



The Digital Architectures of Social Media: Platforms and Participation in Contemporary Politics

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Summary

Social media platforms (SMPs) influence the communication of virtually all stakeholders in democratic politics. Politicians and parties campaign through SMPs, the press use them to distribute political news, and many citizens read, share, and debate political issues across multiple social media accounts.

When assessing the political implications of these practices, scholars have overly focused on the commonalities of SMPs, rather than their differences. By treating social media as a coherent genre, scholars interested in SMPs' impact on politics have oversimplified an increasingly fragmented social media landscape. While we know politicians and citizens use social media to campaign, we know very little about how this campaigning differs across platforms.

The implications of this oversight are both theoretical and methodological. Theoretically, scholars lack an overarching conceptual framework to inform cross-platform research designs. As a result, the operationalization of social media variables across platforms is often inconsistent and incomparable, limiting the attribution of platform-specific effects.

This dissertation provides a theoretical correction to the study of social media and politics through a focus on platforms' digital architectures. Digital architectures are defined as the collective suite of technical protocols that enable, constrain, and shape user behavior in a virtual space. The dissertation's central argument is that the digital architectures of SMPs mediate how users enact political processes through them. Focusing primarily on citizens' political participation, but also politicians' campaigning, I show how these processes manifest differently across platforms in ways that can be attributed to their digital architectures. Moreover, I demonstrate how both politicians and citizens manipulate the digital architectures of platforms to further their political agendas during elections.

To mount these arguments, the dissertation adopts a conceptual, exploratory, and interdisciplinary approach. Its main theoretical contribution, the digital architectures framework, brings together fragments from literatures spanning archeology, design theory, media studies, political communication, political science, social movements, and software engineering. Methodologically, the study combines qualitative and quantitative methods to address the research questions of four individual research articles (Chapters 4-7). The main empirical cases included in the dissertation are the 2015 British General Election, the 2016 Brexit Referendum, and the 2016 U.S Presidential Election.

The structure of the dissertation is as follows. Chapter 1 introduces the dissertation's overarching research questions and design. Chapter 2 situates the digital architectures framework within the existing literature by critiquing existing theoretical approaches to social media and political participation. Chapter 3 outlines the main challenges in studying participation on social media, as well as summarizes the dissertation's methodological approach.

Chapter 4 presents the digital architectures framework through a systematic, cross-platform comparison of Facebook, Twitter, Instagram, and Snapchat. In this chapter, I illustrate how the digital architectures of these SMPs shaped how American politicians used them for political campaigning in the 2016 U.S. election.

Shifting focus from politics to citizens, Chapter 5 examines how the digital architectures of social media structure citizens' political participation. Chapter 5 characterizes the various styles and degrees of political participation through SMPs, and it shows how the architectures of Twitter and Facebook lead to different manifestations of online participation in the context of European politics.

Building on the Chapter 5's conceptual work, Chapters 6 and 7 use digital trace data to empirically investigate citizens' participation on Twitter and Facebook, respectively. Chapter 6 offers a new theory of online political participation by conceptualizing it as a process, rather than as an activity. Chapter 6 develops a typology of political participation and applies it to citizens' use of Twitter in the 2015 British General Election. We find that a small number of highly active citizens dominate the political discussion on Twitter, and these citizens tend to promote right-wing, nationalist positions.

Chapter 7 finds similar patterns in citizens' political participation on Facebook during the 2016 Brexit referendum. Using metadata to chart the commenting patterns of citizens across media and political Facebook pages, Chapter 7 reveals that Leave supporters were much more active in political commentary than Remain supporters. However, this phenomenon is, again, due to a small number of active citizens promoting right-wing, nationalist positions. Few citizens commented on both media and campaign Facebook pages during the referendum, but those who did commented on the media first. This finding, together with the observation that political commentary overwhelmingly took place on media pages, supports the notion that the mainstream media maintain their agenda-setting role on SMPs.

Lastly, Chapter 8 interprets the findings of Chapters 6 and 7 through the lens of digital architectures. I argue that the architectures of Twitter and Facebook create different spaces of publicness, which in turn affects how political participation is actualized across the two platforms. This chapter, and the thesis, concludes with a discussion of why the digital architectures of social media are critical to consider when assessing social media's impact on democracy.

Dansksproget Resumé

Sociale medieplatforme (SMP'er) påvirker stort set alle interessenter i demokratisk politik. Politikere og partier bedriver kampagner på SMP'er, pressen bruger dem til at distribuere politiske nyheder og mange borgere læser, deler og debatterer politiske emner på tværs af sociale mediekonti.

I forsøg på at bedømme de politiske konsekvenser af disse praksisser har forskere hovedsagelig fokuseret på SMP'ers fælles egenskaber frem for forskellene imellem dem. Ved at behandle sociale medier som en sammenholden genre har forskere med interesse for SMP'ers påvirkning af politik set bort fra det forhold at sociale medier er et fællesbegreb for en bred palet af forskellige platforme. Vi ved at politikere og borgere bruger sociale medier til at føre kampagner, men vores viden om hvordan disse kampagner varierer på tværs af platforme er stærkt begrænset.

Konsekvenserne heraf er både teoretiske og metodologiske. Teoretisk mangler forskere en overgribende begrebsmæssig ramme som kan guide studier på tværs af platforme. Det betyder at operationaliseringen af sociale medievariabler på tværs af platforme ofte er inkonsekvent hvilket begrænser muligheden for at identificere platformes individuelle egenskaber.

Denne afhandling bidrager med et teoretisk korreks til studiet af sociale medier og politik gennem et fokus på platformes digitale arkitekturer. Digitale arkitekturer defineres som den kollektive palet af tekniske protokoller som muliggør, begrænser og skaber brugeradfærd i et virtuelt rum. Denne afhandlings centrale argument er at SMP'ers digitale arkitekturer medierer hvordan brugere former politiske processer gennem dem. Ved at fokusere på borgeres politiske deltagelse og politikeres kampagneføring viser jeg hvordan disse processer kommer til udtryk på forskellig vis på forskellige platforme afhængig af deres digitale arkitektur. Endvidere demonstrerer jeg hvordan både politikere og borgere manipulerer de digitale arkitekturer for at fremme deres politiske dagsordener i forbindelse med valgkampe.

For at underbygge disse argumenter følger afhandlingen en konceptuelt undersøgende og interdisciplinær tilgang. Dens primære teoretiske bidrag om digitale arkitekturer trækker på forskningstraditioner fra arkitektur, designteori, mediestudier, politisk kommunikation, statskundskab, sociale bevægelser og software programmering. Metodologisk kombinerer studiet kvalitative og kvantitative metoder for at besvare undersøgelsesspørgsmålene i fire individuelle forskningsartikler (kapitel 4-7). Afhandlingens primære empiriske cases er det britiske valg i 2015, Brexit-folkeafstemningen i 2016, og det amerikanske præsidentvalg i 2016.

Afhandlingens struktur er den følgende. Kapitel 1 introducerer afhandlingens overordnede forskningsspørgsmål og design. Kapitel 2 placerer den digitale arkitektur i forhold til den eksisterende litteratur ved at kritisere fremherskende teoretiske tilgange til sociale medier og politiske deltagelse. Kapitel 3 redegør for de vigtigste udfordringer ved studiet af deltagelse på sociale medier og opsummerer afhandlingens metodologi.

Kapitel 4 introducerer den digitale arkitekturramme gennem en systematisk sammenligning af Facebook, Twitter, Instagram og Snapchat. I dette kapitel illustrerer jeg hvordan de digitale arkitekturer på disse SMP'er formede hvordan amerikanske politikere brugte dem i politiske kampagnevirksomhed ved 2016-valget.

I kapitel 5 flyttes fokuset fra politik til borgere. Her undersøges hvordan sociale mediers digitale arkitekturer strukturerer borgeres politiske deltagelse. Kapitel 5 karakteriserer de forskellige stile og grader af politiske deltagelse på SMP'er og det viser hvordan arkitekturerne på Twitter og Facebook fører til forskellige manifestationer af online deltagelse i en europæiske politisk kontekst.

Kapitlerne 6 og 7 bruger digitale “trace data” for at undersøge borgeres deltagelse på Twitter og Facebook. Kapitel 6 bidrager med en ny teori om online politisk deltagelse ved at begrebsliggøre det som en proces i stedet for en aktivitet. Kapitlet udvikler en typologi for politisk deltagelse og tillemper den på borgeres brug af Twitter i det britiske parlamentsvalg i 2015. Resultatet viser at et lille antal yderst aktive borgere dominerer den politiske diskussion på Twitter og at disse borgere har tendens til at promovere højreorienterede, nationalistiske synspunkter.

Kapitel 7 identificerer et lignende mønster i borgeres politiske deltagelse på Facebook i forbindelse med Brexit folkeafstemningen i 2016. Ved hjælp af metadata kan mønstre i borgeres kommentarer på tværs af medier og politiske Facebook sider kortlægges, hvilket viser at Leave-tilhængere var langt mere engagerede i politisk kommentering end Remain-tilhængere. Dette skyldes dog et lille antal aktive borgere som promoverede højreorienterede, nationalistiske synspunkter. Få borgere kommenterede på både medie- og kampagne-Facebooksider under folkeafstemningskampagnen og de som gjorde kommenterede på mediernes sider først. Dette resultat viser, sammen med observationen at politiske kommentarer i høj udstrækning fandt sted på mediesider, at mainstream medier fastholder deres dagsordensættende position på SMP’er.

Afslutningsvis tolker kapitel 8 resultaterne fra kapitel 6 og 7 med et digitalt arkitekturperspektiv. Jeg argumenterer for at Twitters og Facebooks arkitektur skaber forskellige rum for offentlighed, hvilket påvirker hvordan politisk deltagelse finder sted på de to platforme. Kapitlet afsluttes med en diskussion af hvorfor det er centralt at have digitale arkitekturer for øje når man evaluerer sociale mediers indflydelse på demokratiet.

I. Introduction and Structure

“Thence we sailed on with a grieving heart,
and we came to the land of the Cyclopes, an
overbearing and lawless folk...

Neither have they council **assemblies** nor customs,
but they dwell atop the peaks of lofty mountains
in hollow caves...”

ἔνθεν δὲ προτέρω πλέομεν ἀναχήμενοι ἦτορ:
Κυκλώπων δ’ ἐς γαῖαν ὑπερφιάλων ἀθεμίστων
ἰτόμεθ’...

τοῖσιν δ’ οὔτ’ **ἀγοραὶ** βουλευφόροι οὔτε θέμιστες,
ἀλλ’ οἳ γ’ ὑψηλῶν ὄρεων ναίουσι κάρηνα
ἐν σπέσσι γλαφυροῖσι...

- *The Odyssey*, Book 9, Lines 105-7 & 112-14

1.1 The Allegory of the Agoras

For many, the most memorable episode in Odysseus’ journey is his encounter with the Cyclopes and the blinding of mighty Polyphemus. In recounting his harrowing tale to the Phaeacians, Odysseus takes special care to introduce the Cyclopes as uncivilized brutes. The Cyclopes not only lacked social customs and laws; these giants did not practice the basic mechanism by which to establish them: assembly.

Democracy, as a governing ideal, is actualized through assembly. Voters assemble to elect leaders, who in turn assemble to make policy. In less institutionalized settings, small groups of citizens assemble in coffeehouses and taverns, and larger groups assemble in public spaces to voice collective grievances.

Assembly is, and always has been, a central facet of democratic life. The right to assembly is enshrined in the First Amendment of the U.S. Constitution, and regular assemblies among Icelandic chieftains – first held on the plains of Thingvellir in 930 A.D. – have given Iceland grounds to lay claim to the longest running parliament in the world. However, the roots of assembly go back to the very foundation of democracy itself, and I begin this dissertation with an allegory to foreground the argument that will flow through the following pages.

In Ancient Greece, the word for assembly was “agora,” shown in bold in the quote above. Agora also referred to the physical spaces where citizens assembled. Nearly all Greek city-states had a centrally located agora, which comprised an open space circumscribed by commercial shops, administrative buildings, and religious temples. Greek citizens would gather regularly in the agora “to buy and sell, to talk politics, and to make decisions about the affairs of their city” (McGregor, 2014, p. 78). Quite literally, agoras were one-stop-shops serving a variety of civic and political functions: social gatherings, economic commerce, political administration, and religious worship. Archeologists have described the Greek agora as “*the* centre of civic life” (Thompson, 1954, p. 10) and “the political heart of a city” (Donati, 2010, p. 1).

It is tempting, perhaps even natural, to focus on the commonalities of agoras across Greek city-states. All agoras were places of assembly, located roughly in the city center, and served similar civic and political functions. However, if we start to compare agoras like archeologists, we begin to see that agoras, in fact, differed quite substantially. No two agoras were exactly alike, and idiosyncrasies in their design reflect distinct cultural and political practices suited to the context of an individual city-state.

Donati (2010, p. 2), in a fascinating study of agoras in the oft-neglected Peloponnese, reinforces this line of argument when he writes:

“While it is true that certain trends can be identified over time, the agora was inherently heterogeneous and evolved under different circumstances unique to a particular city. Elements which characterized certain agoras might have been radically different elsewhere. This is because, like all spatial elements within an urban context, the Greek agora responded and interacted with a unique ensemble of social, political, religious, and economic needs. The factors that contributed to its structure and mechanics were distinctive, and its organization and use never reappeared exactly the same way in another urban context.”

To help illustrate these points, let us follow Thompson (1954) in comparing the famous Athenian Agora with the agora of lesser known Priene, an Ionian city with an agora quite typical for that architectural style. The first point of order is to establish the temporal and spatial contexts of the cities themselves. The Athenian settlement dates back to the Neolithic period (around 3,000 B.C.), and the site was strategically chosen to be situated atop the Acropolis, a protective hill. Priene, meanwhile, was founded much later in 350 B.C. as a port city, and its development was heavily influenced by the much larger and powerful Athens.

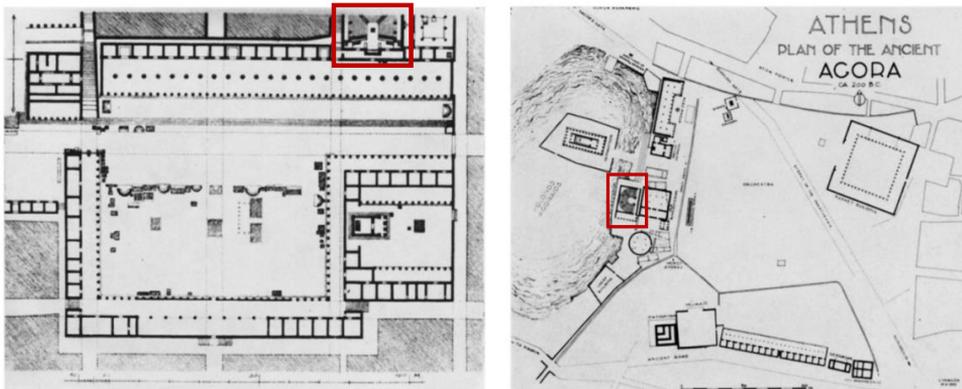


Figure 1: Agora of Priene (Left) and Athenian Agora (Right) circa 200 B.C.
Red Rectangles Mark the Locations of Bouleuterion (Buildings for Assembly)

The Agora of Priene, developed two millennia after the settlement of Athens, formed a near-perfect rectangle with sharp, 90-degree angles. Three sides of the rectangle were bordered by “stoas,” elongated buildings with colonnades designed to both provide shelter and maximize light (McGregor, 2014, p. 80). The resulting “horseshoe” pattern, typical of Ionian agoras after the advancements in urban design made by Hippodamus (Wycherley, 1942, p. 22), housed a promenade lined with commercial shops.

