias.

Table 5.5. Standardized Linear Regression Models Demonstrating the Impact of Political Hashtags on Negative Perceptions Toward News Posts.

Note: Linear models show how the presence of political hashtags in news posts affect negative perception towards the news post in terms of perception of partisan bias (H2a) and topic controversy (H2b).

	DV= Perception of Partisan Bias			DV=Perception of Topic Controversy		
	B	SE B	β	B	SE B	β
Hashtag Present	0.160**	0.052	0.063**	0.182***	0.054	0.071***
Male	0.101*	0.049	0.043*	-0.067	0.051	-0.028
Political View	0.180***	0.015	0.248***	0.116***	0.016	0.157***
Comment Valence	-0.058	0.032	-0.038	-0.120***	0.033	-0.076***
Intercept	2.317***	0.070	0.000***	2.870***	0.072	0.000***
Adjusted R ²	0.067			0.034		

* p < .05; ** p < .01; *** p < .001

5.3.5 Increase in Perception of Topic Controversy

Hypothesis 2B: People find the topic of the news post more controversial when political hashtags are included in news posts.

Similarly, when political hashtags are included in news posts, people find the news topic to be significantly more controversial (a .071 standard deviation increase in perception of topic controversy). Furthermore, those who are politically conservative and were shown positive comments find the news topic more controversial than those who are liberal and were shown negative comments in the news post. There is no significant difference across gender in perception of topic controversy.

5.3.6 Mediation Effect

Negative Perception Mediates Political Hashtags' Impact on Motivation for Engagement.

So far, our findings show that the presence of political hashtags in news posts decreases motivation for engagement (H1) while increasing negative perception (H2). When political hashtags are included in news posts, people find the social issue discussed in the news post to be less socially important (H1a) and are less motivated to know more about social issues related to the news post (H1b). Furthermore, presence of hashtags in news posts leads people to believe that the news post is more partisan (H2a) and controversial (H2b).

Prior research shows that not only are people turned off by partisanship in news coverage, but that hyper-partisanship is linked with less motivation to engage with social issues (Bail et al., 2018). Assuming that the quality of democracy is “partly a function of the extent to which people are engaged with politics through social issues” (Bail et al., 2018), we further examine whether negative

perception associated with political hashtags is the mechanism that explains political hashtags' negative influence on motivation for engagement. In other words, we assess whether the reason political hashtags turn people off is due to the perception of partisan bias and topic controversy induced by political hashtags.

Hence, to further investigate how perception of partisan bias and controversy towards news posts framed with political hashtags affect motivation for engagement, we conducted a mediation analysis. Using Mplus (Muthen & Muthen, 1998), we constructed a path model, controlling for gender, political view, and comment valence. Figure 5.1 shows the path model with the significant standardized path coefficients¹⁵. The resulting fit indices show that our model indicated good fit ($\chi^2(6) = 66.185, p < 0.001$; Comparative Fit Index = 0.956; Root Mean Square Error of Approximation = 0.071 [0.052 0.057]; Standardized Root Mean Square Residual = 0.026) (Gefen et al., 2000; Hooper et al., 2008).

Our path model demonstrates that when political hashtags are included in news posts, participants find the hashtagged news content more partisan ($\beta = .071$ or a .071 standard deviation increase in perception of partisan bias), which in return makes people perceive the news topic to be less socially important ($\beta = -.213$ or a .213 standard deviation decrease in perception of social importance), as well as less motivated to know more about social issues related to the news post ($\beta = -.117$). In fact, the impact of political hashtags in news posts on perception of social importance of news topic is fully mediated by perception of partisan bias (indirect effect of hashtag presence on social importance mediated by partisan bias = $-.015, p = .002$). In other words, political hashtags in

¹⁵ Following standard practice for path analyses (Loehlin, 1987), we first estimated our path model including a direct path between hashtag presence and social importance of news topic and a direct path between hashtag presence and motivation to know more about related social issues. The direct effects were not significant, thus the subsequent final model we estimated did not include those direct effects. A direct path between perception of topic controversy and perception of social importance of news topic was not included in the final model for the same reason.

news posts significantly reduces people’s perception that the news topic is socially important, due to the perception that the hashtagged news post is partisan.

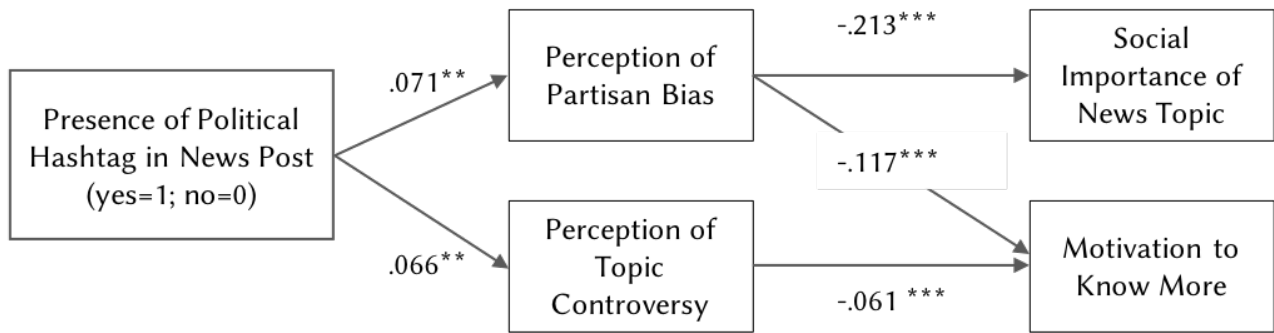


Figure 5.1. Mediation Analysis: Negative Perceptions Associated With Political Hashtags Decrease Positive Engagement Around News Content.

Note: The path model showing standardized coefficients (* $p < .05$; ** $p < .01$; *** $p < .001$) demonstrates that the presence of political hashtags in news posts predicts an increase in a person’s negative perception (Partisan Bias & Controversy) towards the news post, which in turn, predicts decreased motivation for engagement (Social Importance and Know More).

Similarly, political hashtags in news posts increase people’s perception that the news topic is controversial ($\beta = .066$), which in turn demotivates people to know more about social issues related to the news post ($\beta = -.061$). The impact of political hashtags in news posts on knowing more about related social issues is fully mediated by perception of partisan bias (indirect effect of hashtag presence on motivation to know more mediated by partisan bias = $-.008$, $p = .03$) and topic controversy (indirect effect of hashtag presence on motivation to know more mediated by topic controversy = $-.004$, $p = .005$). In other words, perceptions of partisan bias and topic controversy are

the mechanisms through which people are less motivated to know more about social issues related to the hashtagged news posts.

Overall, our path model demonstrates that negative perception through partisan bias and topic controversy is the mechanism through which people perceive the hashtagged news posts to be less socially important and are less motivated to know more about related news posts.

5.3.7 Impact of Political Hashtags on the Politically Moderate

1. Difference Partisan Perception of News Content Across Political Views

In order to compare how the presence of political hashtags shapes perception of partisan bias between the politically moderate and those who are more politically extreme, we used kernel density estimate (KDE) to visualize the distribution of responses on perception of partisan bias towards news posts across three political groups - those who identified as “Extremely Liberal”, “Moderate or Middle of the Road”, and “Extremely Conservative” (Figure 5.2).

The distribution of responses among those who identify as extremely liberal for both hashtag and control groups (Figure 5.2, left) are left-skewed, meaning in general, these folks tend to regard news posts about gender and racial issues from our experiment less partisan regardless of hashtag presence. By contrast, for the extremely conservative participants (Figure 5.2, right), the distribution of responses is more right-skewed. However, the distribution for the hashtag group (blue) peaks higher and is even more right-skewed than the non-hashtag group (red), implying that hashtag presence makes extremely conservative people perceive the news as more partisan.

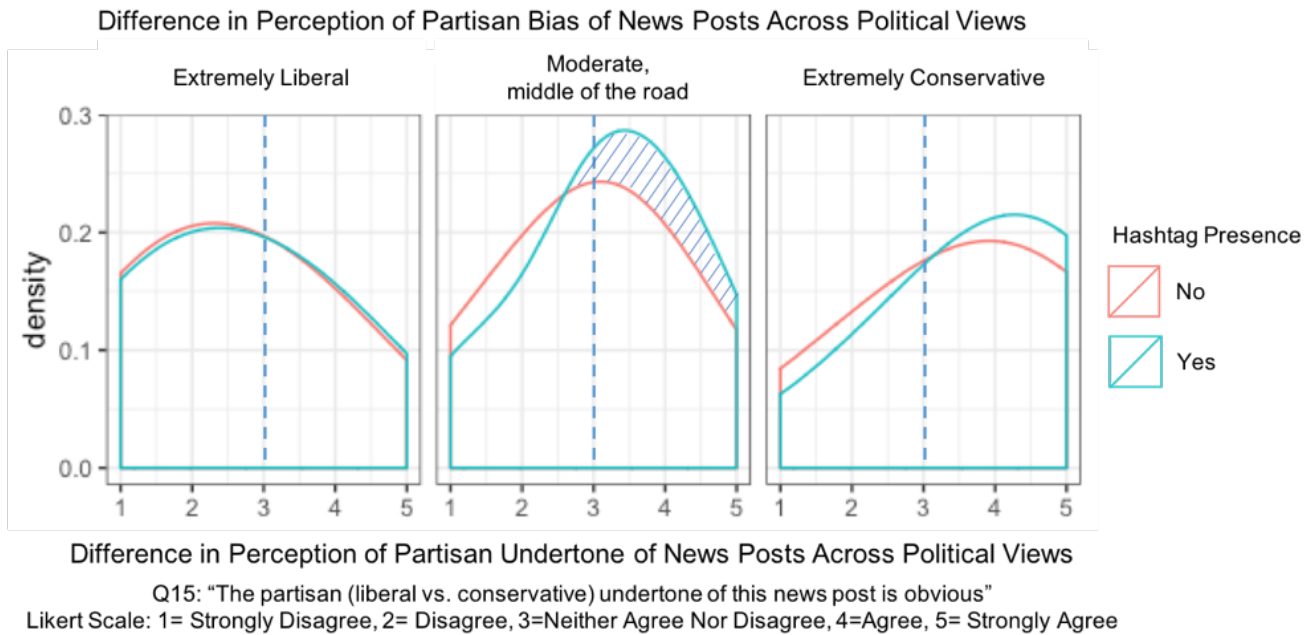


Figure 5.2. Kernel Density Estimate (N=742) Comparing Individual Differences in Perception of Partisan Bias of News Posts Across Three Political Groups (Extremely Liberal, Moderate, & Extremely Conservative) When Hashtags Are Present (Blue) vs. Absent (Red) in News Posts.

Note: Higher numbers on the x-axes represent a greater shift toward increased perception of partisan bias.

While these are somewhat expected results, what is really interesting is the people in the middle (Figure 5.2, center). Among those who identify as politically moderate, those who saw news posts with hashtags (blue) perceive news posts to be more partisan than those shown news posts without hashtags (red) as illustrated in the shaded gap between the blue and red distributions. To test for significance, an independent t-test was conducted to compare perception of partisan bias towards news posts between the control and the hashtag groups among the politically moderate. Results show a significant difference in perception of partisan bias for the control (M=2.935, SD=1.298) and hashtag groups (M=3.16, SD=1.251); $t(417) = -1.9449, p = 0.05$.

2. Interpretation and Discourse Around News Content Across the Politically Moderate

Among the Politically Moderate, There Are Key Differences in Discourse Patterns Between the Hashtag and Control Groups in Their Comments on News Posts. In Figures 5.3 and 5.4, we show two survey scenarios – one containing the hashtag (left) and one without (right).¹⁶ In Table 5.6, we show comments written by respondents in reaction to the news posts shown in respective scenarios. Only respondents who identified as politically moderate are included.

¹⁶ Everything in the hashtag scenario post on the left is identical to the original news post published on Facebook (Figure A.4, Appendix), except for the bolded #MeToo hashtag in the post text, which was not included in the original post.

 **The New York Times**
February 21 · 🌐

A new survey reported that 81% of women and 43% of men said they had experienced sexual harassment or assault over their lifetimes. **#MeToo**

What Happened, and to Whom

Percent who say they have experienced:

	Women	Men
Verbal sexual harassment	77%	34%
Unwelcome sexual touching	51%	17%
Online sexual harassment	41%	22%
Being physically followed	34%	12%
Genital flashing	30%	12%
Sexual assault	27%	7%

Source: Stop Street Harassment

Numbers Hint at Why #MeToo Took Off: The Sheer Number Who Can Say Me Too

Broadly defined, sexual harassment is surprisingly pervasive, a new survey finds, and men are targets, too.

NYTIMES.COM

👍 Like 💬 Comment ➦ Share

Figure 5.3. Experimental Condition Facebook News Post With the #MeToo Hashtag.



The New York Times

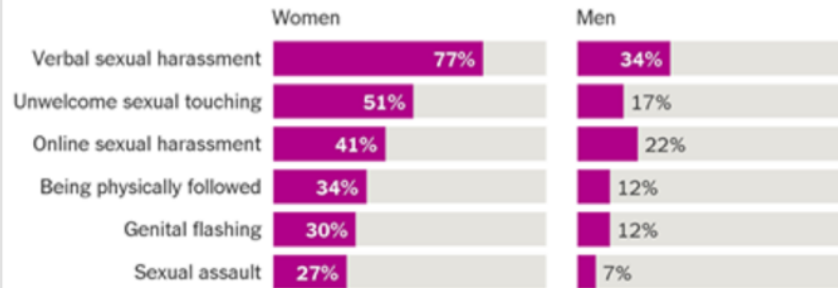
February 21 · 🌐



A new survey reported that 81% of women and 43% of men said they had experienced sexual harassment or assault over their lifetimes.

What Happened, and to Whom

Percent who say they have experienced:



Source: Stop Street Harassment



Numbers Hint at Why More Women Reported Sexual Harassment Experiences Through Social Media

Broadly defined, sexual harassment is surprisingly pervasive, a new survey finds, and men are targets, too.

NYTIMES.COM



Figure 5.4. Control Condition Facebook News Post Without the #MeToo Hashtag.