Similar to the design of many modern American strip malls, the three stoas formed a covered enclosure for citizens to buy goods in any weather – rain or shine. Interestingly, all buildings serving a government or assembly function *were set opposite from the horseshoe*, in order to minimize noise from the market (Thompson, 1954). We can also assume that the clustering of political buildings served the practical purpose of expediting political processes. Here, we are beginning to see how technology, design, and architecture work together to shape politics.

Before continuing that line of argument further, let us briefly finish the comparison by switching our focus to the famous Athenian Agora. Founded two millennia before Priene, Athens did not have originally have an agora, as it was not originally a democracy. As I argued above, democracy and assemblies go hand-in-hand. In the early Iron Age, Athens had an aristocratic form of government, and its administrative buildings were located – literally and figuratively – above the people on the north slope of the Acropolis. Not until the constitutional reforms of Solon did judicial and administrative buildings begin to appear at the Agora’s current site, symbolizing a metaphoric levelling of power and people. As time progressed, but long

before the aforementioned city-planning breakthroughs of Hippodamus, more buildings were added to fit the practical and administrative needs of the city. The result is the sporadic architectural layout shown in Figure 1.

For a time, the Athenian Agora housed all the buildings and facilities needed to support the burgeoning Greek democracy: executive, legislative, judicial, commercial, religious, and theatrical. After the reforms of Kleisthenes (such as equality among citizens and the introduction of ostracism), political assemblies took on a more prominent role in society and began to meet more frequently. Unlike the Agora of Priene, which was explicitly designed around creating a quiet space for assembly, the Athenian Agora became too rambunctious for effective political assemblies to be held on a regular basis. As a result, assemblies moved offsite to the Pnyx, a hill that provided better acoustics and a more open space for egalitarian debate. Over time, the assembly would move to the Theater of Dionysus to accommodate larger occupancy, and the Agora would undergo massive remodeling to divide commercial activity from civic and political affairs (much in the same way as was already designated by the Agora of Priene). While we could excavate this history much more thoroughly, let us now turn to driving the comparison home.

Whereas the Agora of Priene highlights how design can shape the civic and political interactions that occurred within the agora, the Athenian example demonstrates quite the opposite: civic and political development largely shaped the Agora's eventual design. In the end, both agoras would serve as sites enacting similar civic and political functions, including the crucial democratic practice of assembly. Yet, architectural differences between the two agoras, influenced by a range of political, cultural, and historical factors, likely afforded certain modes of operation and customs for how these functions were practiced. Sadly, we'll never be able to observe the day-to-day interactions of Ancient Greeks across the two agoras; they didn't have digital trace data back then.

Still, the allegory of the agoras leaves us with five immediate conclusions. First, like all public spaces, agoras reflect an interplay between politics, culture, architects, and citizens. Second, agoras were demarcated spaces that hosted an array of civic and political functions. Third, agoras and their spaces changed over time to adapt, and accommodate, these civic and political functions. Fourth, agoras have always contained a commercial component. And fifth, it seems that we can examine particular design elements within and across agoras in a way that reveals something deeper about political life.

The question then becomes: *how do the architectures of such public spaces influence political processes?*

1.2 The Digital Agora(s)

Today, citizens assemble online. The rapid development of web-based software, coupled with the democratization of computer hardware, has opened up new opportunities for citizens to interact digitally using computers, tablets, smartphones, and even smartwatches. These devices serve as gateways to access the wide array of platforms that facilitate commerce, peer-to-peer connectivity, and indeed, participation in politics. Much like the advancements in city planning made by Hippodamus, technological advancements made by software developers have afforded the construction of platforms that neatly circumscribe users' daily interactions within virtual public spaces.

In this dissertation, I am concerned specifically with citizens' assembly on social media platforms (SMPs), a concept that will be more thoroughly explicated in Chapter 2. For now, let social media refer to the range of online services that facilitate connections among users who

can access, create, and redistribute digital content. These services include platforms that many readers will be familiar with, such as: Facebook, Twitter, Instagram, YouTube, Pinterest, and Snapchat. As virtual spaces where citizens gather, shop, and talk, social media platforms can certainly be considered modern day “digital agoras” (Kirk and Schill, 2008).

However, as I have argued above through the lens of archeology, no two agoras are exactly alike. Their designs are shaped by political, cultural, and commercial factors, which in turn influence how politics, culture, and commerce manifest within them. This dissertation therefore begins from the premise that SMPs should be approached as most different cases, rather than similar ones. While their architectures may afford similar functions (such as talking about politics), subtle design differences may demonstrably impact how these functions are enacted across platforms.

For example, what is the significance of a tweet being limited to 280 characters, whereas a Facebook post allows for 63,206? Or what does it mean that Facebook’s algorithms heavily filter content, whereas Twitter feeds focus more on instantaneous broadcasting? The fieldwork conducted by scholars of social movements shows that these differences do, in fact, weigh heavily on how platforms are utilized for protest activity. While both Facebook and Twitter facilitate what Bennett and Segerberg (2013) refer to as connective action, their distinct architectures have direct implications for how connective action plays out in practice. Another example from the Greeks, this time from recent history, will help illustrate how.

In 2011, roughly two millennia after the heyday of the Athenian Agora and just a drachma’s throw from it, Greek citizens assembled in Syntagma Square to protest a series of austerity measures proposed to address a sovereign debt crisis. The Aganaktismenoi movement, inspired by the Indignados movement in Spain and the Occupy Wall Street movement in the U.S., was a protest organized almost solely through an anonymous Facebook page (Sotirakopoulos & Sotiropoulos, 2013; Treré *et al.*, 2017). While the Facebook page directly called for a protest that would attract over 20,000 citizens, post-hoc analysis of the Twitter conversation reveals that only 6% of tweets from citizens included a call to action (Theocharis *et al.*, 2014). Instead, the majority of tweets were used to spread information about the protests.

One activist from Treré *et al.*’s (2017, p. 414) study clearly outlines how differences between the two platforms lend to different functions in the context of the protest:

“Of course there are differences. Twitter is the king of protest reporting, because it’s faster, direct... But then when you want to comment on what has happened Twitter is problematic because it doesn’t give you enough space to post and you need longer posts. You may need to write an article and publish it through a blog or a website, and maybe after that you link it through Twitter. Or even if you don’t have time or don’t have enough materials to write an article, you write a post on Facebook that can be something in between.”

Here, both the length of characters allowed in a post, as well as different levels of algorithmic filtering, influence how and what activists decide to post on social media. While the specific use of one platform may vary across protests and national contexts (Theocharis *et al.*, 2014), the tendency for protestors to utilize different platforms for specific functions is quite a stable pattern. Gerbaudo (2012, p. 17) finds that across protests in Egypt, Spain, and the U.S., “Facebook is used as a recruitment platform,” while “Twitter is mainly employed as a means of internal coordination within the activist community.” The similar use of these platforms across such varied contexts seems to suggest that factors intrinsic to the platforms contribute to how SMPs are deployed during protests.

The social movement literature has clearly established that platforms serve different functions in the context of protest mobilizations. Through facilitating extra-parliamentary activism, these functions are undoubtedly political. However, few scholars have taken a platform-centric approach that establishes linkages between specific design mechanisms and political activity during elections. What I am interested in, and what this dissertation will reveal, is how the technological designs of SMPs shape how politicians leverage platforms to campaign, as well as how citizens use them to enact political participation. While SMPs are all digital agoras, specific platforms function quite differently in practice. Therefore, the main theoretical thrust of this thesis is that functional differences in the political deployment of social media technologies can be attributed to their digital architectures: the technical protocols that facilitate, constrain, and shape user behavior in a virtual space.

1.3 Research Question and Design

My argument, then, is quite a simple one. The technological design of SMPs – their *form* – necessarily affects how they *function* politically. The challenge lies in explicating how different design features and protocols give rise to various political functions for end users. To address this challenge, I pose the dissertation’s overarching research question:

How do the digital architectures of social media platforms mediate practices of political communication?

This research question situates the project’s ambitions squarely within political communication studies, an established sub-field of political science. Political communication research deals broadly with the communication practices of three societal actors: political elites, the media, and citizens. While all three actors are represented in this study, the primary empirical focus is on politicians (Chapter 4) and citizens (Chapters 5-7). I therefore aim to expound how SMPs influence practices of political campaigning (in the case of politicians) and political participation (in the case of citizens).

Theoretically, I adopt a highly conceptual, exploratory, and interdisciplinary approach. The novelty of social media demands it. The dissertation’s main theoretical contribution, the digital architectures framework, brings together fragments from literatures spanning archeology, design theory, media studies, political communication, political science, social movements, and software engineering. My aim in developing this framework is to provide the scholarly community with a conceptual heuristic to approach cross-platform research and, moreover, supply a vernacular for discussing the technological back-ends of SMPs that have remained woefully unexplored in political research thus far.

The dissertation’s empirical work primarily revolves around three electoral case studies: the 2016 U.S. Election (Chapter 4), the 2015 British General Election (Chapter 6), and the 2016 Brexit Referendum (Chapter 7). The American and British contexts were chosen since both countries maintain high social media adoption rates and, particularly in the case of the U.S., can be considered pioneers in digital campaigning. Furthermore, the two countries share similar electoral systems (first-past-the-post), and different electoral systems have been shown to affect political candidates’ social media activity (Obholzer & Daniel, 2016). Finally, both countries belong to the same “North Atlantic” media system (Hallin & Mancini, 2004; Brüggemann *et al.*, 2013), exhibiting high levels of commercialization, strong journalistic professionalism, and a free – albeit often partisan – press.

Methodologically, the dissertation employs both qualitative and quantitative approaches. Examples of the former include semi-structured interviews (Chapter 4) and actor-type categorization (Chapter 6). Quantitative approaches include the computer-assisted content

analysis of Twitter data (Chapter 6) and the tracing of Facebook metadata (Chapter 7). To my knowledge, this type of metadata tracing is the first such application in political research and as such, marks a methodological contribution in its own right. In the following section, I detail the dissertation’s theoretical and methodological approaches more thoroughly by providing an overview of the individual research projects that comprise it.

1.4 Structure and Overview of the Dissertation

This dissertation is structured as an article-based dissertation, rather than a monograph as such. According to the rules stipulated by the Department of Political Science at Copenhagen University, an article-based dissertation should include two parts. One is a series of publishable research articles that are thematically connected and speak to a common research question. The other is a frame, which should: provide coherence to the research articles, expand upon the dissertation’s theoretical and methodological approach, and highlight the dissertation’s contribution to the field.

Chapters 1, 2, 3, and 8 constitute the dissertation’s frame. This chapter, Chapter 1, introduces the main research question and the project’s overall design. Chapter 2 situates the dissertation’s main theoretical contribution, the digital architectures framework, within the existing state-of-the-art on social media research. Chapter 3 reflects on some of the key methodological challenges to studying social media, while outlining the dissertation’s overall methodological approach. Chapter 8 concludes the project by synthesizing the findings of the research articles and punctuating their relevance to fields of political science and political communication.

Chapters 4-7 of this dissertation comprise four individual and published research articles, each with their own distinct research questions, methodologies, and contributions to social science. However, two overarching themes unite these chapters. The first is a shared focus on how users enact practices of political communication through social media – namely political campaigning (Chapter 4) and political participation (Chapters 5-7). The second theme is an implicit or explicit attention to how platforms’ digital architectures mediate these practices. Taken together, the findings of the individual projects help answer the project’s research question by explicating how political communication practices across social media differ in ways that are inextricably linked to a platform’s digital architecture.

In the remainder of this chapter, I briefly introduce the individual research articles and their main findings. Table 1 below presents an overview of the articles as well as their publication outlets.

Ch.	Author(s)	Title	Type	Outlet
4	Bossetta, M.	The Digital Architectures of Social Media: Comparing Political Campaigning on Facebook, Twitter, Instagram, and Snapchat in the 2016 U.S. Election	Journal Article	<i>Journalism & Mass Communication Quarterly</i>
5	Bossetta, M., Dutceac Segesten, A., & Trenz, H-J.	Engaging with European Politics through Twitter and Facebook: Participation beyond the National?	Book Chapter	<i>Social Media and European Politics</i>
6	Dutceac Segesten, A., & Bossetta, M.	A Typology of Political Participation Online: How Citizens used Twitter to Mobilize in the 2015 British General Elections	Journal Article	<i>Information, Communication & Society</i>
7	Bossetta, M., Dutceac Segesten, A., & Trenz, H-J.	Political Participation on Facebook during Brexit: Does User Engagement on Media Pages Stimulate Engagement with Campaigns?	Journal Article	<i>Journal of Language and Politics</i>

Table 1: Research Articles Included in the Dissertation

Chapter 4: Digital Architectures and Political Campaigning in the United States

Chapter 4 constitutes the dissertation's main theoretical contribution by presenting the digital architectures framework in detail. I identify four key aspects of a platform's architecture that mediate practices of political communication: network structure, functionality, algorithmic filtering, and datafication. After comparing the architectures of four SMPs (Facebook, Twitter, Instagram, and Snapchat), Chapter 4 applies the digital architectures framework to the political campaigning practices of American politicians during the 2016 U.S. primary elections. Although the bulk of the dissertation's research articles focus on citizens' political participation, Chapter 4 starts out with an empirical focus on politicians because their online activity is, from a methodological perspective, more easily observable than citizens'.

By examining the campaigning practices of a small number of elite politicians, Chapter 4 is able to deliver a strict and rigorous cross-platform research design. Using qualitative interviews with campaign managers and quantitative social media data from the platforms themselves, the chapter illustrates how the in-built architectural features of a platform, and the measurable data that platforms provide, underpin how political actors leverage SMPs for electoral campaigning. Furthermore, I argue that the possibilities for action provided by a platform – i.e., its affordances – are necessarily underpinned by its architecture. Chapter 4 therefore aims to show that an analysis of features, and how campaigns interact with them, is a more empirically useful heuristic than affordances when conducting cross-platform research.

Chapter 4's empirical analysis offers three key findings. First, despite differences in the digital architectures of the platforms studied, highly resourced American campaigns shared much of the exact same content across platforms. Thus, while some scholars argue that political “campaigns must produce their own creative content for very different platforms like Facebook, Instagram, Twitter, and Snapchat” (Kreiss et al., 2017, p. 2), Chapter 4 finds that campaigns recycled much of the same content across platforms. The amount of similarity or difference in cross-platform communication is intrinsically linked to the platforms' digital architectures. In particular, the types of multimedia supported by the platform, and type of hardware it can be accessed from, shape cross-platform practices of political communication.

This architecture-communication link is clearly evidenced in the study by Snapchat, whose ephemeral messages and hardware exclusivity led to a different type of visual content than Instagram. Yet, Snapchat messages could be saved by the campaign and then uploaded to Instagram, in order to share raw glimpses of the campaign trail with supporters. Similarly, the relatively high level of communication crossover between Facebook and Instagram can be explained by similarities in their supported multimedia, hardware accessibility, and cross-platform integration (i.e., users can post from Instagram to Facebook simultaneously). In the cases of Donald Trump, Ted Cruz, and Hillary Clinton, over half of the content uploaded to Instagram around Super Tuesday was also present on Facebook.

The second finding of Chapter 4 is that by both qualitative and quantitative accounts, Facebook was the dominant platform for political communication in the 2016 election cycle. While this somewhat expected finding can be explained by Facebook's critical mass of users, the added contribution of Chapter 4's analysis is that Facebook's dominance can also be explained using the digital architecture framework. In terms of network structure, Facebook's Public Pages feature allows users to easily search and follow prominent candidates (whereas identifying official political accounts on other platforms is more difficult due to parody and false accounts,

which relates to how searches are displayed via the graphical user interface). Facebook's architectural design choice to allow hyperlinking to external web pages, a functionality not supported by Instagram or Snapchat, allows politicians to use Facebook as a gateway to drive traffic to campaign websites. Particularly in the American context, the ability to redirect users to a campaign's website is critical for fundraising, collecting data on citizens, and encouraging newsletter sign-ups to solicit future involvement with the campaign. While the hyperlinking functionality is useful for campaigns to redirect Facebook users to campaign websites, the visibility of these posts is heavily impacted by Facebook's algorithms. However, Facebook offers campaigns the ability to override algorithmic filtering through pay-to-promote services, which are useful for campaigns to reach voters outside their existing subscriber bases. Similarly, Facebook's highly sophisticated matching, targeting, and analytics suites allow campaigns to both 'plug-in' external data (such as voter files) and 'pull-out' internal data generated by the platform (such as engagement rates). Together, the various features of Facebook's digital architecture work in concert to provide political campaign with a centralized, powerful platform from which to both contact users while collecting data on them.

Still, the 2016 election cycle in the United States was novel in that it provided a first glimpse into how campaigns utilize newer market entrants in the social media sector. While Facebook, Twitter, and YouTube were heavily utilized by the Obama campaign in 2012 (Bimber, 2014), the 2016 cycle marks the most fractured social media landscape to date. Chapter 4 therefore sought to test when and why campaigns adopt newer platforms, which in this case would be Instagram and Snapchat. The study's third finding is that while leading politicians were active on all platforms to varying degrees, Instagram was universally more adopted than Snapchat by campaigns. Again, this can be explained through the lens of the digital architectures framework. Snapchat's functionality constrained campaigns in terms of both multimedia and hardware. Snapchat requires that users film content directly from (only) a mobile device, and at the time, Snapchat messages were limited to 10 seconds per clip. Compared to Instagram, which allows campaigns to filter and publish content from either a phone or computer, Snapchat communication essentially results in a devolution of image control and the inability to post at strategic time points. Moreover, during the primaries, Snapchat lacked a comprehensive datafication incentive for campaigns to adopt the platform; campaigns could not even gauge view rates without counting them manually. While Snapchat might have been considered useful to campaigns since the platform lacked algorithmic filtering (thus allowing a direct contact line to voters), Snapchat's functionality and datafication protocols are likely key reasons why the platform was adopted the least by American politicians during the primaries.

Chapter 5: Engaging with European Politics through Twitter and Facebook

Like Chapter 4, Chapter 5 is primarily a theoretical contribution that applies the digital architectures approach to the study of citizens' political participation. In this chapter, my co-authors and I argue that SMPs increase citizens' access to political information while broadening their repertoires for communication, which we break down into four distinct categories. Citizens can *make*, *comment*, *share*, or simply *listen* to content on nearly all SMPs. Furthermore, as citizens engage in these communicative acts – or what we refer to as degrees of participation – they can practice citizenship by assigning themselves various roles in democratic life. They can act as “witnesses” by enacting citizen journalism and reporting from, for example, protests and demonstrations. Or, they can take up partisan positions and act as “advocates” for political parties during elections. Additionally, they may act as moral “judges”, condemning acts of terrorism or expressing solidarity for marginalized groups.

However, digital architectures structure how citizens engage in these participatory activities on social media. By comparing the architectures of Twitter and Facebook, we hypothesize that different network structures, algorithmic filtering, and features (such as the Twitter hashtag) support the abovementioned citizen models unevenly. For example, the dyadic “Friend” structure is likely to support non-divisive moral content in private networks, as partisan content might be off-putting and divisive to real-world connections offline. Twitter’s lack of algorithmic filtering and “Follow” structure, by contrast, attracts a news-interested and weak-tie user base that is more likely to engage in partisan political commentary (and signal support for a party or cause by using a hashtag). Given difficulties in collecting social media data retroactively, we illustrate our case by using key examples dealing with European politics, such as the 2014 European Parliament elections and the Syrian refugee influx.

Here, it is worth noting that Chapter 5 has been written first, chronologically. The digital architectures concept in this chapter is therefore less developed than in Chapter 4. Indeed, the comparison in Chapter 5 can be considered the “seed” of a what I later developed into a more expansive framework. I mention this to not only stave off confusion from the reader but also, to illustrate the theoretical progression that the University of Copenhagen requires in an article-based dissertation. In the following two chapters, I also demonstrate methodological progress through utilizing state-of-the-art computational methods in analyzing Twitter and Facebook data in Chapters 6 and 7, respectively.

Chapter 6: Citizens’ Political Participation on Twitter during #GE2015

Chapters 6 and 7 form the core empirical chapters of this dissertation. Chapter 6 focuses on citizens’ electoral participation through Twitter, while Chapter 7 casts its gaze on the political commenting patterns of citizens on Facebook. Building on Chapter 5’s theoretical work, Chapter 6 develops a typology of political participation aimed to isolate citizens’ political mobilization attempts, which are operationalized as calls to action.

Since most political studies of social media focus on politician’s campaigning, an explicit focus on citizens’ activity during elections is particularly novel. To my knowledge, Chapter 6 is only the second study to focus on citizens’ digital trace data in an electoral context. This lack of existing methodological work on citizens can be explained by difficulties in collecting and analyzing citizen-level data (*vis-à-vis* more public actors like politicians and the media).

The focus on citizens was warranted; Chapter 6 generates three valuable scientific contributions. Interestingly, we find that citizens – not political parties – were the most active social actor category issuing mobilizing calls for action. Moreover, we find that only a handful of highly active citizens generated the large proportion of citizen-driven calls to action using the official election hashtag. These highly active citizens trended toward extreme partisan affiliations and were typically supporters of the UK Independence Party (UKIP) or the Scottish National Party (SNP). Apart from the empirical findings, Chapter 6 also offers a new theoretical approach to political participation tailored specifically to social media environments. We conceptualize political participation as a process, rather than any one specific act or set of activities.

Although not directly addressed in Chapter 6, political communication scholars are slowly pivoting to a focus on political expression online, rather than information exposure (Cho et al, 2018; Shah et al, 2017; Shah 2016; Gil de Zuniga *et al.*, 2014). Succinctly put, the argument is that the composition of social media messages, the act of publishing them, and the act of receiving engagement from them as governed by the platform’s digital architecture, may exert “self-effects” on the user (Pingree, 2007). We precipitated this line of thinking by focusing on

political participation as a process, where information seeking and exposure may eventually drive higher forms of political engagement, as suggested by previous studies (Vaccari *et al.*, 2015a; Cantijoch *et al.*, 2016).

Given the high levels of citizen-driven mobilization Chapter 6 finds on Twitter, the dissertation posits that attempts to mobilize and persuade others on social media constitute a new, but nevertheless legitimate, form of political participation. Since it is difficult to accurately assess the effect of citizen-driven calls to action on the offline mobilization of others (such as voting), I argue that taking a user-centric approach to analyzing social media activity has merit in its own right. However, in order to examine how political participation is exhibited on Twitter, we need to understand how the digital architecture of the platform enables or constrains participatory activities.

In Chapter 6, we identify four types of political participation, relating to Twitter's digital architecture: in-text calls for action, hashtag commands, sharing calls for action, and frequent postings. At least one scholar has critiqued our categorization as "not an especially interesting result [since] it is precisely these forms of expression that Twitter makes available to its users" (Papazu, 2017, p. 130). Yet, there is no inherent guarantee that users will adopt specific features in the context of political expression – to argue so trends toward technological determinism. Moreover, it is not the categorization of activity that is interesting, but rather the theorizing of how architectural features and users interact to generate online political processes.

As we argue in the chapter, mobilizing calls to action need to be widely disseminated in order to gain traction. Chapter 6 identifies the main strategies that British citizens utilized on Twitter for gaining widespread dissemination, while revealing that patterns of online activity can correlate with certain partisan preferences. Additionally, as will be discussed in Chapter 7, the correlation between activity and political ideology can be exhibited across platforms (we find that users aligned with UKIP's political platform were disproportionately active in the Brexit debate on Facebook). Thus, if our findings on Twitter are constant also on Facebook in the same national context, it becomes a valuable scholarly heuristic to examine how the same political phenomenon manifests across platforms. Here, necessary attention must be paid to the platforms' digital architectures regarding what activities citizens are allowed, not allowed, and encouraged when participating in the political process online.

Chapter 7: Political Participation on Facebook during Brexit

Chapter 7 examines citizens' political participation on Facebook during the Brexit debate. Here, we use comments on political campaigns' Facebook pages as the measure for political participation. The reason we focus on comments is that compared to liking or sharing a post, commenting is typically a higher resource-intensive form of online engagement in terms of time, effort, and cognitive processing. Moreover, the act of leaving a comment to a campaign's post increases its visibility in other citizens' News Feeds. Therefore, commenting furthers the organic reach of a post and exposes peers to its information. While Twitter also allows commenting in the form of "Replies", Replies have less of an effect on the distribution of information on Twitter, since the platform's algorithms are focused more on chronology than relevance.

Although Chapter 7 does not examine digital architectures specifically, the findings highlight how similar political phenomenon – such as political participation – can occur across platforms. In line with the findings of the previous chapter, we find that Leave supporters – and in particular, ideologically extreme ones – were by far the most active during the Brexit debate.

Moreover, like Chapter 6 finds on Twitter, the large majority of public Facebook activity during the Brexit debate was initiated by a small number of highly active users promoting nationalism.

Apart from its theoretical approach and findings, Chapter 7 presents a methodological contribution in its innovative use of Facebook metadata. We charted citizens' commenting patterns by tracing their "user_IDs", a string of numbers that Facebook assigns to each user profile. This is, to my knowledge, the first study in a political context that employed the use of user_IDs. Even before the throttling of its Graph API Facebook began removing user_IDs from its metadata shortly after the Cambridge Analytica scandal. Thus, Chapter 7 offers a rare glimpse into citizens' political expression patterns across media and political campaign pages during a highly contentious plebiscite.

Together, the four research chapters help answer the dissertation's research question by revealing how users enact political processes through social media. By taking a cross-platform, comparative approach, the dissertation aims to expound similarities and differences in how political processes unfold on SMPs during elections. Theoretically, the overarching focus of this work is how the digital architectures of SMPs mediate these political processes. In the following chapter, I outline the theory of digital architectures in detail and situate the concept within the existing political communication literature.

II. Theoretical Concepts and Critiques

In this theoretical chapter, I situate my understanding of digital architectures within the state-of-the-art in social media research. Through doing so, I engage with several key concepts to form the dissertation's theoretical approach: platforms, logics, architectures, affordances, and political participation. As will become clear in the following pages, I do not necessarily find the concepts of media logics or affordances to be particularly useful in the study of social media. However, I incorporate them into my framework here to illustrate how my understanding of digital architectures fits with the existing literature.

To summarily present my argument at the outset, I approach social media **platforms** in a way that attributes agency to both developers and users. The former design platforms by transposing social media **logics** into code. Collectively, this code forms the suite of features, interfaces, and protocols that I refer to as **digital architectures**. Users, meanwhile, navigate through this architectural space and activate embedded protocols by interacting with the platform. This relationship between user and technology offers several action possibilities that the literature has couched as **affordances**. One of these action possibilities, I argue, is political participation in politics. By creating, distributing, or responding to political content online, social media users can enact citizenship digitally. However, digital architectures mediate how **political participation** can be practiced on a platform, and therefore the digital architectures of SMPs become important objects for empirical analysis and subsequently, theory building.

The chapter is divided into four sections. In Section 1, I break down the concept of social media platforms (SMPs) into its three component parts: social, media, and platform. After offering an operational definition of SMPs, I argue that the general terminological shift away from “social networking sites” to “social media platforms” (Helmond, 2015) is the result of changes in SMPs’ form and function over time. Then, in Section 2, I link an SMP’s form and function through the lens of design theory, in order to argue that conceptually mapping the two is a useful heuristic to study what I refer to as digital architectures. In Section 3, I critique the concept of affordances in detail and argue that digital architectures underpin any so-called affordance of social media. Finally, in Section 4, I make the case that political participation can be considered an affordance of social media, and therefore scholars can study how users interact with a platform’s digital architecture to understand how political participation unfolds within and across platforms.

II.1 Social Media Platforms

To begin, the term “social” is the least valuable component in delimiting the core characteristics of a social media platform. As Papacharissi rightly notes (2015, p. 1), “All media foster communication and are by definition social.” Yet, all media do not operate in the same fashion. The structures and protocols that underpin a media influence how it selects, organizes, and presents content. Comparative media scholars, for example, have long argued that structural differences in the development of media give rise to regionally diverse media systems (Hallin & Mancini, 2004). For legacy media like print and television, rigorous empirical tests show that these systems have been “remarkably stable” over time (Brüggemann *et al.*, 2013, p. 1060).

SMPs, by contrast, have undergone drastic structural changes within just the past decade. In being programmable, SMPs operate via a more adaptive and fluid series of protocols than those of traditional media. As a result, delimiting a core set of characteristics with which to define

social media has proven difficult and in need of periodic updating (Ellison and boyd, 2013). The reason, I argue, is that changes in SMPs' structural *form* have influenced their *function* for users. Regarding form, SMPs have rapidly developed their back-end infrastructures to become dynamic computational platforms, rather than static internet sites. Functionally, social media increasingly act as gateways to access and distribute media, rather than sites to network.

The distinction between form and function is helpful to disentangle the complex relationship between software developers, the platforms they create, and the users who engage with them. Developers *form* technologies, which in turn provide certain *functions* for users. Both developers and users exhibit agency when they manipulate platforms, but this manipulation occurs on two divergent planes. One is a platform's *back-end*: the interconnected web of databases and computer code that give rise to a platform and govern its operation. This is the realm of developers. The other is a platform's *front-end*: the graphic interfaces and features that invite engagement from users.

An operational definition of social media platforms needs to recognize the agency of both developers and users as they manipulate the platform through the back-end and front-end, respectively. I therefore define social media platforms as:

Programmable software services that mediate, moderate, and measure social interactions between users, who can access, create, and (re)distribute content in line with the software's parameters and protocols.

The first part of this definition relates to developers and their structuring of a platform's back-end. The protocols put in place by developers mediate how (and with whom) users can interact. Developers also set the parameters for what types of interactions are appropriate on the platform, and they actively monitor content on the platform through a mix of computational and human moderation (Gillespie, 2018). In addition, the activities of users are constantly measured and quantified. This datafication (Mayer-Schönberger and Cukier, 2013) of user activity helps inform how the platform is programmed in the future. As I will argue below, the cycle between programming (developer input) and datafication (user output) is a defining feature of an SMP's back-end as well as its business model.

The second part of the definition places users in focus and concerns primarily how they interact with a platform's front-end. Users' ability to access, create, and distribute content is ultimately set by the parameters and protocols put in place by developers. However, users still maintain a certain degree of autonomy on the platform through being able to "conduct a heterogeneous array of activities" (Cohen, 2017, p. 145). Albeit heterogeneous, these activities always involve some form of accessing, creating, or distributing content, which are all functions traditionally associated with mass media.