Table 5.6. Comment Responses to News Posts With and Without #MeToo Hashtags as Shown in Figures 5.3 and 5.4.

Comment responses to news post with hashtags (Figure 5.3)	Comment responses to news post without hashtags (Figure 5.4)
<p><i>The #MeToo topic is turning into something like the Kardashians. You can't look at the news without both of them headlining things. It is an important issue, but I am getting tired of seeing it over and over.</i></p>	<p><i>I think the men's percentage is higher, but more women report this kind of stuff than men. Men should be more open about the stuff they go through as well.</i></p>
<p><i>The MeToo movement is ridiculous. People are best off when they report incidents to the police. Rehashing incidents years later on a public forum just results in witch hunts. These incidents are personal and should be resolved with more dignity.</i></p>	<p><i>Giving a platform and voice to victims via social media is a great way to share one's experience when one is to uncomfortable to do so publicly. Some people are too afraid to report any harassment or assaults due to being labeled a liar so I'm glad there's a way to keep track of these instances without them going unheard.</i></p>
<p><i>This is a load of crap on a number of levels. When broadly defined, Pluto was a planet too. The numbers on this topic have been inflated before and it appears they have again.</i></p>	<p><i>To say one gender over another experiences harassment more is an understatement! I feel it happens just as much for each gender, but more are afraid to say anything.</i></p>
<p><i>I'm sorry - 43%of men?!?!? Now that's a load of shit. Especially 17% of "unwelcomed sexual touching". This article reads "FAKE NEWS".</i></p>	<p><i>It is quite alarming that sexual harassment and assault occur at such a high rate among people. I suspect that the numbers for men may be lower than the truth due to the fact that society presents the stigma that if a man reports a sexual assault or harassment that occurred to them, then they will be viewed as being weak. Maybe we need to teach children at a younger age what is and what isn't appropriate to say and do to another person instead of ignoring the obvious fact that there is a problem in our society.</i></p>

<i>And you idiots still think #MeToo is a hoax against men? C'mon, some people may be taking advantage of the movement, but there's a reason why it f****ng exists dimwits!!</i>	<i>My first reaction is that these numbers are really high. Most women are sexually harassed, and almost half of men are sexually harassed. That's remarkable and sad. Looks like a big social problem.</i>
<i>I don't care about this.</i>	<i>I like that they are showing the statistics of the percentage of men that experience sexual harassment as well and not just the women.</i>
<i>I don't believe this post is backed with any real knowledge or fact</i>	<i>I find the information listed in the article to be non-biased. Frankly these numbers seem low to me.</i>
	<i>I really want to understand more about this phenomenon and why women are feeling this way.</i>

3. Greater Focus on Hashtag Politics and Minimal Attention Towards Social Issues

When comparing respondent comments between the hashtag and control groups what is immediately noticeable is that those who were shown hashtags in the news posts are more focused on the politics of the hashtag rather than the social issues related to it. For example, among respondents in the hashtag group, not once, are the terms “sexual harassment” or “sexual assault” – social topics central to #MeToo, mentioned in their comments. Instead, their discussions primarily pivot around the hashtag itself (e.g., “The MeToo movement is ridiculous”, “MeToo is a hoax against men?”). By contrast, comments from respondents in the control group topically centered around sexual harassment or assault (e.g., “Some people are afraid to report any **harassment** or **assaults**”, “It is quite alarming that **sexual harassment** and **assault** occur at such a high rate”, “men...experience **sexual harassment** as well and not just the women”). In fact, nearly all of the comments in the control group either mention sexual harassment, experience, or assault in their reaction to the news post.

4. Emotionally Extreme Expressions

Respondents from both groups react to the same details shown in the news post; however, the interpretation as well as the language used to interpret the content are vastly different between the two groups. Comments from the hashtag group refer to the statistics as “load of crap” or “load of shit” while reactions from the control group are much more nuanced and subdued: “My first reaction is that these numbers are really high” or “Frankly, these numbers seem low to me”. Furthermore, the linguistic style of comments from the hashtag group are more emotionally intense, marking extreme reactions towards the news content (e.g., “43%of men?!?!?!”). Even those who seem to be in favor of the hashtag movement use aggressive language to convey support of the movement and refer to those against it as “You idiots”, claiming, “there's a reason why [#MeToo] f****ng exists, dimwits!!”.

Furthermore, what is ironic is that the absence of #MeToo in the news content actually promotes/solicits the intended goal of the hashtag movement. In reaction to the news post, one commenter from the control group remarks, “Giving a platform and voice to victims via social media is a great way to share one’s experience when one is too uncomfortable to do so publicly.” Here, the commenter highlights in essence, the purpose of the #MeToo movement and how it is positively affecting survivors and raising much-needed awareness. By contrast, when the news content is framed with the hashtag, a respondent criticizes the online movement describing how “Rehashing incidents years later on a public forum just results in witch hunts”.

5. Distrust in Interpretation and Perception of Content Credibility

Another interesting difference between the two groups is the willingness to engage on topics associated with the online movement. In the hashtag group, people repeatedly mention the hashtag

without substantially engaging with relevant social issues. When such behavior is replicated on social media, this may amplify how much one is exposed to a constant, yet substance-wise, empty reiteration of the hashtag:

“#MeToo topic is turning into something like the Kardashians. You can’t look at the news without both of them headlining things”.

As a result, for this respondent, even though “It is an important issue”, she remarked, I am getting tired of seeing it over and over”. On the other hand, in contrast to the apathy expressed by those in the hashtag group (e.g., “I don’t care about this”), control group participants expressed more willingness to engage on relevant social topics (e.g., “I really want to understand more about this phenomenon and why women are feeling this way”). In fact, for some, the news post serves as the basis for prompting further action: “Maybe we need to teach children at a younger age what is and what isn’t appropriate to say and do to another person”.

Furthermore, the presence of hashtags is perceived as undermining the content credibility of news posts. Comments from the hashtag group expressed suspicion towards the news post as evident in claims, such as “I don’t believe this post is backed with any real knowledge or fact” and “This article reads “FAKE NEWS”. By contrast, comments from the control group were less skeptical: “I find the information listed in the article to be non-biased.” What is particularly interesting here is that these comments tended to reflect opinions on the actual content of the news story rather than blanket assumptions about the story’s bias or plausibility: “I like that they are showing the statistics of the percentage of men that experience sexual harassment as well and not just the women”.

5.3.8 Impact of Political Hashtags Across the High vs. Low Facebook Intensity Users

1. Repeated Exposure to Political Hashtags May Increase Partisan Reaction to News Posts

Our analysis of comments in RQ2 indicated that respondents from the hashtag group who criticized the partisan tone of news posts, frequently mentioned being “tired of” or “sick of” seeing such posts “that seemed to be everywhere”, denoting the pervasiveness of hashtagged content. In this vein, we examine whether repeated exposures to political hashtags may influence perception of partisan biases as well. Assuming those who use Facebook more frequently are likely to have a higher chance of being exposed to these social media hashtags, we compared responses around perception of partisan bias across different levels of Facebook use - between those who were high (use Fb several times per day) versus low (less than once per week) intensity users.

We visualize this difference in Figure 5.5, which shows an interesting difference between the low and high-intensity users in terms of perception of partisan bias towards hashtagged news posts¹⁷. The distribution of high-intensity users in the hashtag group is visibly more skewed to the right compared to that of low-intensity users.

Furthermore, among those who use Facebook less than once per week (Figure 5.5, left), the distribution of responses between the hashtag and the non-hashtag groups are similar, meaning perception of partisan bias is not really affected by presence of political hashtags. However, for those who use Facebook several times per day (Figure 5.5, right), the distribution of responses for participants who were shown hashtags (blue) is more skewed towards the right, in other words,

¹⁷ For this KDE, we only used sample of high and low intensity Facebook users who were either shown hashtags or no hashtags in their news posts. Those who were shown positive or negative comments were excluded.

perceive the news post as more partisan, compared to the control group (red), exemplified by the shaded gap.

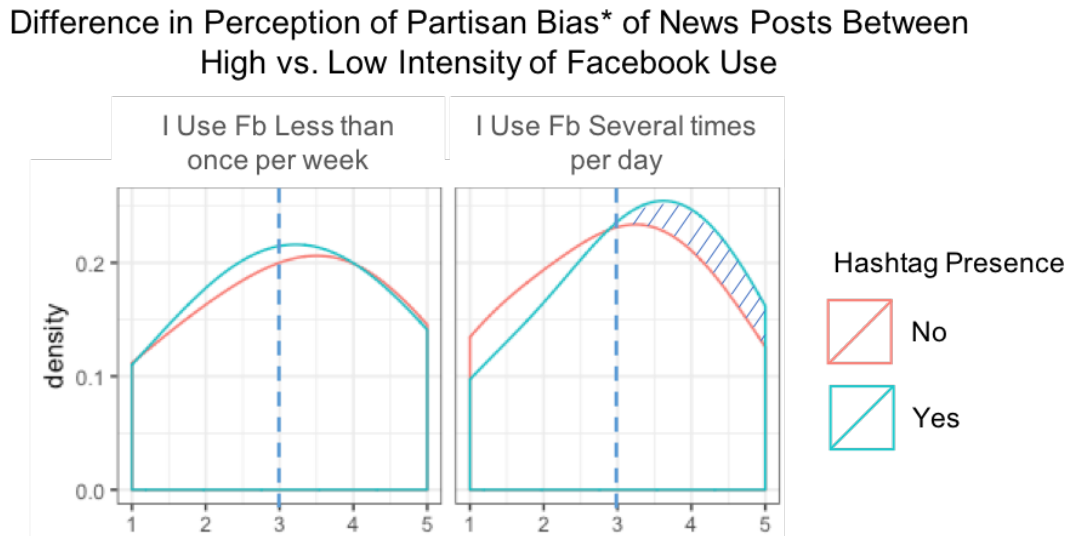


Figure 5.5. Kernel Density Estimate (N=894) Comparing Individual Differences in Perception of Partisan Bias Towards News Posts Between Low (Less Than Once per Week) and High Intensity (Several Times per Day) Facebook Users When Hashtags Are Present (Blue) vs. Absent (Red).

In fact, an independent-samples t-test indicated that while the presence of hashtags did not significantly affect the perception of partisan bias among low-intensity Facebook users, there was a statistically significant difference between the hashtag and control groups among high-intensity users. Results show that across high-intensity Facebook users, there is a significant difference in perception of partisan bias between the control (M=2.956, SD=1.260) and hashtag groups (M=3.275, SD=1.250); $t(758) = -3.225, p < .001$.

2. Repeated Exposure to Political Hashtags Decrease Engagement Around News Content

Among high-intensity Facebook users from the hashtag group, respondents commonly expressed exasperation around “hearing about any movements and us labeling them with some hashtags to just bring people out and to get attention!” (Male, 26, Politically Moderate). Similarly, in reaction to a news post containing #BlackLivesMatter, one participant remarked that despite the positive intentions of the hashtag movement (e.g. “helping people of color”), perpetuated exposure turned people off:

“Glad that the movement is helping people of color, but I do feel like, with anything, if you shove it in peoples' faces long enough, they are going to get annoyed” (Female, 21, Very Liberal).

Such repeated exposure to political hashtags can lead to a sense of saturation and the false drumming up of interest in hashtag movements. From the perspective of another commenter who uses Facebook several times a day, such interest is perceived as forced and overstated.

“Honestly, social media is generating something akin to false positivity, or inflated enthusiasm. I am so entirely sick of this NPR American bullshit. I am very liberal; I am not racist or anything but it’s just too much. If I see another post on the Internet about someone being a “Strong Woman”, I’m going to lose my fucking mind. No one is benefiting from this. We are not really more “informed” as a society now that the internet is here... less information and more of the same opinions on the same side of the line...As an intellectual I cannot cosign this mentality” (Female, 35, Liberal).

Here, the respondent who identifies as liberal is commenting on a news post hashtagged with #BlackLivesMatter. This is a particularly striking statement, in that this commenter reports being inclined to agree with the social issue, but is so turned off by the hashtag that she is no longer

sympathetic to the issue or the movement. If anything, the language in this comment sounds like someone who would consider themselves an opponent rather than an ally.

5.4 Discussion

5.4.1 How Political Hashtags Affect Identity Politics, Critical Dialogue and Social Movements

HCI work have shown that users from different groups will interpret political hashtags differently based on their social identities, such as race, gender, and even profession (Hadgu et al., 2013; Jackson & Foucault Welles, 2016; Kitzie & Ghosh, 2015; Stewart et al., 2017). Studies and news reports also show that solidarity and backlash around political hashtag movements are strongly tied to multiple identities (Jackson & Foucault Welles, 2015; Rho et al., 2018). Hence, dialogue framed with political hashtags can easily manifest as a struggle for power in controlling discourse around moralized issues between different racial and political groups who interpret the hashtag differently (Carney, 2016; Hadgu et al., 2013; Jackson & Foucault Welles, 2015).

Our findings show that respondents who were exposed to news posts framed by hashtags found the news significantly more partisan and controversial than those who did not see hashtagged content. Comments from respondents also demonstrate that news content framed with political hashtags register as issues strongly pertaining to identity politics. This implies that political hashtags tend to tribalize social issues, catering to one side or the other. This is problematic, because research shows that when competing tribes are so vividly identified, it makes the sense of the “other” even stronger (Little et al., 2014), reinforcing rather than bridging different perspectives across the spectrum (Sunstein, 2018). The capacity to listen to those who agree with oneself is a critical aspect of

constructive civil discourse. Political hashtags, however, seem to make it harder for people to find common-ground perspectives around social issues embodied by them.

Relatedly, scholars in political sociology have found that partisan identification tends to drown out attention to details around policy issues (Huddy et al., 2015). People who perceived the news as more partisan (due to the presence of political hashtags) reported that they also perceived the news content as less important and were less inclined to know more about related social topics. These findings suggest that in the long-run, political hashtags may ultimately polarize and intensify political views, weakening the quality of democratic discourse on important social issues.

Social movement theory further suggests that in order for social movements to be successful (e.g., effecting change in social discourse and policy), activists need to mobilize a broader audience beyond “passionate enthusiasts”(Benford & Snow, 2000; B. Edwards & McCarthy, 2007). In other words, impact needs to spread beyond those initially aligned with a movement. However, our findings show that politically moderate people are turned off by political hashtags. Compared to news posts without hashtags, these “middle of the road” people perceive hashtagged news posts as more partisan and employed negative and emotionally charged expressions in their open-ended comments. Respondents in this group not only reported a lack of willingness engage on the news content framed with hashtags, but also questioned the credibility of what they saw in the news post – further suggesting that the hashtags may be an obstacle to mobilizing moderate groups around a social issue.

Hence, prior work that operationalized the number of frequently co-occurring hashtags (e.g., #BlackLivesMatter, #whatiswrongwithoursystem) to show that people develop deeper and more personalized connections to key social issues over time (Booten, 2016) may be exclusively

portraying those who were intrinsically inclined to engage with the hashtags (and relevant social issues) in the first place. As such, political hashtags may in the long-run be detrimental for activists to gain a wider more universal appeal for their cause.

Social movement theorists studying social media posit that SNS can dramatically speed up the awareness in the “preliminary stage” of social movements (Blumer, 1969; Tilly, 1978). This is possible, because through SNS artifacts like political hashtags, “issue awareness can spread at the speed of a click, with thousands of people across the globe becoming informed at the same time”(Little et al., 2014). However, our findings add a layer of complexity to these prior insights. Does the rapid awareness enabled by political hashtags across social media lead to initial mobilization that may backfire over time? Further work should investigate possible tipping points for hashtag effects and explore the relationship between early exposure/mobilization and longer term saturation/disinterest.

Our results indicate that repeated exposure to political hashtags may deter people from wanting to know more about key social issues related to the hashtag. Those who use Facebook frequently are more influenced by hashtags in their perception of partisan bias of news posts compared to low-intensity Facebook users. Respondent comments from the hashtag group also directly state that repeated exposure to hashtags can become a blanket turn off. These findings suggest that research should rethink methodological techniques that quantify success and engagement through hashtags’ frequency. Findings from our work suggest that such quantified approaches can lead to a skewed understanding of social media’s influence on democratic engagement and discourse.

5.4.2 Limitations

Prior literature shows that the political nature of media source bias might influence commenting behavior (Rho et al., 2018). For our data source, we chose only two publishers – NYT and NPR. In selecting news publishers with high factual reporting (Glader, 2017) and consistent posting of topically diverse articles on their Facebook page, these two mainstream news publishers were most suitable for the purpose of our study. Yet, although relatively close to mainstream, both NYT and NPR are considered left-centered news publishers (Media Bias Fact Check, 2018c, 2019). Hence, these media sources may not be representative of news outlets consumed by more politically conservative participants. This could potentially impact our findings given that participants who identify as politically conservative may have presumptions about these news outlets in the first place. To partially address this issue, we focused on understanding reactions from those who identified as politically moderate through RQ2 in our work.

5.4.3 Conclusion

Our work contributes to the current literature on political hashtags by elucidating the implicit effects of hashtags on passive consumers of news media. People found the news more partisan and controversial when hashtags were included. Overall, negative perception through partisan bias and topic controversy is the mechanism through which people perceive the hashtagged news posts to be less socially important and are less motivated to know more about related social issues. Furthermore, compared to news posts without political hashtags, news with hashtags were perceived significantly more partisan among those who use Facebook more often, as well as those who identify as politically moderate. There were also significant differences in discourse patterns around how politically moderate respondents engaged with the news content in their comments between the hashtag and control groups.

CHAPTER 6

Study 3: Influence of Political Hashtags on the Quality of Democratic Discourse

In this work, we investigate whether and how the presence of political hashtags in social media news articles influences the way people discuss news content. Specifically, we examine how political hashtags in news posts act as a design characteristic that affects the quality of online discourse. We use a randomized control experiment to assess how the presence versus absence of political hashtags (particularly the most prevalently used #MeToo and #BlackLivesMatter) in social media news posts shapes discourse across a general audience (n=3205). Key findings show differences in topical focus, emotional tone of discourse, and rhetorical styles between commenters who were shown news posts with political hashtags versus those shown news posts without the hashtags. Compared to the control group, those shown hashtagged news posts heavily focus on the politics of the hashtag, use more words associated with fear, anger, and disgust in their comments, and exhibit black-and-white rhetoric and less emotionally temperate expressions in their arguments.

6.1 Research Questions

To understand how political hashtags affect the quality of online discourse, we address the following research questions:

How does the presence of political hashtags in news posts influence:

- Research Question 1: the topic of discourse?
- Research Question 2: the emotional tone of discourse?
- Research Question 3: the rhetorical style of discourse?

Differences in level of topic focus (Davies & Gangadharan, 2009; Graham & Witschge, 2003; Stromer-Galley & Martinson, 2009; Thimm et al., 2014), degree of negative sentiment (Baumeister et al., 2001; Cavazza & Guidetti, 2014; Stieglitz & Dang-Xuan, 2013a, 2013b; Utych, 2018), and rhetorical behavior (Graham & Witschge, 2003; Min, 2007; Rho et al., 2018; Thimm et al., 2014) are known to affect online civil discourse on social and political issues. Hence, we focus on these three factors to examine discourse behavior between people responding to hashtagged news content and those responding to news posts without hashtags.

6.2 Analysis

Research Question 1: Impact of Political Hashtags on the Topic of Discourse

To understand the differences in topical content between comments on news posts with and without political hashtags, we used Pointwise Mutual Information (PMI) to identify topically important keywords. Commonly used in statistical analysis of textual data (Biber et al., 1998; Y. Yang & Pedersen, 1997), PMI allows researchers to identify words that co-occur together more often than random (Church & Hanks, 1990), thereby providing insight into the topical content that characterizes the corpus of texts (Manning & Schütze, 1999). To ensure consistency of findings, we crosschecked our PMI results with n-gram analyses.

Research Question 2: Impact of Political Hashtags on the Emotional Tone of Discourse

To understand whether the presence of political hashtags influences the emotional tone of comments, we calculated the sentiment of the comments using sentimentR. Unlike other sentiment packages, sentimentR considers valence shifters (negators, amplifiers, de-amplifiers, and adversative conjunctions) (Cunha et al., 2014). While other sentiment analysis tools classifies “I am

not good” as positive due to the adjective “good”, SentimentR recognizes the inversion of “good” and classifies the sentence as negative (Rinker, 2019). This increases sentiment detection accuracy in analyzing the polarity of comments at the sentence- rather than the word-level, (Rinker, 2019).

After obtaining the sentiment scores for each comment, we conducted regression analyses with the scores for both positive (joy, trust, surprise, anticipation) and negative sentiments (anger, fear, disgust, sadness) as dependent variables. The effect of hashtags was only significant for negative sentiments, specifically anger, fear, and disgust. Therefore, we only report regression results for these three sentiments. We included gender (Cunha et al., 2014), political view (Rho et al., 2018), and comment valence (Glenski & Weninger, 2017; E.-J. Lee, 2012) as control variables in our models to eliminate potential confounding effects.

Research Question 3: Impact of Political Hashtags on the Rhetorical Style of Discourse

To compare how presence vs. absence of political hashtags shapes rhetorical style, we conducted discourse analysis (Gee, 2014) on all comments (across all experimental conditions and articles) written by those who identified as politically moderate. We first approached our primary data through a grounded inductive coding process (Strauss & Corbin, 1998). The first author used memoing and mapping techniques to identify and organize high-level themes and patterns in rhetorical style. We then used axial coding (Strauss & Corbin, 1998) to understand how rhetorical patterns related to key themes. Finally, we performed discourse analysis (Gee, 2014) to analyze the language of comments that served as evidence for the influence of political hashtags on people’s rhetorical style when commenting on news content.

6.3 Results

This work reveals the power of hashtags in framing how an audience perceives the content of a news story. The presence or absence of political hashtags in the headline of a news story engenders significant differences in how commenters react to hashtagged vs. hashtag-absent news content on social media. By analyzing respondents' commenting behavior we are able to gain insight into the ways in which an article is experienced topically, emotionally, and rhetorically. First, compared to the respondents in the control group, those shown news post with hashtags focused more on assumed political biases than the social topic of the article (RQ1). Second, the presence of political hashtags in news posts emerged as a significant predictor of anger, fear, and disgust sentiments across comment responses (RQ2). Finally, there were key differences in rhetorical behavior between the hashtag and control groups with those in the latter group projecting self-reflection and perspective-taking and the former exhibiting black-and-white rhetoric in their comments (RQ3).

6.3.1 Participants

A total of 3205 participants (47% female, mean age 36.4) completed the experiment with an average of 534 participants for each scenario (Table 6.1). More demographic details are in the Table 6.2. In total, workers contributed 3205 comments (average of 21 words written per post).

Table 6.1. Study Participant Sample Breakdown (n=3205).

	Hashtag	No Hashtag
No comments	559	520
(+) comments	539	535
(-) comments	526	526

Table 6.2. Study 3 Demographic Breakdown of Survey Participants (n=3205).

	Demographic Traits	Freq.	%
Gender	Male	1794	56%
	Female	1374	43%
	Non-Binary	22	1%
	Prefer not to answer	15	0%
Age	18-27	770	24%
	28-37	1240	39%
	38-47	610	19%
	48-57	353	11%
	58-67	187	6%
	68-77	42	1%
	78-87	3	0%
Political View	Extremely Liberal	348	11%
	Very Liberal	722	23%
	Slightly Liberal	458	14%
	Moderate, Middle of the Road	658	21%
	Slightly Conservative	386	12%
	Very Conservative	464	14%
	Extremely Conservative	169	5%

6.3.2 Impact of Political Hashtags on the Topic of Discourse

1. Focus on Social Issues Drowned Out by Hashtag Politics

After tokenizing the comments and removing stop words, we performed pointwise mutual information, narrowing down to keywords that occurred at least three times (Manning & Schütze, 1999) in each corpus. Figures 6.1 – 6.4 list identified keywords with the top PMI scores based on the corpus of comments from the control and conditional groups for the two political hashtags. In Figure 6.1, topically important keywords with the highest PMI scores suggest that the comments made in response to news post (about charter school reforms, corporate response to race relations, and safe spaces on campuses, etc.) containing #BlackLivesMatter are narrowly focused on the hashtag itself without substantive reference to the topical content of the article, as evidenced by PMI keywords such as “life matters”, “lives matter”, “black lives”, “blacklivesmatter movement” and “matter color”.

Keywords from the comments in the control group (Figure 6.2) on the other hand, focus more broadly on race in general, suggested by “race relations”, “racial discrimination”, and “racial issues”. However, control group comments do not exclusively focus on race in and of itself, but also on the main subject of the article in which race serves a larger context. For example, keywords with top PMI scores for the control group directly refer to the core topic of the article (e.g., “safe space”, “education system”, “local issues”), even while the headline suggests that this is a story in which race is a major theme. By contrast, keywords identified from the hashtag group comments suggest that the hashtag drowns out a more nuanced understanding of the various salient aspects of the article. Instead, comments are dominated either by the hashtag itself or language solely focused on racial politics (e.g. “color”, “black”).

To cross-check our PMI results for consistency, we performed n-gram analyses. The top three trigrams with the highest TF-IDF weights for the hashtag group were “black lives matter” (0.031), “lives matter movement” (0.028), and “lives matter crap” (0.024). For the control group, “cultural debate” (0.009), “race debate” (0.009), and “police killing” (0.005) had the highest TF-IDF weights, corroborating our findings from the PMI analyses.

2. Greater Partisan Focus in Discussion of News Content

PMI results comparing the absence vs. presence of #MeToo in the headline of four different news articles indicate a high degree of overlap in how people make sense of a news post with or without the #MeToo hashtag. Nearly half of the topically important keywords between the hashtag (Figure 6.3) and the control (Figure 6.4) groups overlap. These keywords include: “sexually harassed”, “sexual assault”, “sexual harassment”, “black women”, and “women color”.

However, we find a key significant difference in how commenters react to news posts that include versus exclude #MeToo in the headline. The two keywords with the highest PMI rating in the hashtag group were “liberal-leaning” and “left-wing.” This implies that commenters shown news posts with #MeToo in the title perceive the content as partisan. In contrast, the keyword in the control group with the highest PMI rating was “national narrative.” Interestingly, the term “national narrative” is in direct opposition to “liberal leaning”, denoting a broader, more inclusive, and politically neutral reaction towards the news content. Similarly, bigrams with the highest TF-IDF weights for the hashtag group were “left-wing” (0.01125) and “liberal leaning” (0.01125). For the control group, “national narrative” had the highest TF-IDF weight.

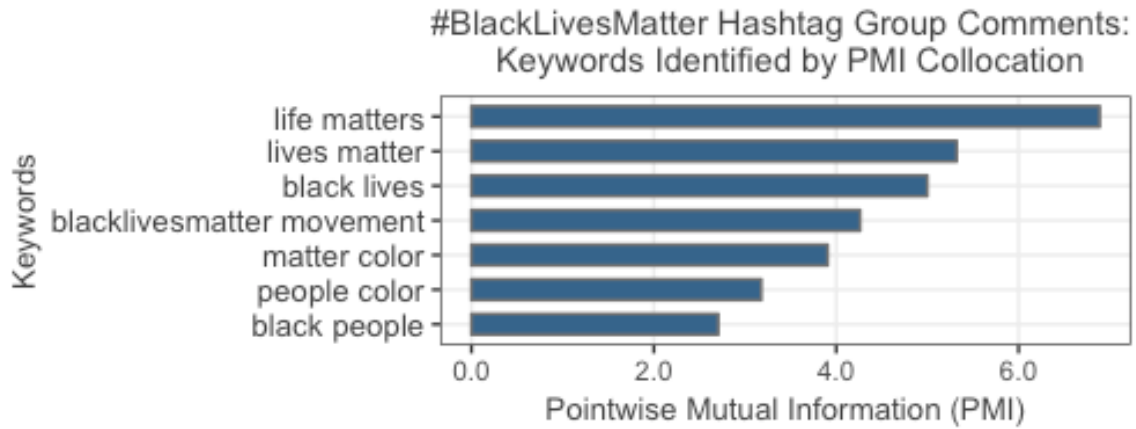


Figure 6.1. Topically Important Keywords Identified by Pointwise Mutual Information (PMI) Analysis of Comments in Response to Facebook News Posts Containing the #BlackLivesMatter Hashtag.