The first part of my definition therefore concerns the "platform" element of SMPs, whereas the second part highlights their functional role as "media." Stressing these two terms is important, as scholars increasingly favor a terminological shift away from "social networking sites" to "social media platforms" (Helmond, 2015). This definitional refinement is important for two reasons that again, can be conceptualized as relating to an SMP's function and form.

First, replacing "networking" with "media" better reflects how social media currently function (i.e., as media). Ellison and boyd (2013, p. 7) highlight the increasing prominence of "media streams" on social media (such as Facebook's News Feed), whereas "traversing connections has lost its salience as the core participatory activity." While social media do foster networking by facilitating connectivity among users, their computational protocols also preside over the distribution of information across the platform. SMPs function similar to traditional news

media in that they actively filter and select content for a base of users, both through personalized algorithmic recommendations (DeVito, 2017) as well as through their policing of content (Gillespie, 2018).

Moreover, despite rarely creating content themselves, social media platforms increasingly demonstrate the capacity to act as gateways for mainstream news media. In the United States and Western Europe, SMPs have now overtaken print as a source for news and are young adults' most commonly reported method of accessing news (Shearer, 2018; Matsa *et al.*, 2018; Diehl *et al.*, 2018). Thus, early categorizations of social media as “networking sites” underplay the current media distribution function that many SMPs currently exhibit.

The second terminological shift, from social media “sites” to “platforms,” relates primarily to an SMP's form. Whereas a site connotes the static arrangement of objects in relatively open space, a platform implies a more narrow arrangement of objects that afford a particular kinetic activity. To take an offline example, Kennedy Space Center is a geographical *site* comprising a sprawling network of facilities that develop American space programs. Kennedy Space Center also hosts three Mobile Launcher *Platforms*: physical infrastructures that help propel 2,000-ton vehicles into spaceflight.

When applied to a digital context, sites and platforms become much more malleable concepts than their offline referents. Gillespie (2010), for example, argues that social media companies selectively and strategically position themselves as platforms by invoking various connotations of the term. More computational approaches to platforms, however, tend to delimit them according to how software is developed on the back-end. An operational shift from sites to platforms, a process referred to as platformization, “entails moving away from published URLs and open HTTP transactions [sites] in favor of closed apps [platforms] that undertake hidden transactions” (Plantin *et al.*, 2016, p. 303).

These “hidden transactions” are conducted through application programming interfaces, or APIs. Simply put, APIs enable developers to combine software or software components, which facilitates building new features as well as exchanging data between developers (de Souza *et al.*, 2004). Whereas users interact on a platform's front-end through a graphical user interface (or GUI), developers interact on a platform through the back-end via various APIs. For Helmond (2015, p.4), APIs are central to the definition of a platform: “The moment social network sites offer APIs, they turn into social media platforms by enacting their programmability.”

Similarly, Van Dijck and Poell (2013, p.3) point to programmability as a defining feature of SMPs. They do not mention APIs but rather discuss programmability through the lens of social media logics: “the strategies, mechanisms, and economies underpinning these platforms' dynamics.” Notable in their phrasing is that social media logics *underpin* platform dynamics, suggesting that these logics structure how platforms work. We can therefore make the conceptual link between social media logics and APIs by arguing that social media logics are transposed into code via programming, which is accomplished by developers through APIs.

Van Dijck and Poell (2013) outline four social media logics: programmability, popularity, connectivity, and datafication. Programmability refers to how platforms are developed, popularity implies that platforms rank content, connectivity deals with facilitating interactions among users, and datafication renders user interactions as quantitative metrics. For my purposes here, programmability and datafication are the two most central logics in defining SMPs. While other logics may also be at work, such as developers' normative values and ideologies (Vaidhyathan, 2018; Klinger and Svensson, 2018), platforms essentially revolve

around developer input (programmability) and data output (datafication). Figure 1 depicts this cycle graphically.

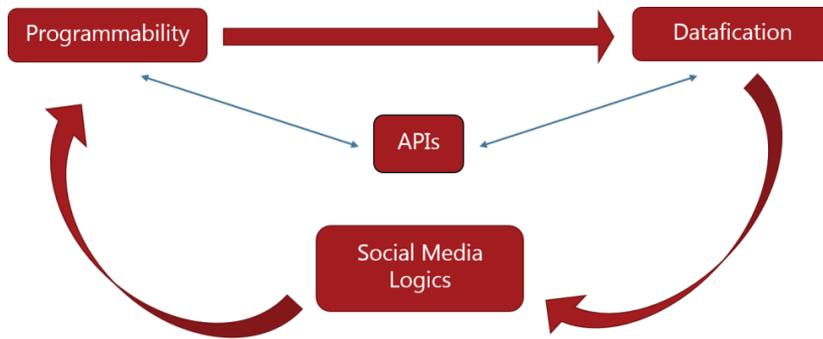


Figure 1: The Platform Back-End Cycle

Social media logics – whether motivated by commercial, technical, or normative ideals – underpin a platform and are transposed into code through programming. If programming is the means by which platforms are constructed, data is the telos. Datafication is the end goal that both sustains a platform’s business model as well as helps inform how the platform is programmed in the future. The rendering and capturing of data is the reason why SMPs are not sold as purchasable software. Rather, SMPs are provided to users for free in a software as service model, where “the value of the software is proportional to the scale and dynamism of the data it helps to manage” (O’Reilly, 2007, p. 20). Both the programming of the platform, as well as the retrieval of data, are accomplished through developers’ use of APIs. In brokering this input-output cycle, APIs create a common interface link between programmability and datafication.

Thus far in this chapter, I have described what unites SMPs as a coherent genre. Primarily, I have focused on how SMPs operate on the back-end. However, the programming-datification cycle is not unique to SMPs but a feature of many software platforms. Looking at Figure 1, we might then argue that what separates SMPs from other platforms is the logics that underpin them. However, I contend that attempting to analyze social media logics is an unfruitful research task for three reasons. First, the concept of social media logics is highly abstract and by most accounts, empirically unobservable. Second, social media logics tend to focus on the commonalities of SMPs, rather than their differences. Third, studies of social media logics tend to find an overlap with existing mass media logics (Van Dijck & Poell, 2013; Klinger & Svensson, 2015), provoking the question of whether logics are in fact a valuable heuristic to distinguish SMPs from other forms of media in the first place. In the next section, I will outline what distinguishes SMPs from one another by introducing the concept of digital architectures.

II.2 Digital Architectures

While all SMPs operate through the input-output cycle of programming and datification, each social media strives to create unique experiences for users on the front-end. A distinct profile and set of features is critical for SMPs to attract and retain active users (which in turn, churn out data and increase the platform’s market value). Astute readers might therefore notice that the direct line between programmability and datification in Figure 1 is somehow incomplete. What, exactly, is being programmed?

Between programmability and datification – two immaterial logics – lies a material space. It is not a physical space, but a digital one that nonetheless exhibits materiality. “Materiality,” argues Leonardi (2012, p. 43), is the “arrangement of an artifact’s physical/and or digital materials in particular forms that endure across differences in place and time.” Adapting this understanding to the current framework, we can argue that programmers arrange material (code) to form digital structures that subsist across time and space. Although the Facebook interface does not exist anywhere in the physical world, over one billion individuals access it daily from a wide range of hardware devices. The composite digital form that programmers develop is what I refer to as an SMP’s digital architecture. Digital architectures can be defined as:

The collective suite of technical protocols that enable, constrain, and shape user behavior in a virtual space.

Like my definition of SMPs in the previous section, digital architectures need to accommodate both the agency of developers and users. Developers construct digital architectures with code, and they embed these structures with particular features, rules, and processes that circumscribe user behavior on the platform. Users, meanwhile, navigate through the architectures of platforms and interact with these embedded features, which in turn generates data. Sometimes, the collective behavior of users informs the future design choices of developers, such when Twitter developers adding the @mention functionality to support users’ organic use of the symbol to mention one another (Halavais, 2014). Digital architectures can thus be to mediate between programmability and datification, developer and user, and a platform’s back- and front-ends. Figure 2 illustrates this mediating role of digital architectures both horizontally (between programming and datification) and vertically (between the platform back-end and front-end).

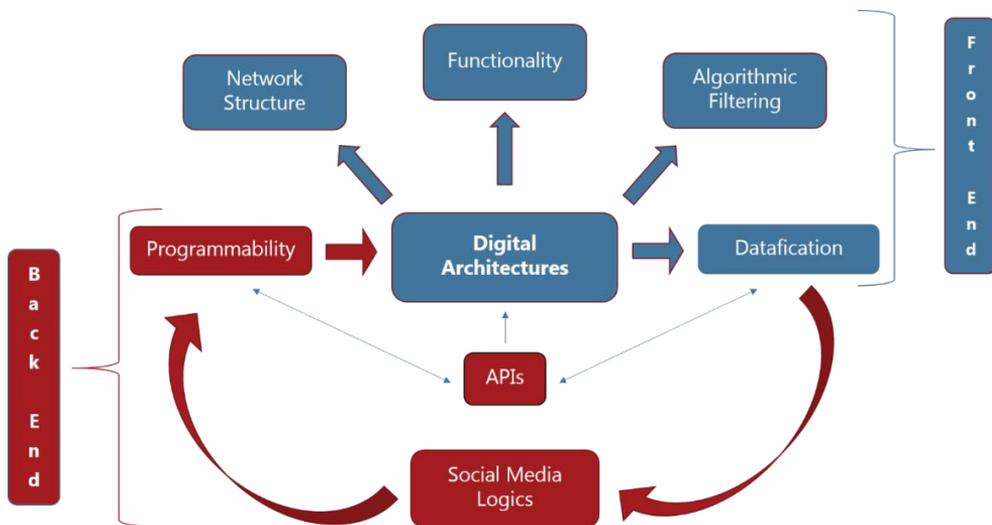


Figure 2: The Front-End and Back-End of Digital Architectures

The mediating role of digital architectures renders the schism between front-end and back-end difficult to depict graphically. As I argued in the previous section, for example, datification can be considered a driving logic of a platform’s back-end. Yet, through the programmed operations that form a platform’s architecture, users also experience datification on the front-end through the various metrics that incentivize them to create content, e.g.: Facebook likes, Twitter retweets, and Reddit upvotes and downvotes. Thus, my color coding aims to distinguish between what is broadly empirically observable (blue) from unobservable (red). Here, readers

may object that some processes, such as those relating to algorithms, are unobservable. However, I would argue that we can, in fact, observe differences in algorithms by comparing platforms in the very way the digital architectures framework is built to do.

In Chapter 4, I outline in detail each of the four aspects of the digital architecture typology: network structure, functionality, algorithmic filtering, and datification. I will therefore only present each aspect briefly in this chapter. Network structure refers to the features and protocols that govern how connections between users are initiated, established, and maintained. Functionality refers to the mechanisms allowing users to access, create, and redistribute content. Algorithmic filtering structures how content is ranked and displayed, and datification dictates how users' activity is quantified and measured.

Like van Dijck and Poell's (2013, p. 5) categorization of media logics, my framework here does not constitute an "exhaustive analytical model." Rather, the aim is to delineate the core functions of a platform that have implications for political communication, while also highlighting how these functions work interdependently as a composite structure. The practice of isolating a technology's functional elements, and understanding how they work together structurally, has been pioneered in the design theory of physical products (Ulrich, 1992) and system design (Ferrari & Sangiovanni-Vincentelli, 1999). The digital architectures framework applies this line of thinking to SMPs, in order to disaggregate, evaluate, and compare these technologies with a high level of granularity.

The reason is that "two products that at the most general level do the same thing may have different function structures when described at a more detailed level" (Ulrich, 1992, p. 3). For example, even though two distinct engineering products may both lead to similar increases in energy efficiency, the mechanisms underpinning how the products work can vary substantially (Sturges *et al.*, 1993). Investigating the functions and component parts of these engineering products therefore becomes important *to explain how they work*. Taking the example to social media, if two platforms both support citizens' discursive participation in politics, explicating how specific design features facilitate, constrain, or shape citizens' modes of online participation becomes necessary *to explain how online political participation works*.

Before launching directly into comparing design features across technologies, the first step in product design is to conceptually separate the functions of a product – what it does – from its physical (or digital) characteristics (Ulrich, 1992). In the digital architectures typology, the four categories shown in Figure 2 correspond to these functions. Taking each category in turn, SMPs function to: connect users (network structure), allow them to create and engage with content (functionality), rank and structure this content (algorithmic filtering), and generate data all the while (datification). Like the theory of social media logics, these functional categories aim to unite SMPs into a coherent genre. The following step, "mapping," begins to expound their differences.

Once the functional elements of a technology are identified, the next step is mapping, "where the functions to be implemented are assigned (mapped) to the components of the architecture" (Ferrari & Sangiovanni-Vincentelli, 1999, p. 5). It is here where we begin to see that similar functions take different forms across social media. The network structures of Facebook and Twitter, for example, both facilitate connections between users but do so through different structural components, which create the "Friend" versus "Follow" mechanisms respectively. Although seemingly a small design change, these different models of connectivity lead to different user networks on Facebook and Twitter (Ellison *et al.*, 2007; Huberman *et al.*, 2009)

that in turn, promote different pathways for citizens to engage in political activities such as protest participation (Valenzuela *et al.*, 2018).

I thoroughly map each functional category to its respective components across Facebook, Twitter, Instagram, and Snapchat in Chapter 4. Suffice it say here that if “the architecture of the product is the scheme by which the function of the product is mapped onto physical components” (Ulrich, 1992), then the digital architecture of an SMP is the scheme by which its function is mapped to specific digital components. It is this mapping process, and the level of feature granularity that accompanies it, that separates the digital architectures framework from existing conceptualizations of architectures in the literature. Namely, discourse architectures.

The concept of discourse architecture originates in the Information Systems literature and has been originally defined as the “technology base and features that help structure discourses” (Jones & Rafaeli, 2000, p. 218). Jones and Rafaeli, whose interest was to examine how virtual publics emerge and grow across different online spaces, considered aspects of discourse architectures to be protocols such as: the types of media supported (e.g., sound, images, and video), whether communication is synchronous or asynchronous, and the length of time a post remains visible online. Sack (2005, p. 244) expands on the notion to argue “discourse architecture is concerned with the structure of conversation itself; that is, with how the utterances of a conversation interrelate and build upon one another.” Wright and Street (2007, p. 863) compared online forums to argue that levels of moderation, as well as interface features such as “a threaded system of replies,” affect the deliberative quality of conversation. In comparing political conversations on Twitter and online news sites, Freelon (2015) proposes three variants of discourse architectures that relate to democratic norms: deliberative, communitarian, and liberal individualist.

What the studies on discourse architecture lack is a systematic rubric for comparing online spaces, and in particular, few studies (if any) have applied the discourse architecture approach to compare two or more SMPs. Moreover, by focusing primarily on the deliberative quality of conversation, the studies on discourse architectures tend to graft normative assumptions onto particular features while assuming a dialogical interaction among citizens will inevitably occur (Freelon’s [2015] liberal individualist architecture is a notable exception).

The digital architectures approach I advocate here is different in that it treats platforms as primary objects of analysis in-and-of-themselves. In disaggregating particular features and protocols that developers may change over time, the approach has the potential to archive platform changes, which in turn can streamline research designs that may be currently grafting newer platform functioning onto older data. Moreover, the digital architecture framework is not limited to the study of citizen-to-citizen interactions, dialogue, or the assessment of democratic norms. It can be applied to political campaigning, journalistic reporting, citizens’ discussions, or nearly any facet of political communication. In being platform-centric (Bucher & Helmond, 2018), the framework I advocate accommodates any political activity that occurs on social media since, *ipso facto*, any political function taking place through a platform will be mediated by its structural form.