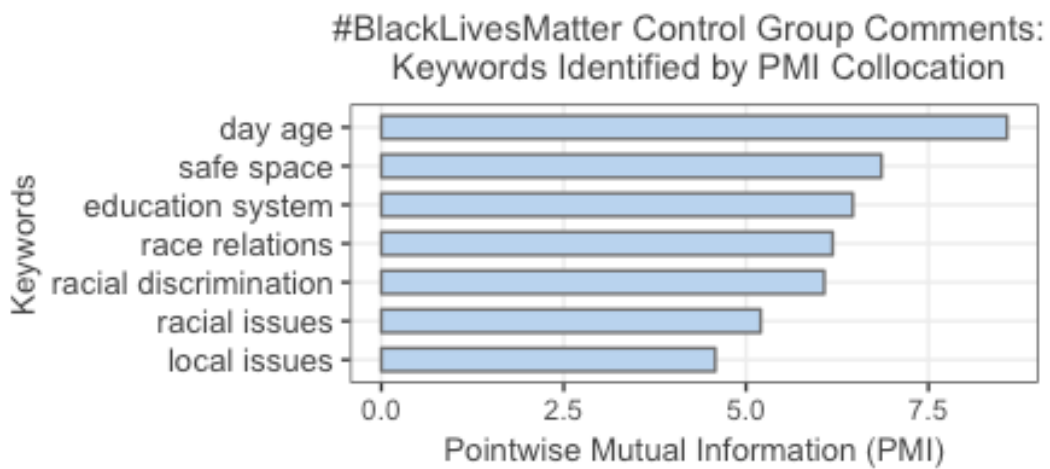


Figure 6.2. Topically Important Keywords Identified by Pointwise Mutual Information (PMI) Analysis of Comments in Response to Facebook News Posts Excluding the #BlackLivesMatter Hashtag.

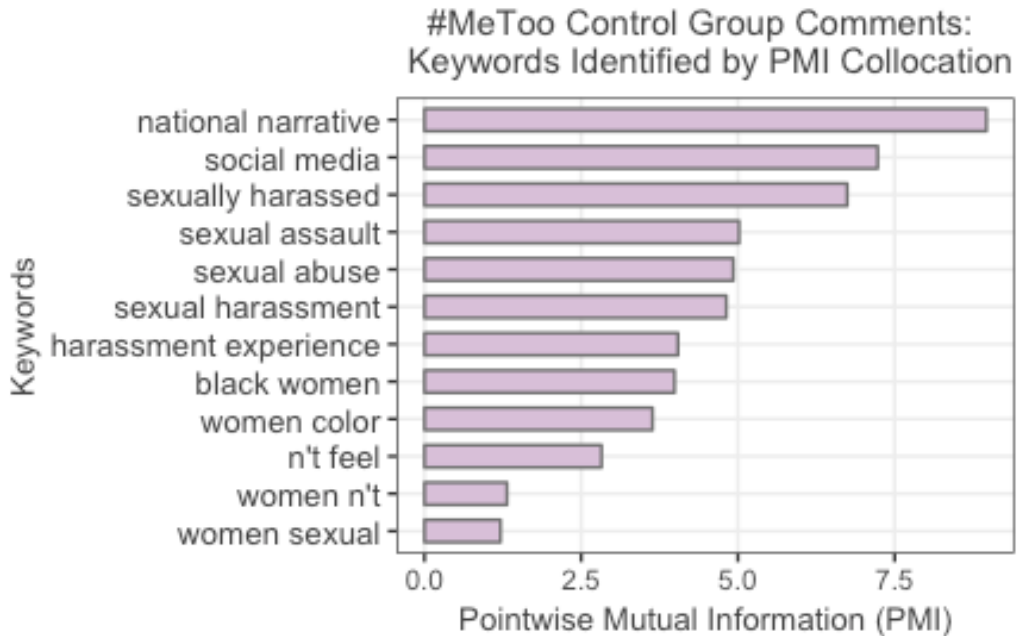


Figure 6.3. Topically Important Keywords Identified by Pointwise Mutual Information (PMI) Analysis of Comments in Response to Facebook News Posts Containing the #MeToo Hashtag.

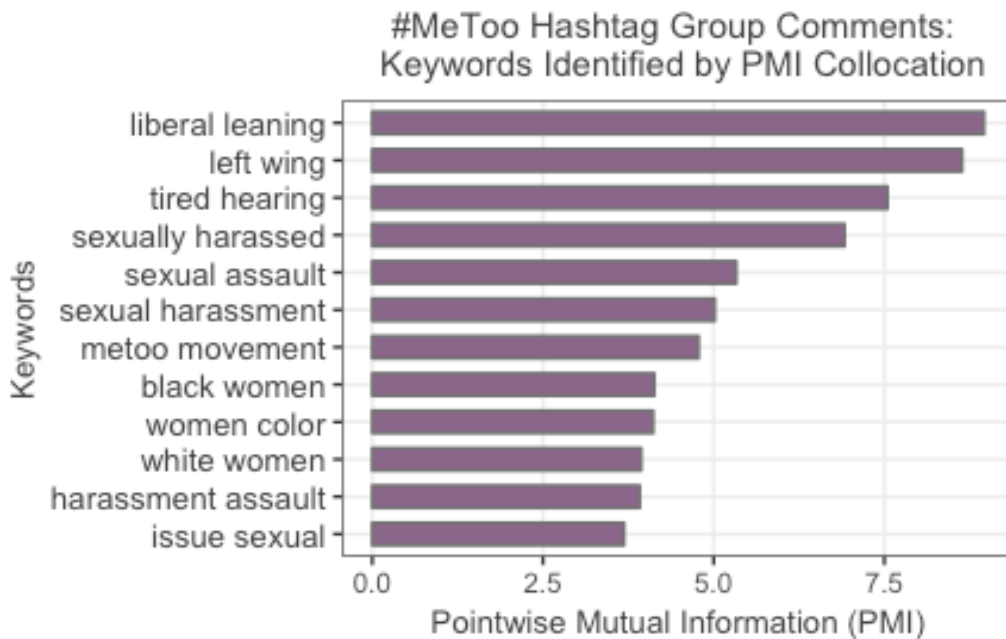


Figure 6.4. Topically Important Keywords Identified by Pointwise Mutual Information (PMI) Analysis of Comments in Response to Facebook News Posts Excluding the #MeToo Hashtag.

6.3.3 Impact of Political Hashtags on the Emotional Tone of Discourse

1. Increase in Anger, Disgust and Fear Sentiments in Discourse

Results from our linear regression models (Tables 6.3-6.5) demonstrate that when political hashtags are included in news posts, people respond with significantly more words lexically associated with anger, disgust, and fear in their comments (* $p < .05$; ** $p < .01$; *** $p < .001$).

The regression output in Table 6.3 shows that the presence of political hashtags in news posts is significantly associated with angrier comments (a .114 standard deviation increase in lexical polarity associated with anger). Likewise, Tables 6.4 and 6.5 respectively show that commenters from the hashtag group exhibit greater sentiments of disgust (a .066 standard deviation increase) and fear (a .073 standard deviation increase) in their expressions.

Table 6.3. Linear Regression Model Showing How the Presence of Political Hashtags in News Posts Affects Anger Sentiment in Comments.

Anger	B	β	SE B
Hashtag Presence	0.012***	0.114***	0.002
Comment Valence	-0.001	-0.009	0.001
Political View	0.002*	0.051*	0.001
Male	0.002	0.017	0.002
Intercept	0.003	0.000	0.003
Adjusted R ² = 0.014			

Table 6.4. Linear Regression Model Showing How the Presence of Political Hashtags in News Posts Affects Disgust Sentiment in Comments.

Disgust	B	β	SE B
Hashtag Presence	0.007**	0.066**	0.002
Comment Valence	0.001	0.018	0.001
Political View	0.001*	0.044*	0.001
Male	0.000	0.003	0.002
Intercept	0.004	0.000	0.003
Adjusted R ² = 0.005			

Table 6.5. Linear Regression Model Showing How the Presence of Political Hashtags in News Posts Affects Fear Sentiment in Comments.

Fear	B	β	SE B
Hashtag Presence	0.008***	0.073***	0.002
Comment Valence	0.000	-0.006	0.001
Political View	0.001	0.024	0.001
Male	0.011	0.000	0.003
Intercept	0.008***	0.073***	0.002
Adjusted R ² = 0.005			

Overall, people shown news posts with political hashtags react with greater anger, disgust, and fear in their comments than those shown the same article without the political hashtag. Furthermore, political view significantly contributes to an increase in anger (a .051 standard

deviation increase) and disgust (a .044 standard deviation increase) sentiments across the comments. Compared to those identified as politically liberal, comments from those who are more politically conservative are characterized with greater anger and disgust. Gender and comment valence have no effect on the three negative sentiments.

6.3.4 Impact of Political Hashtags on the Rhetorical Style of Discourse

Findings from our discourse analysis show key differences in rhetorical patterns employed by respondents who commented on news posts containing hashtags and those who commented on news posts without the hashtags. To better present our findings, we showcase an illustrative example by taking a deep dive into the comments from one news post about education reforms and race in charter schools. We show the hashtag and hashtag-absent versions of the news post in Figures 6.5 and 6.6 (the original news post is shown in Figure A.7, Appendix). In Table 6.6, we show comments from both the hashtag (commenters C1 to C8) and control groups (commenters C9 to C16). As political view is shown to affect reaction towards hashtagged content (Rho et al., 2018), we only show comments from participants identified as politically moderate.



Figure 6.5. Experimental Condition Facebook News Post With the #BlackLivesMatter Hashtag.



Figure 6.6. Control Condition Facebook News Post Without the #BlackLivesMatter Hashtag.

Table 6.6. Comment Responses to News Posts With and Without #MeToo Hashtags as Shown in Figures 6.5 and 6.6.

Comment responses to news post <i>including</i> hashtags (Figure 6.5)		Comment responses to news post <i>excluding</i> hashtags (Figure 6.6)	
C1	<i>Why don't alllivesmatter?</i>	C9	<i>A topic that most of us don't want to talk about, but is so important to understand.</i>
C2	<i>The article is politically biased due to a skewed perspective.</i>	C10	<i>Race issues are important and should be discussed, not blindly swept under the rug as if nothing was really wrong.</i>
C3	<i>Blacklivesmatter is a crucial topic that needs to be discussed especially as a mother to a white son.</i>	C11	<i>Everyone should have a chance, I'm sure there are issues that need to be addressed, but they need to speak up about it.</i>
C4	<i>Oh the poor black people! Education is straight forward, you either excel or you don't. It's based on merit not race or sex or religion.</i>	C12	<i>I think kids these days should be taught that we are all created equal and therefore should be treated as such, regardless of race.</i>
C5	<i>Many people are not afforded the same chances in life, don't be a fuckwit. If you are born rich in New York your life will be easier than if you are born poor in Oakland. Period.</i>	C13	<i>I think that the main problem when it comes to access to education and race is that children who live in poorer neighborhoods have to attend schools with less funding.</i>
C6	<i>I feel like there is way too much focus on the racial divide in America, and it will only make it worse. It creates a toxic and uninviting atmosphere for discussion.</i>	C14	<i>I think it makes some good points. I think all children of all ability levels, races, ethnic groups should get the opportunity to have a good public education which helps them meet their potential.</i>

C7	<p>Race should not continue to be an issue in this country. People just need to get over themselves and treat everyone the same whether it's education, employment, the criminal system, whatever! Of course, blacklivesmatter; so do white lives, Asian lives, Hispanic lives, etc., etc., etc. Quit making everything about race already!</p>	C15	<p>First off, I don't usually engage in Facebook arguments or debates. However, I am a firm believer that a person can better themselves, but there are instances that prevent individuals from progressing. It's easy to point faults in people's downfalls, but the truth is, nobody really knows what it's like to be in another person's shoes unless you are that other person.</p>
C8	<p>Black lives absolutely matter in the education sector and field. Institutionalized racism is prevalent still to this day and will continue to be for a long time.</p>	C16	<p>I think that discussing racial issues in education only works to make it more obvious, and thus worsening tensions. Once you are aware, you notice it more – that's human nature. But once you notice it, it opens the floodgates for claims of racism which I think we have all had enough of. People are already touchy enough – I do not by any means see the necessity for introducing it in spaces in schools with children.</p>

1. Grounding Arguments in the First-Person Perspective

One prominent difference in rhetorical behavior is the use of first-person pronouns (I/ we) by participants commenting on news posts without the hashtags. Strikingly, nearly all commenters from the control group, as opposed to those in the hashtag group, responded to the article using first person pronouns as highlighted in the table.

Bringing in the first-person perspective in text rhetorically anchors the discourse to the present moment (Hartung et al., 2016). Further, employing the first-person language is an effective marker of cognitive processing (Ditman et al., 2010), perspective-taking (Hartung et al., 2016; Papeo et al., 2011), and a heightened sense of authenticity (through the ownership of one's words) (Malone, 2014; Tulloch, 2014). Prefacing arguments with phrases, such as "I think", commenters from the control group tacitly suggest reflection and consideration of personal values (Tulloch, 2014) into the reasoning behind their words. Take the comment from the control group below:

First off, I don't usually engage in Facebook arguments or debates. However, I am a firm believer that a person can better themselves, but there are instances that prevent individuals from progressing. It's easy to point faults in people's downfalls, but the truth is, nobody really knows what it's like to be in another person's shoes unless you are that other person. (C15)

Here, the commenter does not explicitly state whether she is for or against discussing racial issues in education. Rather, she is taking a considered personal stance. The commenter is clearly articulating in her private beliefs ("I'm a firm believer that a person can better themselves"), but she also acknowledges that there may be exceptions to her general opinion ("but there are instances that prevent individuals from progressing"). The commenter further recognizes her own fallibility, suggesting that it is easy to be critical of those you do not know and actively encourages perspective-taking. Such rhetorical style, voiced in the first-person, suggests reasoned individual opinion and respect for different perspectives. In so doing, this comment does not alienate other opinions about a complex and loaded topic

that “most of us don’t want to talk about” (C9). One can imagine how such a commenting style would lead to more civil discourse.

2. Black-and-White Rhetoric Fueled by Hashtag Parlance

By contrast, there is almost no first-person language in the comments from the hashtag group. The language in these comments is less reflective, less personal, and less open to difference. Instead, the majority of comments are strong declarative statements that do not leave room for multiple opinions or experiences. For example:

Race should not continue to be an issue in this country. (C7)

The black-and-white rhetoric shown in the example above effectively serves to eliminate gradations in perspectives, thereby narrowing the scope of discussion to an either-or logic. In another example, C4 from the hashtag group is adamant that,

Education is straight forward, you either excel or you don't. (C4)

Here, the commenter distills the complexity of the topic to a choice between two alternatives, which makes it easier to criticize (or in this case, sarcastically victimize) those who may potentially disagree with her: “Oh the poor black people!” Interestingly, such unequivocal rhetoric is often expressed through arguments that pivot around hashtags: “Black lives absolutely matter...” (C8) or “Why don’t all lives matter?” (C1). In fact, commenters from the hashtag group tend to employ language focused on the politics of the hashtag, corroborating insights from the PMI results.

For example, commenters shown news posts with hashtags tend to speak in hashtag parlance, whether they are in favor of incorporating discussion of race in education:

“Blacklivesmatter is a crucial topic...” (C3)

or are against it:

“Of course, BlackLivesMatter; so do white lives, Asian lives, Hispanic lives, etc., etc., etc.” (C7)

Here, the relevance of race in education is reduced to a reactionary debate argued through the language of hashtags focusing on racial and identity politics (“white lives, Asian lives, Hispanic lives”) rather than the subject matter (e.g. education) discussed in the context of the political hashtag.³

3. Same Idea Conveyed Through Different Emotions

Even when we see similarity in content and perspective, the emotional delivery of arguments between comments from the hashtag and control groups varies dramatically.

For example, C13 from the control group brings the subtopic of socioeconomic factors into the discussion of education and race:

I think that the main problem when it comes to access to education and race is that children who live in poorer neighborhoods have to attend schools with less funding. (C13)

Here, the commenter employs neutral language (“I think...when it comes to...”) to introduce an angle he finds relevant to the issue portrayed in the news post. By contrast, while C5 from the conditional group also finds socioeconomic background to be a relevant topic, her reaction to the same news post (with the hashtag) is far more loaded and inflammatory:

Many people are not afforded the same chances in life, don't be a fuckwit. If you are born rich in New York your life will be easier than if you are born poor in Oakland. Period. (C5)

Interestingly, both C5 and C13 are discussing the importance of opportunity: “chances in life” (C5) and “access to education” (C13). In fact, the reasoning behind their respective arguments is nearly identical – how socioeconomic factors impact opportunities – as illustrated by “born rich in New York [vs.] born poor in Oakland” (C5) and “poorer neighborhoods...schools with less funding” (C13). The difference between the two commenters lies in the emotional delivery of their arguments. C13 from the control group invites dialogue with the framing words, “I think” while C5 attacks those who may not agree with her, preemptively warning such dissenters, not to be a “fuckwit”. Expressions characterized with such high levels of emotional aggression discourage dialogue and constructive debate (Rho et al., 2018).

6.4 Discussion

As previously stated, the design input and decisions that make up the conditions of deliberation affect discussion quality . In return, the deliberative quality of conversations shapes the outcomes of discourse (Friess & Eilders, 2015). In our work we demonstrate how

the design input of political hashtags shapes the deliberate quality of online discussions around news stories on pressing social issues. Examining this link between design input and discourse quality may allow us to retroactively understand the third dimension in Friess and Eilders' framework or the outcome of discourse surrounding the two most well-known political hashtags.

6.4.1 Outcome of Discourse Surrounding Political Hashtags

In the initial phases of the #MeToo and #BlackLivesMatter movements, the surrounding online conversations were generally received with widespread enthusiasm (Anderson, 2016; Park, 2017). The sheer volume of online discourse around these political hashtags, as manifested through millions of social media posts, popular discussion forums, and comment threads of mainstream articles signaled a desire for a much-needed conversation on important societal problems that were finally brought to attention (Anderson, 2016; Hanrahan et al., 2017; Park, 2017) .

However, after these political hashtag movements came to national and global prominence, most Americans reported an unfavorable view of both movements (Horowitz & Livingston, 2016; The Economist, 2018). According to a national survey conducted one year after the #MeToo movement, people's opinions have shifted against #MeToo survivors (The Economist, 2018). Similarly, several years after the movement first started, the majority of Americans found #BlackLivesMatter to be extremely controversial and unproductive (Horowitz & Livingston, 2016; The Economist, 2018). In other words, over time people have become turned off by these political hashtags and significantly less motivated to engage or to know more about related social issues.

This directly contrasts with what is considered a productive outcome of discourse, the third dimension of Friess and Eilders' design and deliberation framework. A productive outcome of discourse engenders better knowledge of political topics and motivation to participate in and learn more about social issues (Friess & Eilders, 2015; X. Zhou et al., 2008). Our findings provide insights as to why this outcome has not occurred around issues framed by viral political hashtags.

6.4.2 Lexical Focus on Hashtags Minimizes Room for Open and Reasoned Argument

When news posts contain political hashtags, people tend to comment using language focused narrowly around the hashtags as shown in the PMI analyses. People are focused on the hashtag itself and do not substantively engage with the facts or the salient topics of the article. Furthermore, such hashtag parlance tends not to be reasoned or nuanced. Comments use sweeping generalized language, call upon reductionistic black-and-white framings of the issue, and employ inflammatory and critical statements as shown in our discourse analysis. Such behavior does not encourage others to engage with a given topic of discussion (Berger, 2014; Kalmoe, 2014; Marietta et al., 2017; Rho et al., 2018; Triandafyllidou, 2000).

By contrast, commenters shown news posts without the hashtags were more reasoned, nuanced, and inclusive of different perspectives as demonstrated in their rhetorical style of arguments. People engaged with the actual content of the article by expressing their ideas with personal reflection and values framed in the first-person perspective. In doing so, commenters often brought up topics and ideas relevant to the social content of the article,

thereby expanding the scope of commentary and setting the stage for a richer quality of discussion.

6.4.3 Partisan Framing Decreases Discussion Quality

Furthermore, people perceived hashtagged news posts as “left- [and] liberal-leaning” while describing news articles without hashtags as covering a “national” issue. Political sociology shows that strong partisan identification tends to make people overlook facts and details on policy issues (Huddy et al., 2015). In return, this can affect how people deliberate on a certain topic (Huddy et al., 2015; Sunstein, 2018) as shown in our findings. Political hashtags frame a social topic or an issue with a partisan focus (as evidenced by the PMI keyword results such as “liberal” and left-leaning”), which in turn, is detrimental to fostering quality discourse around a given topic.

6.4.4 Heuristic Processing of Political Hashtags Amplifies Negativity Bias

Heuristic processing (Schwarz & Clore, 1991), or making quick information judgments, is particularly salient to the consumption of news (Koh & Sundar, 2010) and political content (Stieglitz & Dang-Xuan, 2013b) on social media. When people process online political information through heuristic short cuts, negative words induce more negative conclusions on the discussion topic (Baumeister et al., 2001; Cavazza & Guidetti, 2014; Stieglitz & Dang-Xuan, 2013a). Our work shows that political hashtags in news posts lexically engender more anger, fear, and disgust sentiments in people’s comments. This implies that long trails of emotionally negative commentary around hashtagged news can amplify negativity bias towards the conversation topic in comment threads. Such commenting behavior can

disproportionately inflate the focus of discussion on negative perspectives surrounding a given issue. This provides one reason why the aftermath of explosive attention and online conversations around the two popular hashtags resulted in a negative shift in opinion against the social movements and issues related to the hashtags.

6.4.5 Designing Towards Productive and Civil Online Discourse

Designers and engineers have incorporated hashtags in social media news algorithms with the aim of improving online conversations (Otsuka et al., 2014; Shi et al., 2014; F. Xiao et al., 2012). Such algorithms are able to filter, rank, and classify hashtagged news posts based on the frequency in which the hashtags appear in SNS conversations. Hence, by nature of design, such platforms often emphasize news content linked with hashtags that are popular or viral, many of which are political or related to social issues. Such functionality of hashtags may certainly amplify the visibility of an article headlined with a well-known political hashtag. However, as our study shows, the presence of such hashtags in articles can significantly undermine the quality of online news discussion, which may further turn people off from important social issues portrayed in the news. Hence, through this work, we encourage designers and engineers aiming to design systems for productive and civil online discourse, as well as politicians and social activists to carefully assess and consider the impact of hashtags on social media platforms.

6.4.6 Limitations

In selection of our news sources, we focused on major outlets with high factual reporting and consistent posting of topically diverse news content on their Facebook pages. NPR and NYT

were the most suitable sources based on these criteria. However, although relatively close to mainstream, these two sources are considered left-center. Thus, these sources may not be representative of the news consumed by more politically conservative participants in our study, which may affect their commenting behavior. To address this, we identified and specifically controlled for participants' political orientation throughout our analyses.

6.4.7 Conclusion

This work contributes to the current literature on political hashtags and their impact on the deliberative quality of online discourse. We employ both qualitative and computational approaches to understand how the presence of political hashtags as a design feature of social media news consumption shapes the quality of deliberation around news content. Our findings elucidate the power of hashtags in shaping the topical, emotional, and rhetorical behavior across a general audience. People shown political hashtags in news posts heavily focus on the politics of the hashtag rather than the topical content of the news story. These participants also use more language associated with fear, anger, and disgust in their comments compared to those in the control group. Finally, there are also significant differences in rhetorical patterns between those in the control group versus those shown news posts with hashtags, with the latter exhibiting black-and-white arguments and emotionally extreme expressions.

CHAPTER 7

Conclusion

In this dissertation, I demonstrate how common online design features, such as political hashtags impact the quality of online democratic discourse around current events at-scale. Through my analysis of ‘in-the-wild’ Facebook news comments in Phase 1 and comments collected from a large-scale online experiment in Phase 2, I present results and discuss implications that synthesize into three main contributions.

- I. An empirical examination of how people’s linguistic behavior is reaffirming divisions in how political hashtags are consumed and understood.

- II. An empirical demonstration of how the presence of political hashtags in social media news posts impacts (a) the perception and (b) the quality of discourse surrounding social topics pertaining to race and gender across a general audience.

- III. A theoretical examination of functionality and intertextuality as critical dimensions to consider in designing spaces for online discourse based on four primary arguments:
 1. Argument 1: Designs that consider functionality alone tend to favor operative research and engineering practices based on the frequency of

commenting behavior, which are biased toward volume-based definitions of discourse quality.

2. Argument 2: Frequency-driven research practices tend to promote a digital public sphere that predominantly favors hashtag (or content) producers over non-users and passive content consumers.
3. Argument 3: The creation and assessment of online systems that focus on the creation of content (particularly by hashtag producers) over how content is consumed and understood do not meet the deliberative standards of inclusivity and equity of participation in democratic discourse.
4. Argument 4: To better design for online democratic discourse, we need to consider not just functional, but *intertextual*, aspects of online design features.

In this final chapter, I summarize key results from the three studies in chapters 3, 5, and 6. I conclude with four primary arguments based on a theoretical examination of functionality and intertextuality as key dimensions of online design features.

7.1 Summary of Results

In this dissertation, I demonstrate at-scale how political hashtags as a common online design character affect the quality of online discourse around current events.

Phase 1 (Study 1): In Chapter 3, I examine the quality of online discourse ‘in-the-wild’ by analyzing the linguistic and affective attributes that characterize commenting behavior across three politically distinct news sources on Facebook covering the #MeToo hashtag. Commenters from both the far-left and alt-right Facebook news sites use a significantly greater proportion of negative affective words and informal speech compared to those of mainstream media.

There are also considerable differences in the semantic contexts in which #MeToo is framed in the discussions across the commenters from three politically distinct news sites. Furthermore, there are distinct patterns of rhetoric and discourse across comments from the three Facebook news sources that demonstrate how the linguistic style surrounding political hashtags contributes to the division in perspectives surrounding these hashtags. For example, there were clear strong in-group versus outgroup dynamics in rhetorical behavior that reinforced biases around how #MeToo was framed and discussed across the non-mainstream Facebook news sources.

Alt-right comments tend to engage in outgroup derogation by dehumanizing #MeToo participants by consistently using absolutist rhetoric, often demoralizing the experiences of sexual harassment and assault of those who have come forth by using the #MeToo hashtag. Far-left commenters on the other hand, exhibited strong in-group favoritism in rhetorical behavior based on race and socioeconomic status. These commenters often made blanket statements that promoted social fragmentation, undercutting the initial solidarity around the #MeToo movement.

What we are seeing from this study are specific linguistic patterns based on generalized expressions that promote dominant viewpoints while marginalizing minority perspectives. Again, such linguistic behavior is harmful to democratic discourse, as it discourages empathy and sharing, lowering the chance of finding commonality through shared experiences as human beings (e.g., experiences of sexual harassment and assault) despite having different political views. Results from Chapter 3 clearly demonstrate how linguistic behavior (what kind of words people use and how they use them) surrounding political hashtags can reaffirm biases and further contribute to the polarized perspectives surrounding political hashtags.

In Chapters 5 and 6, I demonstrate that it is not just linguistic behavior, but also political hashtags themselves that directly affect perception and discourse quality around social media news content across a general audience.

Phase 2 (Study 2): Results from the controlled online experiment in Chapter 5 show that compared to the control group, those who were shown hashtags in their news posts perceived the news content as *less* socially important and reported *less* motivation to know more about social issues related to the post. Further, men (compared to women) and politically conservative individuals (compared to those identified as liberal) found news topics on race and gender issues to be less socially important. In fact, negative assessment (associated with perception of partisan bias and controversy) of the news post fully mediated the negative impact of political hashtags on people's motivation to further engage or learn more about the news content. Furthermore, people who identified as politically moderate also perceived news posts to be significantly more partisan when the news posts

included hashtags. In fact, politically moderate respondents who saw news posts with hashtags were more suspicious about the credibility of the news. These participants also focused more on the politics of the hashtag rather than the social topic of the article.