However, there remains a theoretical problem that has yet to be addressed. So far, I have primarily focused on the back-end structure of platforms and the functions they provide for users. Users may, in practice, leverage the digital architectures of platforms to enact any number of functions. The relationship between users and technology, often referred to as affordances, has been the primary heuristic for scholars to conceptualize how users engage with platforms. Unfortunately, the concept of affordances has been indiscriminately used across literatures and

as such, has become conceptually stretched. In the following section, I outline some of the key theoretical problems with the affordances concept, and how a digital architectures approach can help remedy them.

II.3 Affordances

Originally developed in the field of ecological psychology (Gibson, 1966), affordances can be described at the broadest level as “possibilities for action” (Evans *et al.* 2017, p. 36). Having travelled quite universally across literatures, the concept of affordances is now widely used to describe the possibilities for action that social media platforms engender. For example, Kreiss *et al.* (2017) apply the concept to social media to politicians’ campaigning and define affordances as: “what platforms are *actually capable of doing* and *perceptions of what they enable*, along with the *actual practices that emerge as people interact with them.*” Here, affordances refers to three distinct characteristics of a technology: possibilities of action, perceptions of action, and practices of action. Assigning three distinct properties to the same concept affords the type of “vague, amorphous conceptualizations” that Sartori (1970, p. 64) describes as conceptual stretching.

Theoretical concepts become stretched when they apply to multiple classifications, but the empirical properties that substantiate each classification can be separated analytically. Indeed, possibilities, perceptions, and practices differ categorically. My aim here is not to criticize colleagues *ad hominem* but to supply an illustrative example. A recent meta-analysis (Evans *et al.*, 2017) highlights the indiscriminate application of affordances across studies of communication and technology, and Bucher and Helmond (2018) identify a plethora of variations on the concept: perceived affordances, technology affordances, social affordances, communicative affordances, high-level affordances, low-level affordances, imagined affordances, and vernacular affordances. While I follow Oliver’s (2005, p. 402) position that the concept of affordances “is now too ambiguous to be analytically valuable,” headwinds in the field require that I situate the digital architectures framework within the existing literature on affordances.

As I have argued in the previous section through the lens of design theory, the function of any technology is predicated on its structure. If anything, then, the structures of a platform *underpin* its so-called affordances. While social media platforms certainly do enable possibilities for online action, these actions are mediated by a platform’s architecture and how users interact with it. Therefore, I propose an empirical focus on how users leverage SMPs’ structures to enact certain political functions, rather than make appeals to abstract (and largely unobservable) affordances. In advocating this proposition, I will first outline the theoretical inconsistencies with affordances in social media research and argue why these problems are unlikely to abate.

Affordances refer to possibilities for action. A tree, for example, affords climbing. However, important to note that is that an affordance, ontologically, refers to the *relationship* between animals and objects in their environments. As put summarily by Norman (2013, p. 11), “An affordance is the relationship between the properties of an object and the capabilities of the agent that determine just how the object could possibly be used.” A few hypothetical examples will help illustrate this point.

A tree may afford climbing to an animal, but the affordance of “climbability” depends, critically, on the relationship between the tree and the properties of that animal. For instance, a tree may afford climbing to a koala or a sloth, but not to a fish. Conversely, a bonsai tree does not afford climbing to a koala, sloth, or fish, but does so for an ant or ladybug. For most species of birds, trees afford perching rather than climbing. For humans, trees afford climbing insofar as the human can climb. Trees do not afford climbing to infants or humans with certain disabilities. Thus, an affordance – *what is possible* – is conditional upon both the animal and the object.

How can one make claims about the ontology of affordances? The answer is simple. Affordance is simply a neologism made up by Gibson (1979, p. 127):

“The verb to afford is found in the dictionary, the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment.”

The relation between animal and environment – or “complementarity” – is therefore an ontological property of affordances. An affordance can be neither the animal by itself, nor the environment by itself (Parchoma, 2014). Yet, complementarity becomes extremely problematic when applied to social media. SMPs are not groves of weeping willows; they are dynamic, programmable, and rapidly evolving environments. As such, I argue that it will *always* be problematic to refer the “affordances of social media”; the environment-side of the complementarity principle simply changes too rapidly.

Apart from platform evolution, the application of affordances to social media is problematic for four other reasons: it is often used outside of its relational meaning, it is normatively biased towards democratically positive actions, it is difficult to operationalize, and ultimately, it is not essential to the study of social media.

First, and concretely, scholars widely use the term affordance to refer to a specific *feature* of a technology, rather than the *relation* between a user and technology (Evans *et al.*, 2017, p. 39). Bucher and Helmond (2018, p. 239), in a sweeping review of the use of affordances in relation to social media, find that:

“Affordances tend to be conceptualized on either one of two distinct dimensions: an abstract high-level or a more concrete feature-oriented low-level. High-level affordances are the kinds of dynamics and conditions enabled by technical devices, platforms, and media...In contrast, low-level affordances are typically located in the materiality of the medium, in specific features, buttons, screens, and platforms.”

In being located in the materiality of the medium (that is, *not* in the relationship between animal and environment), low-level affordances are, ontologically, not affordances. Low-level affordances are signaled by phrases such as “the like button is an affordance of Facebook” or “the Twitter affordance of retweeting.” The problem with conflating affordances and features in this manner is that such a conflation tends to be lop-sided toward action, whereas affordances have been posited to both enable and constrain action (Hutchby & Barnett, 2005). If Twitter affords retweeting, Twitter does not also constrain retweeting. To argue otherwise presents a logical fallacy. Therefore, this type of “low-level affordance” usage, which is utilized “more in passing than in an analytical sense” (Bucher & Helmond, 2018, p. 240), contributes to the conceptual stretching of affordances by diluting its analytical utility.

Second, even when “high-level” affordances are used in the proper relational aspect, they are often normatively loaded and skew toward techno-optimism. Keeping with the notion that affordances are possibilities for action, scholars tend to refer to the affordances of social media as positively disposed to democratic norms. For example, affordances are often cast as reducing the cost of political participation (Casteltrione, 2016), increasing the visibility of citizens’ opinions vis-à-vis traditional elites (Freelon & Karpf, 2015; boyd, 2010), or facilitating the attainment of social capital (Ellison *et al.*, 2007). Few scholars discuss the affordances concept in relation to the negative actions that social media enable, such as: harassment, surveillance, cyberattacks, or electoral interference (for an exception see Pearce, 2015).

Third, true affordances are difficult to operationalize and measure. Precisely because they depend on the capabilities of individual users and how they interact with a technology, affordances are likely to differ for each individual user. In fact, Evans *et al.*, (2017, p. 40) argue that affordances must exhibit “variability” by definition and that the measurable “gradations of affordances” are one of the concept’s potential strengths. I argue, on the contrary, that variability is a critical weakness of affordances.

Let’s take the example of visibility, a true affordance by Evans *et al.*’s (2017) criteria. Visibility, in a political context, is an affordance that implies citizens’ opinions become more visible in public debates, especially in relation to traditional elites like politicians and the media. Research finds that Twitter affords visibility, since citizens’ political opinions can appear as the most retweeted during political debates in the U.S. (Freelon & Karpf, 2015) or in pre-electoral discussions in the U.K. (Dutceac Segesten & Bossetta, 2017a). However, while a select few citizens appear alongside politicians and the media as the most retweeted in these datasets, millions of other citizens do not attain high levels of visibility. Does Twitter afford visibility? For some – yes. For others – not really. Therefore, while it is technically correct to state that visibility is an affordance of Twitter, this affordance is only meaningfully actualized for a select number of users at particular points in time. The vast majority of citizens, although they (perhaps) gain more visibility for their opinions on Twitter than shouting in the streets, only gain a relatively marginal degree of visibility. I would argue, then, that other approaches could arrive at the same conclusions without appealing to the concept of affordances.

One such approach is the digital architectures framework developed in this thesis, which highlights the fourth reason the affordances concept is problematic: the operationalization of affordances typically implies an appeal to platform features, functions, and metrics. If high-level affordances deal with “the kinds of communicative practices and habits” (Bucher & Helmond 2018, p. 239) a platform enables or constrains, such affordances cannot be conceptualized apart from the architectural features that enable or constrain communicative practices. For example, in the case of visibility just mentioned above, visibility is measured by retweets.

Or, one could argue that the survey research of Valenzuela *et al.* (2018) actually examines the implications of different network structures – rather than affordances – for protest activity. While the end result of the study wouldn’t change had they used a more feature-oriented approach, a focus on architectures might prevent inaccurate statements like: “Twitter’s unique affordances such as the unstructured and non-reciprocal follower/followee relationship facilitate the rapid spread of...information” (Valenzuela *et al.*, 2018, p. 123). Here, not only is affordance conflated with features, but several other SMPs have open follower/followee network structures by default, such as Instagram and TikTok. My argument, simply, is that the study of political phenomena on social media can be conducted without appeals to abstract, “high-level” affordances.

Similarly, Sartori (1970) critiques the scholarly use of such high-level concepts in the study of comparative politics. When theory building for comparative research, Sartori argues that concept formation should begin at the lowest level of what he calls the “ladder of abstraction.” The ladder of abstraction comprises high-level, medium-level, and low-level concept categories. Starting from the bottom rung of the ladder, low-level categories focus on specific, “configurative conceptualizations” (Sartori, 1970, p. 1041) where “the differentiae of individual settings are stressed above their similarities.” The digital architectures framework would consider platform-specific features, and their arrangements, as belonging to this lowest level.

In the vocabulary of the design theories outlined in the previous section, low-level concepts are the configuration of components that enact a product’s function. These functions – the categories that I have defined as network structure, functionality, algorithmic filtering, and datafication – constitute medium-level concepts, which “stress similarities at the expense of uniqueness” (Ibid.). Lastly, high-level conceptualizations are those “travelling universals” that apply everywhere and nowhere simultaneously; they are the “ultimate genus which cancels all its species” (Ibid.).

Affordances, as well as social media logics, are examples of high-level conceptualizations that lack operational capacity and as a result, impede constructive theory building. The only way to operationalize true, “high-level” affordances is to appeal directly to “low-level” features. Therefore, I propose a focus on features and architectures instead of affordances. Following Sartori (1970, p. 1043), I would also contend that starting from low-level categorizations in comparative analysis – or in my case, feature arrangements in comparative social media research – is a better approach to theory building than starting at the highest levels of conceptualization first. Very much in line with my thinking here, Sartori (1970, p. 1052) seems to critique affordances half a century ago when he writes:

“We do lack words. But conceptual stretching and poor logic have largely impoverished the analytical articulation and the discriminating power of the words that we do have. And my feeling is that only too often major differences are being cancelled on the thin basis of secondary, trivial similarities. *It would hardly make sense to say that both men and fishes are alike in that both classes share a ‘swimming capability.’*”

Instead of diving into a tangential discussion of the “Swimmability” affordance (for that, see Guignard *et al.*, 2017), I now present Figure 3, which situates the digital architectures framework in a way that accompanies the concept of high-level affordances.

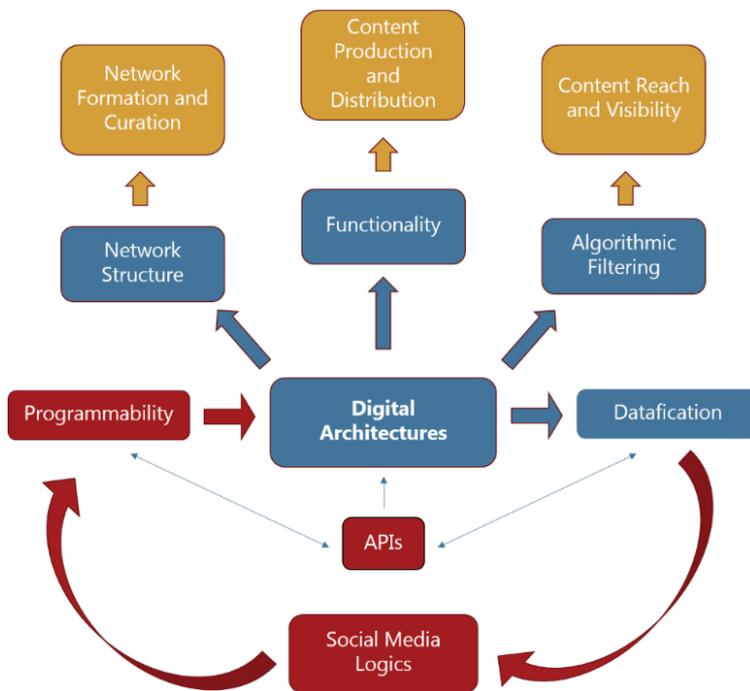


Figure 3: The Digital Architectures Framework

As I mentioned previously, digital architectures can be considered to underpin affordances, since any conceptualization of social media affordances requires an appeal to platform features and/or their configurations. Figure 3 therefore presents action possibilities in gold above the mid-level architectural categories. Network structures afford network formation and curation, functionality affords the creation and distribution of content, and algorithmic filtering affords – or constrains – content visibility and how far a post can cascade across a platform. Datafication simply affords data, so I leave it out of the figure.

In interpreting Figure 3, it may be helpful to recapitulate my argument up to this point. Starting from the bottom of the figure, social media logics are programmed into code, which in turn gives rise to digital architectures. These architectures can be broken down into functional categories, such as network structure, functionality, algorithmic filtering, and datafication. The individual features that comprise these categories work together to afford certain action possibilities for users, such as forming networks, creating content, and accessing content filtered by algorithms. Now, in this chapter's final section, I'll examine whether political participation one of the action possibilities afforded by an SMP's architecture.

II.4 Political Participation

Despite my criticism of the affordances concept, an interesting question arises if we consider the relationship between citizens and their use of SMPs to read and discuss politics. That question is: *Do SMPs afford political participation?* In this section, I will argue that they do and use Evans *et al.*'s (2017) criteria of affordances to argue that in fact, we can consider political participation a “true” affordance. My purpose in this exercise is to introduce the dissertation's theory of political participation (outlined further in Chapters 5-7), as well as demonstrate that if we take political participation as an affordance, then we need to study how SMPs' digital architectures underpin it.

In previous sections, I have briefly touched upon two of Evans *et al.*'s (2017) criteria of a true, high-level affordance. One is that any proposed affordance cannot be a feature of a technology (like a hashtag or button). The other is that the affordance has variability. That is, that an affordance is not binary; it must be scalable. And finally, the third criteria of an affordance is that it is not a concrete outcome of a technology. An affordance should be a means linking user and output. For example, finding an old friend on Facebook would not count as an affordance, but searchability or visibility might be considered affordances that lead to the outcome of finding an old friend.

Political participation, understood broadly as citizens' attempts to influence politics, is certainly not an engrained feature of any technology. Participation is also variable; citizens can participate more or less in politics. The trouble arises with the third criteria. Is political participation an outcome? As I will argue, it depends on how we conceptualize political participation.

Historically, most political scientists have considered political participation as a concrete activity. These scholars tend to define participation as: “those *activities* by private citizens” (Verba and Nie 1972: 2), the “*actions* of private citizens” (Milbrath & Goel 1977: 2), or the “voluntary *activities* by individual citizens intended to influence...political choices” (Kaase Marsch 1979: 47). If we understand participation along these lines, then political participation is not an affordance of social media, since the “act” or “activity” of participation would be an outcome variable of technology use.