Phase 2 (Study 3): In terms of discourse quality, experimental results described in Chapter 6 reveal that people shown news posts with political hashtags wrote comments with significantly more words lexically associated with anger, disgust, and fear than those shown the same news article without the hashtag. Through discourse analysis, I demonstrate distinct patterns in rhetorical style between participants in the hashtag and the control groups. Comments from the hashtag group often employ stark rhetoric that does not allow gradations in perspectives, thereby narrowing the scope of discussion to an either-or logic (e.g., “Education is straight forward, you either excel or you don’t”). By contrast, participants from the control group often ground their arguments in the first-person perspective (I/ we) as a way to consider personal reflection and reasoning in their comments. Overall, respondents who saw news posts headlined with hashtags were more suspicious about the credibility of the news and focused more on the politics of the hashtag compared to those who saw identical news posts without the hashtags.

7.2 Main Arguments

7.2.1 Functionality of Online Design Features

Argument 1: Sole emphasis on the functionality of hashtags favors operative research and engineering practices based on the conception of frequency, which are heavily biased towards volume-based definitions of discourse quality.

The unique functionality of hashtags, which allows the keyword following the '#' symbol to be efficiently indexed, categorized, and searched, makes the discoverability of topically relevant news content easier for users. Such functionality of hashtags in return, allows users to immediately join online conversations around political or social topics by simply clicking on hashtags that are "trending" as best exemplified by Twitter's "What's happening" column, which lists the most frequently tweeted hashtags on the platform.

Such functionality is what drives engineers and designers to operationalize hashtags as a key design feature in creating online platforms designed to facilitate discussions around current events (Bastos et al., 2012; W. Guo et al., 2013; Sedhai & Sun, 2014; Shi et al., 2016, 2014; F. Xiao et al., 2012). Hash2News for example is a chrome extension that takes hashtags as a functional input to present relevant news articles based on the searched hashtags (Matt Shearer, 2014). Insight4News is another case in point - the system is designed to encourage online discourse surrounding current events by providing "more relevant news with deeper contextualization" (Shi et al., 2014) by showing the top 10 hashtags related to the article. Here, the 'social context' of the news article, which is basically a set of hashtags, is developed and presented through "a machine learning algorithm that classifies and rank hashtags" (Shi et al., 2014) based on the frequency in which the hashtags appear in across social media news data.

The functionality of hashtags are not just used to contextualize social media articles by being appended below the news headlines. Researchers have also operationalized hashtags to amplify the opinions of those who are considered voices of authority in discussion of current events based on the volume of hashtagged content. For example Xiao et. al developed a

ranking system that finds “influential Twitter users who have high authority on news topics” (F. Xiao et al., 2012) based on their replies, mentions, and retweets of posts containing hashtags related to news content. Part of this process involves finding news-topic related hashtags by “[retrieving] tweets related to a news topic and [selecting] hashtags which are frequently used in these tweets” (F. Xiao et al., 2012).

Furthermore, researchers have also created systems that use hashtags to link tweets to news articles (W. Guo et al., 2013), recommend hashtags to hyperlinked tweets containing news content (Sedhai & Sun, 2014), and even rank news topic oriented hashtags to an incoming stream of news updates in real time (Shi et al., 2016) to help users join conversation about current events (F. Xiao et al., 2012; Zhang et al., 2012). Clearly, there is no dearth of examples in which hashtags are operationalized primarily for their functional aspects as design features across online systems created to encourage quality discourse on current events.

However, as one can imagine, such functional ease of hashtags favors operative research and engineering practices based on the conception of frequency. The functionality of hashtags enables engineers to attach, rank, and filter hashtagged content in evaluating what is discussed across users based on the volume of hashtagged content. This in return, makes it easier for researchers to take a frequency driven approach to understand and assess the soundness of these online discourse systems.

In fact, when designers and engineers assess online systems that algorithmically run on hashtags, they often do so based on the volume in which hashtags are mentioned. For example, topical importance is often defined based on the highest frequency of hashtags generated across user activity (Booten, 2016; Romero et al., 2011; Shi et al., 2016; X. Wang

et al., 2011; F. Xiao et al., 2012). The quality of online discourse across users too, is often measured based on the number of replies or re-posts (e.g., retweets of articles containing hashtags) of content that contain specific hashtags (Bastos et al., 2012; W. Guo et al., 2013; Hadgu et al., 2013; Lin et al., 2013, p. 201; Romero et al., 2011; Sedhai & Sun, 2014; Shi et al., 2016, 2014; F. Xiao et al., 2012). In these studies, researchers often rely on volume-based definitions of discourse quality surrounding hashtags. The volume of hashtagged content captured in the researcher's data is used as a direct proxy to measure conversational vibrancy (Lin et al., 2013) or the persistence of topics (Romero et al., 2011) across users.

Such frequency-driven approaches to understanding and evaluating online systems designed to serve as digital public spheres for democratic discourse, however, is problematic. To a certain degree, frequency-count of replies or the number of people using the hashtag may indeed reflect various levels of engagement. However, such quantified approaches to 'measuring' discussion quality are rather simplified and may not holistically capture the quality of discourse surrounding political hashtags as strongly suggested by the implications of this dissertation work.

In fact, results from Phase 1 (Study 1) show that the volume of hashtagged content does not necessarily equate quality engagement. This is best exemplified in the analysis of the Breitbart (alt-right) and Democracy Now (far-left) discussion comments around #MeToo news articles in Chapter 3. For example, the alt-right news articles on #MeToo topics had the highest average number of comments per article. However, these comments from the Breitbart news posts that explicitly included the #MeToo hashtag were profuse with sexual profanity, swear words, and absolutist rhetoric that discouraged empathy as opposed to the

comments from the mainstream news posts that were more constructive, perspective-taking, and inclusive.

More simply, just take into consideration, the two primary hashtags used in this study. #MeToo and #BlackLivesMatter were the two most frequently used political hashtags at one point in time (Anderson, 2016; J. Bennett, 2018a; Chokshi, 2016; Codrea-Rado, 2017). The volume in which these hashtags were mentioned are clearly not reflective of the deliberative quality of discussion in which these hashtags are included. In fact, frequency-driven or volume-based understanding of discourse quality based on hashtagged content may merely reflect the volleying of content within specific groups that explicitly use the hashtag or those that I term as hashtag producers.

7.2.2 Frequency Driven Research Practices

Argument 2: Frequency-driven research practices tends to promote a digital public sphere that predominantly favors hashtag (or content) producers over non-users and passive content consumers.

Implementing political hashtags as design characters purely for their functional mechanism tends to drive design and engineering practices based on the notion of frequency. Such practices by default, inevitably and exclusively prioritize “hashtag producers” as the main users of the system. Methodologically, frequency-based approaches in evaluating and designing online discursive systems overtly ignore those who do not use hashtags (non-users) or those who are passively exposed to hashtagged content (passive content consumers) as they are not captured in the researchers’ data. This is most likely due to the

functionality or the functional ease of hashtags that enable researchers to collect data through an API-filtering of tweets or comments that include specific hashtags pertaining to the researchers' interests. As a result, the very nature of frequency-driven metrics (e.g., volume of replies or original posts including hashtags) is limited to aid the understanding of discourse behavior that is exclusive to hashtag-producers.

As of now, most empirical studies that use social media data to understand the nature of online political discourse are based on such methods that largely ignore non-users or passive content consumers. In fact, based on my current knowledge of prior literature, all studies investigating the nature of political discourse in relation to hashtags focus solely on hashtag producers. In that sense, this dissertation work contributes to the development of scholarship on online democratic discourse around political hashtags, as it is the first to consider passive content consumers and non-users in assessing the influence of political hashtags on the quality of democratic discourse.

Furthermore, prior literature that focus on hashtag producers also generally takes a positive view of how political hashtags shape the online public sphere (Booten, 2016; Bruns et al., 2013; Jackson et al., 2017; Michie et al., 2018; Rambukkana, 2015; Starbird & Palen, 2012). As previously mentioned in the related works section in Chapter 2, implicit in these studies is the assumption that hashtagged media is received in a manner aligned with the goals of the community using the hashtags to promote or debate a particular social issue. Results from this dissertation research certainly challenges this assumption. In striking contrast to earlier findings in literature, results from the controlled online experiment (Chapters 5, and 6) effectively demonstrate that non-users or those who are passively exposed to hashtagged

content may not actually perceive or engage in similar ways to the hashtag producers. This highlights an awakening finding that is counter to the positive assumptions around hashtags made by dominant research practices that operationalize hashtags as functional design considerations for online discourse or prior literature examining political hashtags in the context of democratic engagement.

Furthermore, considering functionality alone perpetuates the development of systems based on frequency-driven definitions and assessments that exclusively capture the discursive activity of hashtag producers. The very nature of such practices cannot consider the opinions and thoughts of non-users and passive content consumers, which as a result, can potentially inflate the impression around hashtags based on those who decide to use them.

7.2.3 Prioritization of Hashtag (Content) Producers

Argument 3: The creation and assessment of online systems that exclusively prioritize content by hashtag producers are counter to the deliberative standards of inclusivity and equity of participation in democratic discourse.

Systems that are designed and engineered to exclusively amplify the perspectives and voices of hashtag producers are inherently counter to the basic principles of an ideal public sphere theorized by prior research in Political Communication and online deliberation scholarship. Democratic theories of deliberation fundamentally require that the conditions of discourse to enable and reflect equity and inclusivity of all citizen voices in discussion of important public issues (Calhoun, 1992; Dahlberg, 2004; Fang, 1996). This means online deliberation systems should aim to prevent the prioritization of any one particular group of voice over

another (Bohman, 2004; Dagoula, 2017; Graham, 2015; Ruiz et al., 2011). However, it is difficult to enact inclusivity and diversity of voices in online deliberation systems that are run by engineering practices that by default, treat hashtag producers as primary discourse participants. Those who do not use hashtags or those who are merely exposed to hashtagged content are not captured by the system parameters that are established to only identify the discursive engagement of hashtag producers. Such conditions of discourse therefore tend to perpetuate and amplify the thoughts and opinions of those who use hashtags.

Furthermore, there are demographic differences in how people use political hashtags. For example, research shows that men and women differ in their use of political hashtags (Bates, 2015). Men not only tend to express more political views online than their female counterparts (Bode, 2017; Portney et al., 2009; Rae Atkeson & Rapoport, 2003; Y. Zhou & Pinkleton, 2012), but also use political hashtags more often than women (Cunha et al., 2014; Gudymenko & Borcea-Pfitzmann, 2011; Holmberg & Hellsten, 2015; Portney et al., 2009; Ye et al., 2018). Such demographic differences in the norms and practices around the use or the non-use of political hashtags can lead to online systems that are evaluated based on a demographically skewed composition of participants. As a result, online systems that are designed for and assessed based on hashtagged content alone may not only be biased in favor of hashtag producers, but may also be demographically unrepresentative. Such conditions of discourse that demographically overrepresent one group over the other are counter to the deliberative standards of democratic discourse.

Furthermore, a foundational goal of deliberative democracy is to effect change through social discourse and public knowledge around political issues across a general audience and not

just across one particular group. However, to effectively do so, mobilization of political discourse and increase in awareness of social issues (often embodied by political or news-oriented hashtags) needs take place across a broad public audience beyond passionate enthusiasts (Benford & Snow, 2000; Blumer, 1969; Tilly, 1978) . In other words, impact needs to spread beyond those initially aligned with a hashtag movement (Jackson & Foucault Welles, 2016) or those who explicitly use political hashtags in support of social causes in the first place. However, most prior literature make a strong assumed link between political hashtags and the general sentiment around public activism exclusively based on the analyses of hashtag-producers. The term ‘hashtivism’ (Blanco Ramírez & Scott Metcalfe, 2017) is the perfect exemplification this assumption. Hashtivism or hashtag activism describes the discursive activity of posting hashtagged content as a contributing force of democratic revolution across the general public (Starbird & Palen, 2012). There is no doubt that political hashtags played an operative role in certain key historical and public events (Anderson, 2016; Howard et al., 2011). However, the role of political hashtags in how they affect the way people, perceive social issues, may not always be democratically conducive across the board as demonstrated in this dissertation work. Findings from this dissertation research strongly suggest that studying online systems that exclusively prioritize the perpetuation of content by hashtag producers can lead to a misconception of how political hashtags shape the quality of democratic discourse.

In fact, contrary to prior literature, experimental results from this dissertation research demonstrate that political hashtags do not necessarily lead to, but in fact decrease interest in social issues and increase hyper-partisan reactions towards mainstream news content. Results from the large-scale controlled online experiment in chapters 5 and 6 clearly show

that those who are merely shown hashtags as passive content consumers are significantly turned off by the social issues portrayed in the news article. In fact, people shown political hashtags in the headlines of the news posts heavily focus on the politics of the hashtag rather than the factual or topical content of the news story. People across the board also use significantly more language associated with fear, anger, and disgust in their discussion of hashtagged news content compared to those in the control group. Such findings suggest that in the long run, political hashtags may impede critical conversations around social topics, especially around social media news articles which are and will continue to be important public spheres of discourse. It is critical for prior literature to re-consider how political hashtags can impact the quality of online democratic discourse.

Our understanding and operationalization of political hashtags as a design feature need to be carefully assessed and re-evaluated. Online platforms that are engineered, designed, and evaluated solely based on hashtag producers or frequency-driven metrics based on hashtag volume do not encourage the deliberative conditions necessary for democratic discourse. In addition, political discourse perpetuated by the creation of hashtagged content by hashtag producers do not holistically reflect the general opinion and sentiment toward issues related to the hashtags across the board, as empirically demonstrated in this dissertation research. Beyond hashtag producers, the broader audience including those who are merely exposed to hashtags or do not use political hashtags at all may have widely different views that are currently not captured by online platforms that functionally run on hashtags. Then, what can we do? Through this dissertation work, I argue that it is critical to re-examine the nature of common online design features such as political hashtags, beyond their functional capacity. As a first step in this direction, I turn to the theory of intertextuality as a key dimension to

consider when conceptualizing and implementing design features in online discourse systems.

7.2.4 Intertextuality of Online Design Features

Argument 4: To better design for online democratic discourse, we need to consider not just functional, but also intertextual aspects of online design features.

Intertextuality is the notion that text attains its meaning in relation to other texts (Kristeva, 1980, 2002). First coined by Julia Kristeva (Kristeva, 1980), the concept of intertextuality draws upon the work of Mikhail Bakhtin who brought attention to the dialogic nature of texts in literary analysis (Bakhtin, 2004, 2010). According to Bakhtin, any kind of utterance by nature, is dialogic, signifying that a word's meaning and power depends on what has been previously said about it (Mikhail M. Bakhtin, 2004). By being dialogic, textual utterances are related to the perpetually changing contexts of other textual utterances by being "in constant contact with one another" (Bakhtin, 2013) . As a result, texts rarely stand alone, but are constantly evolving in relation to other texts in continuous dialogue (Kristeva, 1980).

In this vein, political hashtags too are intertextual (Stathopoulou, 2016; Zappavigna, 2015). Hashtags, like "all utterances and artifacts, exist within a complex web of interconnected meanings and messages" (B. Davis, 2013; Kristeva, 2002). Viral hashtags enable people who use them to share personal stories to become a part of a larger discursive narrative taking place on the Internet. When millions of networked users use an identical hashtag to discuss an emergent social topic, it is argued that such users are deliberately labeling an ideation (Zappavigna, 2015) en masse. This process in return, creates a powerfully interconnected

discursive community of users who share, exchange, and learn the stories of others by using the same hashtag.

Figuratively speaking, this said hashtag then ‘travels’ through the written texts of millions of networked users on the Internet as it becomes viral. In that process, because textual utterances, including those that contain hashtags, are dialogic, the meaning of hashtags can contextually evolve depending on what has been previously said about it. This phenomenon certainly evokes Kristeva’s notion of intertextuality.

In fact, intertextuality is what enables hashtags to become “‘hyper-charged’ with an ‘additional semiotic pull’” (B. Davis, 2013) as hashtags gain narrative agency through the stories shared and exchanged across millions of users. To better illustrate what I mean by this, let us first think about how the two viral political hashtags used in this dissertation work – #MeToo and #BlackLivesMatter – first came about and gradually evolved. It is important to remember that the initial reception of these hashtags were quite different from the impression people developed towards them several years later (Anderson, 2016; Chira & Einhorn, 2017; Chokshi, 2016; Horowitz & Livingston, 2016; Kahn, 2018; Sullivan, 2018; The Economist, 2018; Tovia Smith, 2018b, 2018a).

When the #MeToo hashtag first emerged publicly, the hashtag was regarded and used as an expression of solidarity among those coming forth to share deeply personal and difficult experiences in the past. The very initial atmosphere of conversations surrounding #MeToo therefore, was one generally marked by solidarity, surprise, and solemnness (Chira, 2018; Hartocollis, 2018; Park Jumin, 2018; Sang-Hun, 2018). Despite the controversial nature and gravity of topics associated with the hashtag (sexual harassment and assault), it was

reported that people were intent to learn and listen to the voices and stories that were previously kept silent (Byerley, 2018; Gash & Harding, 2018; Hasunuma & Shin, 2019; Hosterman et al., 2018). Similarly, the initial response around #BlackLivesMatter at the time of its first appearance in mid-2013 was much more positive and less controversial than reported in a national survey several years later (Horowitz & Livingston, 2016). When the #BlackLivesMatter hashtag first reached its viral peak in 2013, the hashtag was seen as inspiring an important national conversation on the issue of public crisis around police killings of Black citizens (Horowitz & Livingston, 2016; Monica Anderson and Paul Hitlin, 2016; G. Yang, 2016).

However, such initial receptance of both hashtags drastically changed over time after they came under the national radar. Merely just one year later, people were describing those using the #MeToo hashtags as wanting to start a “witchhunt”(Gwilym Mumford, 2018), and drawing unnecessary “backlash” (Marcotte, 2017; Merkin, 2018; Safronova, 2018; The Economist, 2018; Tolentino, 2018; Tovia Smith, 2018b, 2018a). Similarly, four years after the #BlackLivesMatter hashtag came to national prominence, according to a Pew Research survey conducted in 2017, the majority of Americans reported to have an unfavorable view of the movement (Swanson, 2017) that cut sharply along racial and partisan lines (Horowitz & Livingston, 2016).

In fact, findings from my dissertation work clearly demonstrate how the semiotic-pull of these two political hashtags may have contributed to such shift in attitudes towards not just the hashtag themselves, but also the social issues embodied by the hashtags. For example, as shown in the analyses in Chapter 3, linguistic behavior – what words people use and the

manner in which they use them – can strongly influence how perspectives are formed around political hashtags. For example, people’s linguistic style and affect are closely linked with the considerable differences in the semantic framing in which #MeToo is contextualized across discussions. In Chapters 5 and 6, the *absence* of political hashtags in news posts are shown to encourage *more* constructive and perspective-taking style of discourse denoted by the frequent use of the first-person voice in commenting behavior. Such psycholinguistic style of discourse is in striking contrast to the emotionally extreme and generalizing language that reflect hyper-partisan reactions when hashtags were present in news articles. Clearly, the semiotic power of persistently used words and expressions – e.g., words associated with fear, anger, and disgust (Chapter 6), absolutist expressions (Chapter 3), black-and-white rhetoric (Chapter 6), out-group versus in-group style of arguments (Chapter 3) – shape the manner and context in which hashtags are consumed and viewed. What this indicates is that the intertextuality of hashtags allows hashtagged content to evolve in meaning across perpetually changing contexts through the very power of language in which they are discussed.

As one of the most common social media design features, political, social, or news-topic oriented hashtags are pervasively imbedded throughout online platforms for their functionality that enables people to search, filter, and join online conversations around important public events and topics. The intertextual quality of a political hashtag equips its proliferation across networks with a semiotic force as it virally spreads through the written texts of individual users, major news outlets, and even companies, whether it be in the form of a personal SNS post, an article headline (J. Bennett, 2018b; Chira & Einhorn, 2017; V. Friedman, 2020), or a commercial advertisement (Jones, 2020). The language through which

the hashtag is described and expressed throughout its viral growth, frames and even transforms the hashtag into something that is completely different in meaning for different people. As evidenced in this dissertation work, some of the sobering consequences of this phenomenon are a punitive divergence in perspectives and a vindictive style of discourse around social issues of critical importance. As stated earlier in this thesis, a society that is able to engage in constructive democratic discourse helps people find shared values with one another despite personal differences and the challenging multiplicity of perspectives (Bohman et al., 1997; Christiano, 1997; Cooke, 2000; Dryzek, 2006; Mouffe, 1999; Ryfe, 2005; Van Mill, 1996).

The development of a strong deliberative public opinion is a crucial to the democratic resilience of societies (Albrecht, 2006; Bessette, 1997; Fishkin, 1997; Luskin et al., 2002). Online platforms designed with this in mind should consider how common online design features like political hashtags can evolve to weaken the conditions of online discourse on important social issues. Hence, as researchers, designers, engineers, politicians, social activists, journalists, and individual users, it is important to know that we cannot take common social media norms and design choices for granted. Even a simple practice, like branding a social topic with a catchy hashtag, could compromise the credibility of news content and the quality of discourse surrounding it. If we want to build and sustain healthy discussions online, whether in academia, industry, or public affairs, we need to start questioning how social media design choices and practices influence the democratic health of the internet.

7.3 Recap of Arguments and Concluding Thoughts


Online design considerations that consider the functionality of hashtags alone tend to promote engineering and operative research practices that are frequency-driven. In return, frequency-driven approaches in creating, designing, and assessing online discourse systems tend to promote a digital public sphere that favors content producers over non-users and passive content consumers. This exclusive emphasis on the functionality of design features that favors frequency-driven approaches essentially perpetuates structural conditions that are counter to the deliberative requirements of inclusivity and equity of participation in democratic discourse. Yet, empirical findings that have testified the “democratic” powers of political hashtags are often based on such systems or frequency-based research practices that primarily take hashtag producers into consideration as discourse participants. Before scaling online discourse systems that functionally run on hashtags, designers, engineers, and researchers all need to consider how the operationalization of hashtags in these systems affect who is and is not captured in the system’s parameters and whether such operative practices are failing to consider non-users or passive content consumers as discourse participants. To this end, I argue through my dissertation work that we need to rethink and evaluate how current methodological approaches that exclusively prioritize the functionality of design features, are limiting the way we understand the quality of online discourse, as well as how we should be thinking about the ideal conditions of online democratic discourse. As a first step towards this end, I argue that in addition to the functionality of design, we should also consider the intertextuality of design features when designing online platforms for democratic discourse.

We are currently facing a problem where people's motivation and ability to engage in online discourse is negatively affected by the rise of fake news misinformation and political

extremism. At the same time, the conditions of online discourse have significantly changed with technological advancements. Yet, so far conventional approaches to understanding the nature of online discourse have largely focused on content producers and the examination of social media design and discourse quality has yet to be explored with greater empirical depth.

To this end, my dissertation work examines the relationship between political hashtags as social media design choices and the quality of democratic discourse by taking nonusers and passive content consumers into consideration throughout my analyses. In doing so, my work provides a new understanding around how common online design features, such as political hashtags, can impact discourse quality at-scale. By deriving empirical insights through this dissertation work through natural language processing, discourse analysis, and experimental design, I aim to contribute to the theoretical implication of online deliberation and design scholarship by bridging the field of HCI and Political Communication both through methodological practice and theory. Empirical findings from this dissertation aim to inform better design and engineering practices for industries that service social media platforms, journalistic practices within news organizations, and norms around the use of political hashtags for individuals, social activists, and political leaders. Finally, I envision my line of research on online design and discourse quality to open up broader applications to other topical domains beyond news consumption for future work.

APPENDIX A: Originally Published News Posts

 **NPR**
January 29 · 🌐



In private conversations, many female songwriters in Nashville say they've had moments with collaborators that border on harassment and even assault.



#MeToo Prompts Female Songwriters To Grapple With Their Own Experiences Of Harassment

These women describe how some male collaborators have taken advantage of the emotional intimacy inherent in songwriting.

NASHVILLEPUBLICRADIO.ORG

 Like  Comment  Share

A.1. News Post Originally Published by NPR Facebook



NPR

December 3, 2017 · 🌐



Karen Attiah, The Washington Post's global opinions editor, tells NPR that current conversations surrounding sexual harassment and assault largely exclude women of color who are victims.



When Black Women's Stories Of Sexual Abuse Are Excluded From The National Narrative

NPR's Lulu Garcia-Navarro talks to Karen Attiah, The Washington Post global opinions editor, about women of color in the #MeToo movement.

NPR.ORG

Like

Comment

Share

A.2. News Post Originally Published by NPR Facebook



NPR

January 26 · 🌐



The line from WMATA was once: "One person's harassment is another person's flirting." Times have changed.



Metro Becomes The Next Battleground In The #MeToo Movement

Metro has been working with activists to become more responsive to claims of harassment in the transit system. Critics would like the agency to respond...

WAMU.ORG



A.3. News Post Originally Published by NPR Facebook



The New York Times

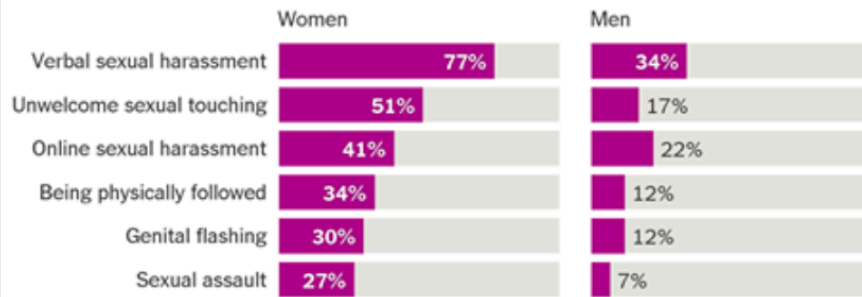
February 21 · 🌐



A new survey reported that 81% of women and 43% of men said they had experienced sexual harassment or assault over their lifetimes.

What Happened, and to Whom

Percent who say they have experienced:



Source: Stop Street Harassment



Numbers Hint at Why #MeToo Took Off: The Sheer Number Who Can Say Me Too

Broadly defined, sexual harassment is surprisingly pervasive, a new survey finds, and men are targets, too.

NYTIMES.COM



A.4. News Post Originally Published by the New York Times Facebook



The New York Times

April 14 · 🌐



In many countries, sex with a minor under a certain age is considered rape because the minor is thought to be too young to consent. France has no such law.



In the #MeToo Era, France Struggles With Sexual Crimes Involving Minors

A recent case involving an 11-year-old girl has given urgency to the government's efforts to change laws to better protect minors.

[NYTIMES.COM](https://www.nytimes.com)



A.5. News Post Originally Published by the New York Times Facebook



The New York Times

March 4 · 🌐



"I don't want to lie to him, but at the same time I'm really not ready to talk about it yet with my family."



Do I Have to Tell My Father About My #MeToo Experience?

The magazine's Ethicist columnist on whether to disclose a history of sexual assault to family members and more.

[NYTIMES.COM](https://www.nytimes.com)



A.6. News Post Originally Published by the New York Times Facebook



NPR

September 30, 2016 · 🌐



What does it mean to declare that [#blacklivesmatter](#) in education?



Questions Of Race And Charter Schools Divide Education Reformers

Black Lives Matter, the NAACP and the future of a once bipartisan alliance on education.

NPR.ORG

Like

Comment

Share

A.7. News Post Originally Published by NPR Facebook



NPR

April 17 · 🌐



Here are some ways Starbucks has addressed race relations in the past and how it has managed social backlash.