Rather, I conceptualize participation as a *process*, rather than a specific activity or set of activities. Most scholars would agree that the act of voting constitutes political participation, but we know

from previous literature that the voting patterns of children can be socialized by parents (Iyengar & Grady, 2007, p. 194), who in turn vote more often as their children grow older (Dahlgaard, 2018). Thus, to simply treat voting as an isolated act can be problematic, since voting is conditional upon several factors.

Two other processes can influence citizens' likelihood to participate in politics: accessing information from the media and discussing politics within social networks. Citizens' communication about politics influences how they interpret and seek out information, and both activities work together to influence citizens' participation in the political process (Sotirovic & McLeod, 2001). Building on Shah *et al.*'s (2005) seminal work showing that communication through online channels can spur civic participation, several studies have shown that citizens' use of social media for news and political discussion correlate with political participation (for an extensive overview see the meta-analyses by Boulianne, 2015; 2019). While the effects of social media use on participation tend to be small, they appear to work in a stepwise manner. That is, citizens start with small acts of information seeking and political discussion online, and then trend towards enacting more intensive acts of participation, like canvassing or voting (Vaccari *et al.*, 2015a; Cantijoch *et al.*, 2016).

Therefore, we can consider participation as specific acts, *or* we conceptualize participation more broadly as the process whereby citizens become politically informed and active. If we take the latter view, then citizens' use of social media to find information, self-express, or engage in discussion about politics is not an outcome but a continuum. Figure 4, which also appears in Chapter 6, presents three phases of this process: latent participation, mobilization, and manifest participation.



Figure 4: Three Phases of Political Participation

These three phases are outlined further in Chapter 6. Succinctly put, latent participation refers to low-threshold forms of participation such as seeking news or discussing politics. Manifest participation can be considered higher-threshold forms of participation like protesting or voting. Manifest forms of participation are typically more costly in terms of time, money, and effort than latent ones. While both concepts are borrowed from Ekman & Amnå (2012), this dissertation adds a third phase – mobilization – which acts as an intermediary link between latent and manifest participation. Mobilization, operationalized as calls to action, can catalyze manifest participation. For example, political parties call on citizens to vote, or social movement activists may call on peers to protest.

The point I wish to stress here is that if we view political participation as a process, then participation is not necessarily an outcome in-and-of-itself. After all, citizens typically do not vote just for the sake of voting. They vote based on prior beliefs and preferences, and their act of voting is an expression of will to influence some future aspect of politics. If we apply a similar logic to social media, then citizens' small acts of participation on social media – whether that be reading political news, discussing politics, or donating to a political cause – should be viewed as complimentary to their broader political action repertoire. Therefore, we can argue

that SMPs afford the possibility for political participation that, in not being an outcome but a process, fulfills all three of Evans *et al.*'s (2017) criteria of a true affordance. Bloomfield *et al.* (2010) would seemingly agree when they write: “‘action possibilities’ are better understood and described via a vocabulary of processes than one of end-states.”

If political participation is an affordance of social media, we still need to delineate how this affordance works (Davis & Chouinard, 2017). Previously in this chapter, I have argued that the digital architectures of SMPs underpin their affordances. By casting an empirical gaze on platform architectures, and how users’ engage with them to participate in politics, we can start to unravel how this relationship between user and technology unfolds in practice. In the next chapter, I outline how the dissertation aims to accomplish this methodologically.

III. Methodological Approach

As discussed in the previous chapter, political communication research suggests that both mass and interpersonal communication work together to positively affect citizens' political participation. This dynamic appears to also occur online, when news exposure and peer-to-peer communication is mediated through forums, news sites, or social media platforms. The large majority of this research has arrived at these findings through well-established survey methods, with a smaller number of studies employing experimental designs. With survey methods, scholars tend to measure citizens' acts of political participation as a dependent variable, and run regression models to test the strength of correlation between participation and various independent variables, such as using social media for news. Experimental designs, meanwhile, expose citizens to a treatment and measure the change in their expressed motivations to participate through pre- and post-treatment surveys.

These established methods, borrowed from political science, provide the scholarly community with excellent insight into the factors that precipitate and contribute to participation. However, as I discuss below in Section 1, these methods are not without limitations when carried over to the study of social media. After outlining some of the potential drawbacks of experiments and surveys, Section 2 details this dissertation's methodological approach and rationale for using digital trace data.

III.1 Limitations of Traditional Approaches

Political scientists have traditionally sought to assess political participation through randomized field experiments (Eldersveld, 1956) or the statistical analysis of survey data (Verba & Nie, 1972). While these well-charted methods are powerful approaches to explain who participates and why, both experiments and surveys exhibit key methodological limitations that are exacerbated when applied to social media environments.

The primary limitations of online field experiments are both legal and technical. Most field experiments on social media would violate platforms' Terms of Service, since they would likely require bot automation or the "spamming" of users. Still, in the cybersecurity literature, some scholars have pressed ahead and simulated cyberattacks on Facebook (Benenson, et al., 2014) and Twitter (Bossetta, 2018a). Another, less illicit method of conducting field experiments on social media is to partner directly with platforms themselves (Bond et al., 2012; Jones et al., 2017). This method, however, is reserved for select scholars with privileged access to industry. Another experimental approach has been to create "mock-up" simulations of social media platforms (Anspach, 2017), but these designs will nearly always fail in replicating the exact personalized content recommendations that are proprietary to the platforms themselves (DeVito, 2017). Thus, such mock-up designs run into problems in achieving ecological validity.

With legal and technical hurdles hampering the feasibility of online experiments, many scholars have examined online political participation through surveys. While valuable in their ability to link self-reported online behavior and offline demographic data, traditional survey methods risk two types of biases: selection bias and recall bias.

Regarding the first, selection bias occurs when researchers solicit survey participants who have already expressed a political interest online. Often, political communication scholars collect social media data based on hashtags or keywords relating to elections, political debates, or protests. Therefore, the user populations included in these datasets are prone to be more politically active than the citizenry writ large. Vaccari et al. (2015b), for example, surveyed users

that tweeted about a televised debate between British politicians Nick Clegg and Nigel Farage ahead of the 2014 European Parliament elections (see Bossetta, 2017). While the study's research design and methodology is highly innovative, their finding that political expression on Twitter correlates with offline participation can largely be attributed to their biased sample of politically interested users. (Worth noting is that while Vaccari et al. [2015b] do account for this bias by benchmarking their Twitter sample against a broader online population sample, this latter sample only comprises users who have a Twitter account and posted news or expressions about politics on social media. Thus, one could make the case that their benchmark sample is also biased toward politically interested users).

Even surveys of nationally representative samples suffer from the second type of bias: recall bias. Recall bias occurs when survey participants inaccurately answer survey questions. Continuing the above example's focus on expression and participation, Gil de Zúñiga et al. (2014) find strong evidence to suggest that political self-expression on social media mediates the relationship between social media news use and political participation. Their sample closely approximated a representative sample of American adults, and they measured political self-expression in part by asking participants how often they posted or shared content relating to politics on social media. While the study's findings are robust, their reported measures may suffer from recall bias. Recent research pairing survey data with users' Facebook activity relating to news finds that highly active posters tend to underreport their posting of news, whereas less active users tend to over report (Haenschen, 2019).

In addition to the potential problems posed by selection and recall bias, survey measures that operationalize social media use often lack cross-platform granularity. That is, many studies treat social media use as a single variable, rendering it difficult to disentangle platform-specific effects on political participation (Boulianne, 2015). The conflation of several platforms into a single "social media use" variable is highly problematic, since it oversimplifies the social media landscape and the myriad of ways users participate across platforms. Valenzuela et al. (2018), for example, show that Facebook and Twitter both facilitate protest behavior, but they do so through distinct mechanisms that relate to strength of ties supported by the platforms' differing network structures (i.e., strong ties for Facebook and weak ties for Twitter).

Using established methods like surveys and field experiments to study social media is, of course, valuable. I simply wish to point out that these methods are not without their limitations, and given the novelty of SMPs, there is no "one size fits all" method for how to approach them methodologically. However, many platforms provide an exciting new form of data through their APIs: digital trace data (Jungherr, 2015). As discussed in the previous chapter, SMPs are structured around providing data, and the type of data that they generate are specific to the features and architectures of the platform. For example, Facebook does not provide data on retweets, and Instagram cannot provide the number of "shares" since that particular functionality is not supported by Instagram's architecture (Dutceac Segesten & Bossetta, 2017b). Thus, no two platforms' data can be compared with perfect equivalence, as the architecture and interface of each platform differs. However, harkening back to Sartori's (1970) ladder of abstraction discussed in the previous chapter, this thesis takes the approach that concept formation should begin with observing the most empirically observable units and comparing them across cases – or in this case, platforms.

III.2 Methodology

Unlike with survey research or experimental designs, this dissertation does not attempt to explain political participation through a series of independent variables. Rather, I am interested in observing and comparing how political participation unfolds across platforms in practice (Couldry, 2004). I therefore treat the digital architecture of an SMP as a mediating variable between citizens' motivations to participate and online participation through the platform. Figure 1 illustrates this path.

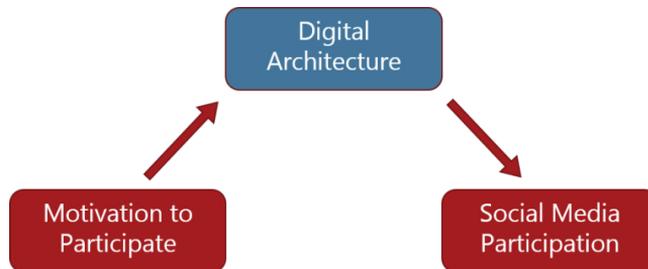


Figure 1: Digital Architectures as Mediating Variable

Establishing a direct link between an individual's offline motivations (through surveys) and their online participation (through trace data) is highly resource-intensive and can introduce bias. As mentioned above, if trace data on political expression is the criteria to solicit survey participants, the sample recruited will be biased towards individuals who are already politically interested. While research has made progress toward matching representative population samples with their social media activity (Guess et al., 2019), the recent throttling of API data by Facebook – and the crackdown of bots by Twitter – likely means that previously established methods of survey recruitment and trace data matching will not be feasible in the near future.

Therefore, I focus only on the relationship between digital architectures and online participation, and I consider these variables to covary. For example, if Facebook were to remove its share feature, this would affect users' potential to be distributors of news. Or, if Facebook were to deprioritize certain news stories through its algorithms, this architectural change might act as a disincentive for users to share that type of news. Even if users continued to share news at the same rate as before, the reach of that news would be limited and may exert downstream effects on others' participation (since they would be denied access to news that might catalyze their own online participation).

As these counterfactual examples illustrate, drawing a direct correlation between architectures and participation can be difficult for two reasons. First, many of the back-end workings of a platform's architecture are unobservable, particularly in a single-platform research design. In addressing the first issue, I argued in the previous chapter that even though we cannot observe the black-box workings of proprietary algorithms, we can still get a rough estimation of algorithmic differences through cross-platforms designs. Researchers could, for example, examine content diffusion patterns of the same news items across Facebook and Twitter, pair them with engagement metrics and timestamp metadata, and in doing so catch a glimpse of how algorithms rank content over time and relative to user activity (see Del Vicario et al., 2017 for a promising step in this direction). Such a design would be computationally intensive, and the data necessary to carry it out may not be available as SMPs continue to shutter access to social media data.

Second and related, SMPs only provide a limited, small, and therefore biased set of data to the public. Still, I argue that this data can provide a valuable resource to compliment and validate the findings of existing survey and experimental research. Conversely, the findings of computational-oriented approaches may help inform the research designs of survey and experimental studies. The challenge in working with social media data is that social scientists lack an established set of best practices to analyze and interpret these data. As shown in Chapters 6 and 7, the datapoints generated around elections can number in the hundreds of thousands or millions.

Apart from the methodological challenges of collecting, wrangling, and interpreting social media data, there is also a theoretical challenge in studying social media data. Many of the existing democratic theories that have been thoroughly investigated in offline environments, such as political participation or campaigning, do not necessarily have perfect online correlates. In other words, the scholarly community often lacks an agreed upon consensus about how to operationalize offline democratic processes in online environments.

Thus, although the specific methodologies differ in each of the following empirical chapters, uniting them is a shared a focus on exploratory, mixed-methods research designs. In order to meet the theoretical challenge in operationalizing existing theories, the dissertation strives to create online “proxy” variables that correspond to established offline processes. For example, Chapter 7 considers commenting on a Facebook post from the media an expression of political interest, whereas commenting on a political campaign page is considered a form of participation. These online activities are not perfectly analogous to their offline counterparts, but the aim is to construct an interpretive lens to study millions of Facebook comments in a meaningful way for social science. Given that much of the empirical research in the following chapters is without precedent, the operationalization of political participation requires breaking new theoretical ground.

Once the proxy variables have been created, the next step in the dissertation’s approach is to utilize any mix of qualitative and quantitative methods to “filter and fit” the social media data to these variables. In Chapter 6, which examines political participation in the 2015 British General Election, qualitative actor-type categorization is first carried out to filter citizens’ accounts from political elites or the media. Since political participation is fundamentally about citizens’ participation in politics, it makes little sense to treat tweets from politicians or mainstream media as participation. While both manual and automated content analysis techniques help identify calls to action, most of the analysis hones in specifically on citizens’ calls to action to address the study’s overall research question.

Relating back to the path model in Figure 1 above, the studies in the dissertation first form proxy variables that conceptualize how political participation (or in Chapter 4, political campaigning) can be enacted through a platform’s digital architecture. Then, by interpreting empirical trace data through the lens of these variables, the interpretation of results tries to connect the observed forms of participation back to the platform’s architectural features. Critics of this approach might argue that the analysis is overly descriptive and lacks explanatory power. I would argue, however, that the novelty of these data – as well as an overall lack of understanding regarding social media’s impact on politics – require the experimentation of new theories and methodological approaches to interpret them.

After all, theoretically informed and methodologically rigorous experimentation is integral to the scientific process. I will leave it to the reader to decide if the studies comprising the following chapters have contributed to that process valuably.

IV.

The Digital Architectures of Social Media: Comparing Political Campaigning on Facebook, Twitter, Instagram, and Snapchat in the 2016 U.S. Election

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Abstract

The present study argues that political communication on social media is mediated by a platform's digital architecture – the technical protocols that enable, constrain, and shape user behavior in a virtual space. A framework for understanding digital architectures is introduced, and four platforms (Facebook, Twitter, Instagram, and Snapchat) are compared along the typology. Using the 2016 U.S. elections as a case, interviews with three Republican digital strategists are complimented with social media data to qualify the study's theoretical claim that a platform's network structure, functionality, algorithmic filtering, and datafication model affect political campaign strategy on social media.

Introduction

The structural design of an environment – its architecture – intimately affects human behavior. This interplay between structure and agency is not limited to physical environs; it also applies to how users interact with, and within, online spaces. Scholars have argued previously that a digital platform’s architecture can influence, for example: the norms of interaction among users (Papacharissi, 2009), the deliberative quality of their communication (Wright & Street, 2007), or their likelihood to enact democratic ideals (Freelon, 2015). However, despite the rising interest in political campaigning on social media, few studies have questioned how a platform’s design features influence political actors’ communication strategies. This oversight is likely attributable to scholars’ penchant for treating social media as a single media genre when in fact, these platforms exhibit significant differences in their network structures, functionalities, algorithms, and datafication models. The present study compares four social media platforms (Facebook, Twitter, Instagram, and Snapchat) along their digital architectures, with the aim of providing a new theoretical framework for studying political communication across social media platforms.

The scholarly inattention to the design features of social media is problematic for two reasons. First, political actors increasingly utilize social media as campaigning tools during elections. In the United States, political advertising on digital media across local, state, and national elections rose from 1.7% of ad spending in the 2012 election cycle to a 14.4% share in 2016 (Borrell, 2017). Moreover, a growing body of literature from countries outside the U.S. indicates that electoral campaigning on social media is a truly global phenomenon (Jacobs & Spierings, 2016; Strandberg, 2013; Grant, Moon, & Busby Grant, 2010). These and other case studies help elucidate how political actors use social media to advance their political agenda in a given social, cultural, or electoral context. Taken together, though, they lack a unifying theoretical framework for studying political communication on different social media platforms. This study provides such a model through its focus on digital architectures.

The second reason scholars’ inattentiveness to the role of digital architectures is problematic concerns the increasing pluralization and fragmentation of the social media landscape. Newer platforms like Snapchat and Instagram vie for users’ attention and encroach upon the market share previously held by platforms like Facebook and Twitter. In response, established providers either aggressively cannibalize the features of market challengers or, alternatively, attempt to buy them out entirely. Both Instagram and Facebook’s incorporation of Snapchat-specific features, such as disappearing messages and self-documenting ‘stories’, exemplify the former strategy. The latter strategy, meanwhile, is evidenced by Facebook’s acquisition of Instagram and WhatsApp, as well as Twitter’s successful bid for Periscope (a live streaming service). The recent transformations in the social media landscape encourage political actors to adopt new platforms and features to reach different portions of the electorate. The existing trend among scholars to conduct single platform studies, or to subsume multiple platforms under a single “social media use” variable, is no longer sufficient to assess the complexity of contemporary “hybrid political communication systems” (Karlsen & Enjolras, 2016).

Aiming to assist future cross-platform research, this study is a theoretical piece offering a new heuristic for approaching political communication on social media. First, I propose a

framework for conceptualizing digital architectures by presenting a typology that consists of four parts: network structure, functionality, algorithmic filtering, and datafication. The digital architectures of Facebook, Twitter, Instagram, and Snapchat (according to how they were structured in early 2016) are then compared along the typology. To bolster the comparison, two data types are incorporated in the study. The first is qualitative insights from interviews with three digital strategists working for Republican candidates in the 2016 U.S. election. The second is quantitative social media data from three platforms (Facebook, Instagram, and Snapchat). These empirical elements do not explicitly test the causal effect of digital architectures on campaign strategy; such an analysis is outside the scope of this paper. Rather, the empirical data is intended to help motivate new pathways for comparative cross-platform research that can, piece-by-piece, further our understanding of contemporary political campaigning.

Digital Architectures and Affordances

Whether an anonymous web forum like Reddit or 4Chan, a natively web-based social networking site like Facebook or Twitter, or an exclusively mobile app like Snapchat or WhatsApp, social media providers are faced with the challenge to develop digital communication tools that are easy to use and functional to the demands of varying user demographics. At the same time, these providers are competitors on the market and strive to develop different profiles that attract users, solicit advertisers, and sustain economic viability. Unsurprisingly, then, social media platforms display significant differences in their digital architectures: *the technical protocols that facilitate, constrain, and shape user behavior in a virtual space*. In line with what van Dijck and Poell (2013, pp. 5-6) refer to as the logic of “programmability,” a social media’s digital architecture is written in code, influenced by algorithms, and constantly tweaked by developers to maintain a competitive market advantage (see Lessig, 1999; Beer, 2009).

Previous scholarly work has argued effectively that digital communication technologies provide structural *affordances* to agents (Papacharissi & Yuan, 2011; boyd 2011). However, the concept of affordances is theoretically vague, and its analytical utility is questionable (Oliver, 2005; Parchoma, 2014). Broadly understood as “possibilities for action” (Evans, Pearce, Vitak, & Treem, 2017, p. 36), affordances lacks an agreed upon definition, and the highly inconsistent application of the term has been extensively critiqued elsewhere (Wright & Parchoma, 2011; Evans et al., 2017). As scholars work to refine the concept, there remains a need to “delineate how affordances work” (Davis & Chouinard, 2017, p. 6) by examining the underlying mechanisms of a technology and investigating how they shape user behavior. The argument here is that the architecture of a technology underpins its affordances, while offering a more empirically observable object of analysis.

Take, for example, stairs as a technology (Davis & Chouinard, 2017; McGenere & Ho, 2000). Stairs afford climbing, but it is the architectural design of stairs that influences their perceived and actual “climbability” (Warren, 1984). An affordance approach might consider the extent to which stairs enable climbing, whereas an architectural approach would examine how climbability is directly influenced by specific properties of the technology: the distance between steps, the angle of the rise, and other aspects relating to the structure’s form. The two approaches are not necessarily at odds, but the architectural approach is arguably more conducive for comparing climbability across different types of stairs.

Applying the affordances concept to social media, Kreiss, Lawrence, & McGregor (2017, p. 12, original emphasis) have recently defined affordances as “what platforms are *actually capable of doing* and *perceptions of what they enable*, along with the *actual practices that emerge as people interact with them*.” One could also argue that the capabilities, perceptions, and practices relating to a platform necessarily derive from its architecture. While the concept of affordances refers to what properties of communication are enabled by a platform (e.g., anonymity, persistence, or visibility [Evans et al., 2017, pp. 41-43]), the digital architectures heuristic drills into *how* a platform’s specific design features affect particular communication practices. Put succinctly, digital architectures shape affordances and consequently, user behavior.

Apart from Kreiss et al.’s (2017) study, the application of the affordances concept to politicians’ social media use is rare (see Stier, Bleier, Lietz, & Strohmaier, 2018 for a recent exception from Germany). This is most likely due to the fact that the large majority of studies on social media campaigning are single platform studies (Enli, 2017; Freelon, 2017; Filimonov, Rassman, & Svensson, 2016; Lev-On & Haleva-Amir, 2016; Kreiss, 2016; Jürgens & Jungherr, 2015; Graham, Broersma, Hazelhoff, & van’t Haar, 2013; Vergeer & Hermans, 2013; Larsson & Moe, 2012; Golbeck, Grimes, & Rogers, 2010). Most of the existing cross-platform analyses tend to cast their empirical gaze on citizens’ discussion networks about political issues (Halpern, Valenzuela & Katz, 2017). This latter strand of research demonstrates that citizens’ online communication about politics is influenced by how platforms are coded and designed. Halpern and Gibbs (2013), for example, show that the anonymity provided to user accounts on YouTube has a negative impact on the politeness of discussion in comment fields vis-à-vis the more personalized accounts required by Facebook. Dutceac Segesten and Bossetta (2017), meanwhile, find that in the social media discussions following the 2014 European Parliament elections, the Twitter publics of Sweden and Denmark were more closely aligned in their evaluations of Eurosceptic parties than users commenting on the Facebook pages of mainstream media outlets. They interpret their findings by arguing that similar user demographics are drawn to Twitter’s specific features and news-oriented content profile (Perrin, 2015), creating a user base whose shared attitudes toward Euroscepticism override national variations between the two countries. Both of these studies suggest that the ingrained architectural features of a platform have direct implications for the types of political information and communication that flow across it.

Certainly, digital architectures alone cannot fully explain how or why political actors campaign on social media; the context of each race is critical in this regard (Auter and Fine, 2017; Aldrich, 2012). However, questioning how a platform’s digital architecture influences campaign practices may provide insight into its strategy and, moreover, serves as a theoretical framework to inform comparative, cross-platform research designs. Additionally, the digital architectures heuristic is not limited to studies of political campaigning; it can also be applied to nearly any facet of online political communication: political debates among citizens, protest mobilizations, or journalistic reporting – to name a few.

In the following sections, four aspects of a social media’s digital architecture are outlined: network structure, functionality, algorithmic filtering, and datafication. These categories have been chosen since each is argued to affect either the political content issued by politicians or

citizens' access to political messages. Network structure influences how users identify and connect with political accounts. Functionality governs the rules of media production and diffusion across a platform. Algorithmic filtering determines what content users are exposed to, and datafication provides the means for politicians to target voters outside of their existing subscribers. These categories are not platform-specific and can therefore be used as bases for comparing politicians' digital strategy across different social media channels.

Network Structure

The network structure of a social media platform refers to the in-built criteria governing connections between accounts. Almost by definition, "social" media allow individual users to connect and interact with peers: "Friends" on Facebook and Snapchat, "Followers" on Twitter and Instagram, or "Connections" on LinkedIn. Additionally, most social media allow users to establish connections with public figures, brands, or organizations (including political parties and politicians). Such high-resource actors typically maintain accounts with a different interface and suite of tools compared to the average user (e.g., Public Pages on Facebook or Business Profiles on Instagram).

Differences in the protocols underpinning network structure affect three aspects of user connections. The first is *searchability*, which refers to how users can identify new accounts and subscribe to their content (see boyd, 2011). The second is *connectivity*, referring here to how connections between accounts are initiated and established. Facebook's dyadic Friend structure, for example, requires peers to confirm relationships and has the effect of creating online networks that largely mirror a user's offline relationships (Ellison, Steinfield, & Lampe, 2007). Conversely, Twitter's connectivity is uni-directional by default and does not require a user to confirm a requested connection. This structural feature encourages one's Twitter network to be by-and-large composed of ties with no real-life connection (Huberman, Romero, & Wu, 2009).

The third aspect of network structure is *privacy*, which pertains to the ability of users to influence who can identify them through searches (searchability) as well as how connections interact (connectivity). Although Snapchat tends to encourage a more private network of close ties (Piwek & Joinson, 2016) compared to Instagram and Twitter's default open privacy settings, each platform allows users to customize whether incoming connection requests need to be approved by the user. Separately and together, the three elements of network structure – searchability, connectivity, and privacy – influence: the network topography formed on a platform, the strength of ties among users, and subsequently, the type of content likely to be generated on the platform (Bossetta, Dutceac Segesten, & Trenz, 2017).

Functionality

Functionality is the typology's broadest category and governs how content is mediated, accessed, and distributed across platforms. The first element of functionality is the *hardware* from which the platform is accessible: mobile, tablet, desktop, or wearable accessories like smartwatches and eyewear. Previous research suggests that hardware has direct effects on political content. Groshek and Cutino (2016), for example, find that differences in levels of civility and politeness in tweets correlate to whether they are issued from a desktop computer

or mobile device. The second component of functionality is the layout of the *graphical user interface (GUI)*: the visual portal through which users access and interact with the platform's features. The GUI dictates the look of the social medium's home page, how a user navigates across different spaces within the platform (e.g., from a group page to an individual profile), and the available "social buttons" (Halupka, 2014, p. 162) that simplify processes of content diffusion across networks (e.g., Twitter Retweets or Facebook Shares).

Related to the GUI is the third category of functionality – the *broadcast feed*. The broadcast feed aggregates, ranks, and displays content on a platform in a centralized manner. Social media vary in terms of whether or not the platform maintains a centralized broadcast feed (such as the "News Feed" format popularized by Facebook), what types of accounts can contribute to the feed, and how content on the feed is accessed (i.e., scrolling down versus "click-to-open"). The fourth component of functionality is *supported media*. This refers to the multimedia formats the platform supports technically (e.g., text, images, video, GIFs), the size and length constraints placed on acceptable media (text character limits or video lengths), and the rules governing hyperlinking (both in terms of incorporating links from outside the platform as well as intra-platform linking via hashtags). Lastly, the fifth element of functionality is *cross-platform integration*: users' ability to share the same media across several platforms simultaneously.

These five components set the structural parameters for content creation and distribution across a network. Moreover, they are also mechanisms that give rise to user-generated norms of behavior influencing networks structures (i.e., how ties are maintained) and the content posted by users (what is customary and acceptable on the platform). A platform's functionality can "dispose networked publics toward particular behaviors" (Papacharissi & Easton, 2013, p. 176), and Vaterlaus, Barnett, Roche, & Young (2016, p. 599) have found that transgressing the "unwritten rules" of Snapchat can adversely impact interpersonal relationships among youths. To avoid similar negative effects with potential voters, political actors must be sensitive to the norms of appropriate content and interaction across different social media platforms. If they fail in their online performances through social media, political actors risk being perceived as out-of-touch, inauthentic, and subsequently a less electable to voters.

Algorithmic Filtering

Algorithmic filtering refers to how developers prioritize the selection, sequence, and visibility of posts (Bucher, 2012). For the typology's focus here on political campaigning, a distinction is made between *reach* and *override*. Reach describes how far a post cascades across a broadcast feed or set of networks, and algorithmic filtering can either promote or limit a post's reach. To drive revenue, many social providers allow users to *override* algorithmic filtering and further the reach of a post by offering pay-to-promote services, such as "boosting" on Facebook. Both reach and override are most relevant for social media platforms with one-to-many broadcast feeds (e.g., Facebook, Twitter, and Instagram). Other social media maintaining a predominantly one-to-one messaging profile – such as Snapchat, WhatsApp, Telegram, Kik, and Wickr – are less influenced by algorithmic filtering since messages are sent directly between users. When, though, the distribution and visibility of content is decided by algorithmic ranking, the coded operations implemented by developers have the power to shape users' shared perceptions of culture, news, and politics (Beer, 2009).

Datafication

Datafication, a term coined by Mayer-Schönberger and Cukier (2013), refers to the quantification of users' activities on a social media platform. Whenever users exercise the functionality of a platform, they leave digital traces (Jungherr, 2015) that can be collected for a variety of purposes: corporate advertising, market research, or internal refinement of a platform's algorithms by developers. According to the datafication logic, maintaining a social media profile during campaigns has less to do with establishing connectivity between politicians and citizens. Generally, levels of interactivity between these two actors on social media is low (Graham, Jackson, & Broersma, 2014; Jackson & Lilleker, 2011). The potential benefit for campaigns to take up social media electioneering is that they can monitor and harvest users' digital traces and appropriate them for decisions regarding persuasion or mobilization initiatives (Bimber, 2014). The 2012 Obama campaign, for example, effectively utilized data from Facebook through an application that encouraged supporters to send messages to friends who were calculated, based on multiple datapoints, to be persuadable (Kreiss & Welch, 2015).

The digital architectures typology distinguishes among three elements of datafication: *matching*, *targeting*, and *analytics*. Matching is the process of identifying users in a targetable audience through combining various forms of data. For political campaigns, digital strategists work in conjunction with polling firms to model audiences that are predicted to be favorable to a particular candidate or persuadable along a certain policy issue. Data from these models is then merged with party-collected data (i.e., voter files), data collected by the campaign, and third-party data purchased from commercial data warehouses that sell personally identifiable information (such as information from credit card companies). This data is used to build audiences of individuals who are first matched to their social media profiles and subsequently, targeted via the advertising services offered by the platform. Crucially for campaigns, analytics from these messages are interpreted in real time in order to "split-test" messages, and campaigns run thousands of randomized experiments to better craft and hone their message for persuasive effect.