With Philadelphia Arrests, Starbucks Again Becomes Focus Of Cultural Debate

Starbucks faces protests after the arrests of two black men last week in one of its locations. From #BlackLivesMatter to refugee resettlement, the coffee...

[NPR.ORG](https://www.npr.org)



A.8. News Post Originally Published by NPR Facebook



NPR

July 4, 2017 · 🌐



"The local is where the work is. If we're looking at just the national, it's pretty devastating. But if you zoom into cities, to towns, to rural areas, people are fighting back and people are winning," says Patrisse Khan-Cullors, who helped birth [#blacklivesmatter](#).



Amid 'Devastating' Progress Nationally, Black Lives Matter Engages Local Causes

Activists admit movement around national issues like police reform has been slow, but say they're focused on local issues — from paying subway fare to...

[NPR.ORG](#)



A.9. News Post Originally Published by NPR Facebook



The New York Times

April 14 · 🌐



14-year-old Brennan Walker got lost on his way to his high school. He knocked on a stranger's door for help. The homeowner picked up his shotgun.



A Black Teenager Asked for Directions. A Man Responded With Gunfire.

Brennan Walker ended up in a subdivision where the roads looped into each other, and when he noticed he had gone in a circle, he stopped to ask for help.

NYTIMES.COM



A.10. News Post Originally Published by the New York Times Facebook



The New York Times

March 27 · 🌐



Hundreds of people filled the lobby at Sacramento City Hall to protest the death of Stephon Clark, who was killed by the police.



Hundreds at Sacramento City Hall Protest Police Killing of Stephon Clark

Black leaders expressed frustration about the shooting death of an unarmed black man last week. California's attorney general has taken over the...

NYTIMES.COM



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A.11. News Post Originally Published by the New York Times Facebook



The New York Times

November 11, 2015 · 🌐



Students at other colleges say they have been inspired by the protests at the University of Missouri and the Black Lives Matter movement to demand a safe space for students of color.



Racial Discrimination Protests Ignite at Colleges Across the U.S.


Students say they have been inspired by the Black Lives Matter movement and the protests at the University of Missouri to demand their universities...

[NYTIMES.COM](https://www.nytimes.com)




A.12. News Post Originally Published by the New York Times Facebook

APPENDIX B: News Posts Modified to Exclude Hashtags for Phase 2 Experiment (Control Condition)

 **NPR**
January 29 · 🌐




In private conversations, many female songwriters in Nashville say they've had moments with collaborators that border on harassment and even assault.



Female Songwriters Grapple With Their Own Experiences of Sexual Harassment

These women describe how some male collaborators have taken advantage of the emotional intimacy inherent in songwriting.

NASHVILLEPUBLICRADIO.ORG

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B.1 Control Condition Excluding Hashtags



NPR

December 3, 2017 · 🌐



Karen Attiah, The Washington Post's global opinions editor, tells NPR that current conversations surrounding sexual harassment and assault largely exclude women of color who are victims.



When Black Women's Stories of Sexual Abuse Are Excluded From The National Narrative

NPR's Lulu Garcia-Navarro talks to Karen Attiah, The Washington Post global opinions editor, about women of color in the national conversation on sexual harassment.

NPR.ORG



B.2 Control Condition Excluding Hashtags



The New York Times

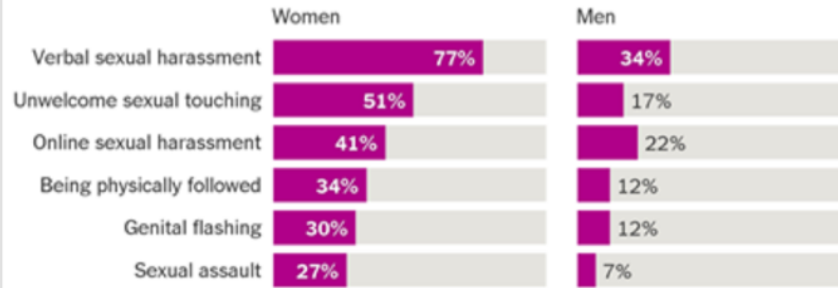
February 21 · 🌐



A new survey reported that 81% of women and 43% of men said they had experienced sexual harassment or assault over their lifetimes.

What Happened, and to Whom

Percent who say they have experienced:



Source: Stop Street Harassment



Numbers Hint at Why More Women Reported Sexual Harassment Experiences Through Social Media

Broadly defined, sexual harassment is surprisingly pervasive, a new survey finds, and men are targets, too.

NYTIMES.COM



B.3 Control Condition Excluding Hashtags



The New York Times

March 23 · 🌐



Women have spoken. Men have fallen. Corporations are nervous. But are American workplaces making real progress in curbing sexual harassment?



NYTIMES.COM

Are Workplaces Really Changing?



Like



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B.4 Control Condition Excluding Hashtags



The New York Times

March 4 · 🌐



"I don't want to lie to him, but at the same time I'm really not ready to talk about it yet with my family."



Do I Have to Tell My Father About My Sexual Harassment Experience?

The magazine's Ethicist columnist on whether to disclose a history of sexual assault to family members and more.

NYTIMES.COM



B.5 Control Condition Excluding Hashtags



NPR

January 26 · 🌐



The line from WMATA was once: "One person's harassment is another person's flirting." Times have changed.



Metro Becomes The Next Battleground Against Sexual Harassment

Metro has been working with activists to become more responsive to claims of harassment in the transit system. Critics would like the agency to respond...

WAMU.ORG

Like

Comment

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B.6 Control Condition Excluding Hashtags



NPR

September 30, 2016 · 🌐



What does it mean to discuss racial issues in education?



Questions of Race And Charter Schools Divide Education Reformers

The NAACP and the future of a once bipartisan alliance on education.

NPR.ORG

Like

Comment

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B.7 Control Condition Excluding Hashtags



NPR

April 17 · 🌐



Here are some ways Starbucks has addressed race relations in the past and how it has managed social backlash.



With Philadelphia Arrests, Starbucks Again Becomes the Focus of Cultural Debate

Starbucks faces protests after the arrests of two black men last week in one of its locations. |

[NPR.ORG](https://www.npr.org)

Like

Comment

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B.8 Control Condition Excluding Hashtags



NPR

July 4, 2017 · 🌐



"The local is where the work is. If we're looking at just the national, it's pretty devastating. But if you zoom into cities, to towns, to rural areas, people are fighting back and people are winning," says black activist Patrisse Khan-Cullors.



Amid 'Devastating' Progress Nationally, Black Activists Engages in Local Causes

Activists admit movement around national issues like police reform has been slow, but say they're focused on local issues — from paying subway fare to...

NPR.ORG



B.9 Control Condition Excluding Hashtags



The New York Times

November 11, 2015 · 🌐



Students at other colleges say they have been inspired by the protests at the University of Missouri and the Black activist movements to demand a safe space for students of color.



Racial Discrimination Protests Ignite Colleges Across the US

Students say they have been inspired by Black activists and the protests at the University of Missouri to demand their universities...

NYTIMES.COM



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B.10 Control Condition Excluding Hashtags



The New York Times

March 27 · 🌐



Hundreds of people filled the lobby at Sacramento City Hall to protest the death of Stephon Clark, who was killed by the police.



Hundreds at Sacramento City Hall Protest Police Killing of Stephon Clark

Black leaders expressed frustration about the shooting death of an unarmed black man last week. California's attorney general has taken over the...

NYTIMES.COM



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B.11 Control Condition Excluding Hashtags



The New York Times

April 14 · 🌐



14-year-old Brennan Walker got lost on his way to his high school. He knocked on a stranger's door for help. The homeowner picked up his shotgun.



A Black Teenager Asked for Directions. A Man Responded with Gunfire.

Brennan Walker ended up in a subdivision where the roads looped into each other, and when he noticed he had gone in a circle, he stopped to ask for help.

NYTIMES.COM



B.12 Control Condition Excluding Hashtags

APPENDIX C: News Posts Modified to Include Hashtags for Phase 2 Experiment (Experimental Condition)

 **NPR**
January 29 · 🌐

In private conversations, many female songwriters in Nashville say they've had moments with collaborators that border on harassment and even assault. **#MeToo**



#MeToo Prompts Female Songwriters To Grapple With Their Own Experiences of Sexual Harassment

These women describe how some male collaborators have taken advantage of the emotional intimacy inherent in songwriting.

NASHVILLEPUBLICRADIO.ORG

 Like  Comment  Share

C.1 Experimental Condition Including Hashtags



NPR

December 3, 2017 · 🌐



Karen Attiah, The Washington Post's global opinions editor, tells NPR that current **#MeToo** conversations surrounding sexual harassment and assault largely exclude women of color who are victims. **#MeToo**



When Black Women's Stories of Sexual Abuse Are Excluded From The National #MeToo Narrative

NPR's Lulu Garcia-Navarro talks to Karen Attiah, The Washington Post global opinions editor, about women of color in the national conversation on sexual harassment.

NPR.ORG



C.2 Experimental Condition Including Hashtags



The New York Times

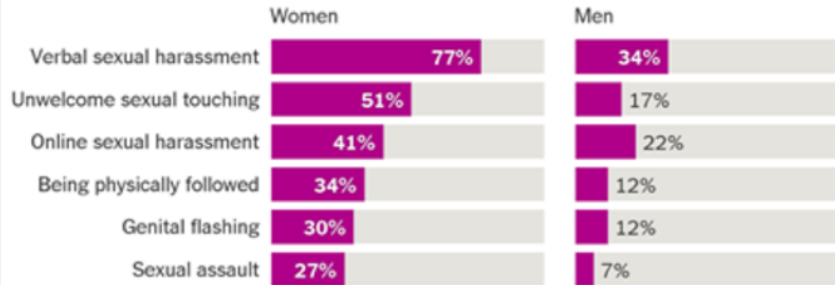
February 21 · 🌐



A new survey reported that 81% of women and 43% of men said they had experienced sexual harassment or assault over their lifetimes. **#MeToo**

What Happened, and to Whom

Percent who say they have experienced:



Source: Stop Street Harassment



Numbers Hint at Why #MeToo Took Off: The Sheer Number Who Can Say Me Too

Broadly defined, sexual harassment is surprisingly pervasive, a new survey finds, and men are targets, too.

NYTIMES.COM



C.3 Experimental Condition Including Hashtags



The New York Times

March 23 · 🌐



Women have spoken. Men have fallen. Corporations are nervous. But are American workplaces making real progress in curbing sexual harassment after the #MeToo movement? **#MeToo**



NYTIMES.COM

#MeToo Called for an Overhaul. Are Workplaces Really Changing?

👍 Like

💬 Comment

➦ Share

C.4 Experimental Condition Including Hashtags



The New York Times

March 4 · 🌐



"I don't want to lie to him, but at the same time I'm really not ready to talk about it yet with my family." **#MeToo**



Do I Have to Tell My Father About My #MeToo Experience?

The magazine's Ethicist columnist on whether to disclose a history of sexual assault to family members and more.

NYTIMES.COM



C.5 Experimental Condition Including Hashtags



NPR

January 26 · 🌐



The line from WMATA was once: "One person's harassment is another person's flirting." Times have changed. **#MeToo**



Metro Becomes The Next Battleground In The #MeToo Movement

Metro has been working with activists to become more responsive to claims of harassment in the transit system. Critics would like the agency to respond...

WAMU.ORG

Like

Comment

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C.6 Experimental Condition Including Hashtags



NPR

September 30, 2016 · 🌐



What does it mean to declare that **#blacklivesmatter** in education?



Questions of Race And Charter Schools Divide Education Reformers in the Era of #Blacklivesmatter

Black Lives Matter, the NAACP and the future of a once bipartisan alliance on education.

NPR.ORG



C.7 Experimental Condition Including Hashtags



NPR

April 17 · 🌐



In the era of **#blacklivesmatter**, here are some ways Starbucks has addressed race relations in the past and how it has managed social backlash.



With Philadelphia Arrests, Starbucks Again Becomes the Focus of Cultural Debate in the #Blacklivesmatter Era

Starbucks faces protests after the arrests of two black men last week in one of its locations. From #BlackLivesMatter to refugee resettlement, the coffee...

[NPR.ORG](https://www.npr.org)



C.8 Experimental Condition Including Hashtags



NPR

July 4, 2017 · 🌐



"The local is where the work is. If we're looking at just the national, it's pretty devastating. But if you zoom into cities, to towns, to rural areas, people are fighting back and people are winning," says Patrisse Khan-Cullors, who helped birth **#blacklivesmatter**.



Amid 'Devastating' Progress Nationally, Black Lives Matter Engages Local Causes

Activists admit movement around national issues like police reform has been slow, but say they're focused on local issues — from paying subway fare to...

NPR.ORG



C.9 Experimental Condition Including Hashtags



The New York Times

November 11, 2015 · 🌐



Students at other colleges say they have been inspired by the protests at the University of Missouri and the Black Lives Matter movement to demand a safe space for students of color.

#blacklivesmatter



Inspired by #Blacklivesmatter, Racial Discrimination Protests Ignite Colleges Across the US

Students say they have been inspired by Black Lives Matter movement and the protests at the University of Missouri to demand their universities...

[NYTIMES.COM](https://www.nytimes.com)



Like



Comment



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C.10 Experimental Condition Including Hashtags



The New York Times

March 27 · 🌐

Hundreds of people filled the lobby at Sacramento City Hall to protest the death of Stephon Clark, who was killed by the police.

#blacklivesmatter



#Blacklivesmatter: Hundreds at Sacramento City Hall Protest Police Killing of Stephon Clark

Black leaders expressed frustration about the shooting death of an unarmed black man last week. California's attorney general has taken over the...

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C.11 Experimental Condition Including Hashtags



The New York Times

April 14 · 🌐



14-year-old Brennan Walker got lost on his way to his high school. He knocked on a stranger's door for help. The homeowner picked up his shotgun. **#blacklivesmatter**



A Black Teenager Asked for Directions.
A Man Responded with Gunfire. **#Blacklivesmatter**

Brennan Walker ended up in a subdivision where the roads looped into each other, and when he noticed he had gone in a circle, he stopped to ask for help.

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C.12 Experimental Condition Including Hashtags

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