Data Collection and Method

With the four key features of the typology introduced, the digital architectures of Facebook, Twitter, Instagram, and Snapchat are systematically compared along each category in the following section. The comparison is informed by both qualitative and quantitative data. The former is primarily composed of interviews with three leading digital consultants from four Republican campaigns in the 2016 U.S. presidential election (Scott Walker, Rand Paul, Marco Rubio, and Donald Trump). Answering the call of Barnard and Kreiss (2013, p. 2057), interviews with campaign strategists were chosen to gain first-hand insight into how social media – and different platforms in particular – were utilized in relation to the overall campaign apparatus.

The interview participants included in the study are: Chasen Campbell, Vice President of Client Strategy at the Harris Media, the firm heading Rand Paul's digital strategy; Eric Wilson, Digital Director for Marco Rubio's campaign; and Matthew Oczkowski, Chief Digital Officer for Scott Walker's campaign and Head of Product at Cambridge Analytica, the digital consulting firm that assisted Donald Trump's general election campaign. The semi-structured interviews were

conducted as part of the Social Media and Politics podcast series and are openly accessible for download via any podcast app.

To help illustrate the statements of the digital consultants, social media data from three of the four platforms (Facebook, Instagram, and Snapchat) is selectively presented. Twitter data was not collected during the timeframe studied, and limitations in Twitter’s API rendered attaining comparable datasets for each politician unfeasible retroactively. The data that is included was posted between February 22 – March 15, 2016, a timeframe comprising one week before and two weeks after the string of primary elections known as Super Tuesday. This period has been chosen to ensure a high level of campaign activity on social media. The data stems from five campaigns’ social media profiles: the three highest polling Republican candidates (Donald Trump, Ted Cruz, and Marco Rubio) and top two Democrats (Hillary Clinton and Bernie Sanders).

Facebook data from the politicians’ public pages was collected using the rFacebook package (Barberá, Piccirilli, Geisler, & van Atteveldt, 2017) for the programming software R. Instagram data, on the contrary, is difficult to collect computationally since a user must receive special permissions from Instagram to harvest public data. To meet this limitation, Instagram data was collected via accessing platform’s web version through the author’s personal account. Politicians’ Snapchat “stories” – compilations of user-generated messages that are accessible for 24 hours – were collected by utilizing Android emulation and screen capturing software. First, BlueStacks App Player was installed onto a Macintosh computer, enabling the author to access Android apps from the computer. After downloading Snapchat, the politicians’ accounts were identified and followed, with the exception of Donald Trump. As explained in the paragraphs below, newcomers to Snapchat were difficult to identify, and for this reason Trump’s account is not included in the analysis. However, another study (Al Nashmi & Painter, 2017) finds that over the same time period, the Trump campaign rarely sent Snapchats.

Facebook, Twitter, Instagram, and Snapchat Compared

	Network structure		
	Searchability	Connectivity	Privacy
Facebook	High	Personal: Dyadic Public page: Unidirectional	Personal: Closed Public page: Open
Twitter	High-medium	Unidirectional by default Dyadic (by changing privacy)	Open by default
Instagram	Medium	Unidirectional by default Dyadic (by changing privacy)	Open by default
Snapchat	Low	Dyadic by default Unidirectional (by changing privacy)	Closed by default

Table 1: Network Structure

Network Structure

For a platform to be characterized as a social medium, it must support interactions among users. As argued above, network structure - the criteria governing connections between accounts - is a key component of a social media’s digital architecture. Table 1 outlines the network structure characteristics of the four platforms.

A precondition for user interaction and network formation is *searchability* – how accounts are identified and their content accessed. On each of the platforms included here, political actors maintain publicly searchable profiles with openly accessible content. However, the searchability of political accounts varies across platforms and is influenced by the account’s username and elements of the graphical user interface. On Facebook, Twitter, and Instagram, the public pages of politicians are typically identifiable by simply searching their real names, and the authenticity of a page is often denoted via a blue verification checkmark on the GUI next to the account’s username. For Instagram and to a lesser extent Twitter, searchability can be limited since multiple results (including parody accounts) are returned after searching a politician’s name, and political accounts share the same format as that of the average user. On Facebook, politicians can establish public pages that set them apart visually (and functionally) from private accounts, and these pages feature prominently in search results. Political accounts on Snapchat have the lowest searchability and were extremely difficult to identify through direct search in the 2016 primaries. To follow a politician, users needed to know the exact username of a politician’s account, which did not follow a uniform pattern (e.g., “GovernorOMalley”, “CarlyforAmerica”, and “Christie.2016”). The platform did not roll out a verification feature until November 2015, and most politicians did not have a verified account during the time under study.

In order to publicize their Snapchat accounts, campaigns focused on cross-platform promotion to their existing followers on other platforms. Wilson stated that the Rubio campaign promoted merchandise giveaways on Facebook and Twitter, where the campaign already had a strong presence. To be eligible, users were required to document that they followed Rubio on Snapchat by uploading screenshots from the platform to their other social networks. Oczkowski mentioned that Scott Walker, who had built a sizeable social media following through his Wisconsin recall election in 2012, promoted his Snapchat account across Facebook, Twitter, and Instagram but also would “plug it at events and rallies in person.” While campaigns tried to popularize their lesser-known social accounts on other online platforms and at offline events, these messages would be primarily visible to the campaign’s already existing supporters.

The other aspects of network structure - connectivity and privacy - are less relevant for political campaigning than they would be for analyses of individual user networks. On social media, citizens establish connections with political accounts in a uni-directional manner (that is, users subscribe to politicians’ content without needing approval), since the privacy settings for these accounts are generally calibrated to be openly accessible. Thus, the campaigns did not exhibit significant differences in practices of connectivity or privacy across platforms.

As argued above, however, connectivity and privacy can affect the norms of communication among individual users. We can therefore expect that campaigns would be cognizant of these norms when crafting their communication strategy across different platforms. The low searchability, dyadic connectivity, and restrictive default privacy settings of Snapchat set it apart from more open platforms like Facebook, Twitter, or Instagram. Likely, these features affect why Snapchat encourages a more informal mode of communication among close ties (Bayer et al., 2016). Oczkowski seems to confirm the informality and uniqueness of Snapchat communication when he states that the Walker campaign used the platform to “just give

[followers] news and updates from the road on what we were doing, and making sure that we were using Snapchat appropriately and not just using it with the same exact content from every other channel.”

Despite the different type of communication exhibited on Snapchat, the barriers to searchability limited the platform’s utility for campaigns. Audiences were small, with Oczkowski estimating the Walker campaign’s Snapchat following to be upwards of 10,000 and Wilson claiming the Rubio channel to get view rates of a “few thousand per day.” In contrast, politicians on Twitter, Instagram, and particularly Facebook have a much larger user base, incentivizing campaigns to actively use the platform to reach voters. Comparing the view counts of the same videos posted across the platforms can give an indicator of the audience sizes that campaigns reach. A 30 second video posted by the Rubio campaign on March 5th, showing Rubio greeting supporters before a speech ahead of the Kansas caucuses, yielded 30,000 views on Instagram, 43,000 on Twitter, and 66,000 on Facebook – all significantly higher than the Wilson’s estimation of the viewership on Snapchat. The number of Facebook video views registering highest is a consistent trend across the campaigns. For example, a video issued by the Trump campaign on March 13th – a 13 second video of Carly Fiorina denouncing Ted Cruz – garnered 676,000 views on Instagram, 778,000 on Twitter, and over 1.5 million on Facebook.

The massive user base of Facebook, whose platform allowed users to easily search and subscribe to politicians’ accounts, renders the platform an attractive medium for campaigns to broadcast their message to a wide audience. At the time of the data collection, Facebook (2016) had 1.1 billion daily active users, Instagram (2016) approximately 300 million, and Snapchat around 120 million (Snap Inc., 2017). Twitter did not report daily active users at the time but claimed 310 monthly active users (Twitter, 2016). Although these are global figures and not limited to the U.S., Facebook clearly holds the pole position in regards to audience size (according to Campbell, 90% of American eligible voters). Figure 1 below depicts the number of posts issued on Facebook and Instagram, as well as the number of Snapchat stories.¹

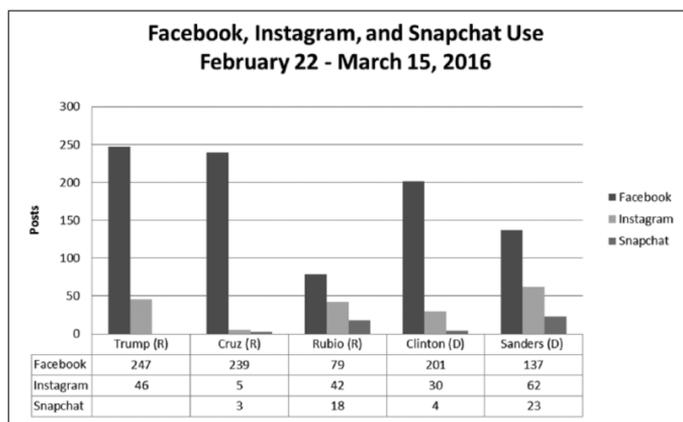


Figure 1: Facebook, Instagram, and Snapchat use per campaign

¹ The number of Snapchat stories, not individual snaps, are reported. Due to the ephemerality of snap messages, some may be missing from the collected data.

Unsurprisingly, of the three platforms included in Figure 1, campaigns posted the most content on Facebook. Figure 1 also shows that campaigns’ propensity to use newer platforms like Instagram and Snapchat varied. Lower polling underdog candidates, like Rubio and Sanders, showed high adoption rates for Instagram and Snapchat. However, the trend is not consistent as evidenced the Cruz campaign’s low adoption rate.

Functionality

While network structure is one factor influencing Facebook adoption, the second part of the typology – functionality – also helps explain why campaigns take to Facebook. Table 2 outlines the differences in functionality across the three platforms:

	Functionality				
	Hardware	GUI	Supported media	Broadcast feed	Cross-platform integration
Facebook	Desktop, smartphone, tablet, smartwatch	High complexity (e.g., News Feed, public pages, groups, events)	Text (63,206 characters) Images Video (45 min) Hyperlinks Hashtags	News Feed	None supported
Twitter	Desktop, smartphone, tablet, smartwatch	Medium complexity (can be broadened with dashboards)	Text (140 characters) Images Video (30-s) Hyperlinks Hashtags	Home timeline and Highlights (opt-in)	None supported
Instagram	Same as Facebook	Medium complexity	Text (2,200 characters) Images Video (60-s) Hyperlinks (in bio) Hashtags	Friend feed and Explore feed	Posting allowed to Facebook and Twitter
Snapchat	Smartphone exclusively	Low complexity, simple layout	Text (31 characters) Images Video (10-s)	Story feed and Discover feed	None supported

Note. GUI = graphical user interface.

Table 2: Functionality

The first aspect of functionality is hardware. Facebook, Twitter, and Instagram are accessible from multiple types of hardware: desktop computers, tablets, smartphones, and smartwatches. Snapchat, on the other hand, is *exclusively* mobile and cannot be accessed from any other type of device. This hardware-specific feature of Snapchat has two direct implications for content creation on the platform. First, in order to post content featuring a political candidate, the person filming snaps from a smartphone must be in close physical proximity to the candidate. The digital directors stated that a candidate’s “body man,” or personal assistant who travels with the candidate, was usually responsible for the Snapchat account. The second implication of Snapchat’s mobile exclusivity is that content needs to be uploaded directly from the mobile device, and therefore little editing or consultation with the campaign occurs before publishing

content to a story. On the other platforms, by contrast, campaigns have the ability to upload edited content at scheduled, strategic time points. Wilson hints at how Snapchat’s digital architecture generates a type of content different than on other platforms:

“The unique thing about Snapchat is it *has* to be done right there. You can’t upload a photo, you can’t edit a video; it has to be physically from that device. So, you were seeing stuff that was coming right from, you know, where Marco was at that exact moment. It wasn’t coming back to headquarters and getting filtered or edited in any way.”

Since Facebook, Twitter, and particularly Instagram provide several functions to edit content prior to publishing, the type of visual content on these platforms is generally more polished and complex (i.e., infographics or memes). Figure 2 below illustrates how Snapchat’s hardware restrictions encourage a more raw type of footage, versus Instagram’s more artistic, edited shots. Both posts were published on February 26 and cover the same event. The left is a screenshot of a Snapchat video from a rally while the right depicts the campaign’s Instagram

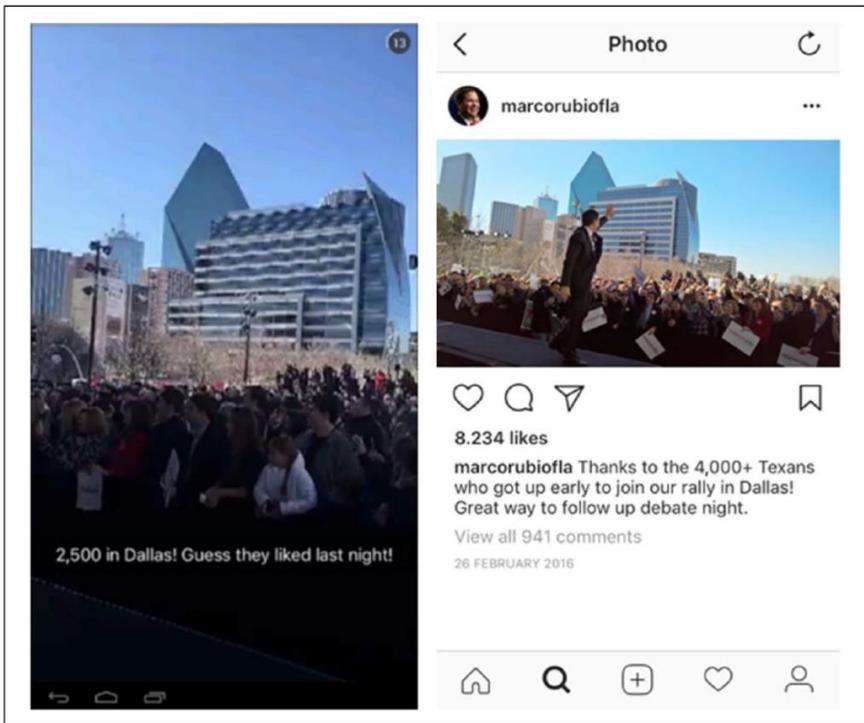


Figure 2: Snapchat/Instagram Comparison

representation of the event through a still image.

Clearly, the Instagram photo has been edited (i.e., “filtered”) for artistic effect. Moreover, the picture has been strategically chosen to show both the candidate and a band of enthusiastic supporters. On Snapchat, the audience is depicted in real time and appears much more mundane. Interestingly, the two representations also differ in the number of reported attendants at the rally (2,500 on Snapchat versus 4,000 on Instagram). This difference may signal that the ability to control or schedule content allows campaigns more time to validate or correct information.

Snapchat’s less filtered glimpses into the campaign, compared to the other platforms’ more polished visual content, is thus not only attributable to hardware but also its *supported media*, outlined above in Table 2. All four platforms supported text, images, and video, but they placed different constraints on the length of these media at the time of the campaign. Concerning text, Facebook capped posts at 63,206 characters, Twitter its notorious 140, Instagram limited captions to 2,200 characters, and Snapchat only allowed 31 characters to be overlaid to an image or video “snap.” Regarding video, Facebook supported content up to 45 minutes, Twitter and Instagram a much lesser 30 and 60 seconds respectively, and Snapchat only 10 seconds per snap. Uploaded images are supported on Facebook, Twitter, and Instagram, although the optimal pixel size and level of compression varies across them. This means that if a campaign wants to share the same image across different platforms, creative teams may be enlisted to alter the image to meet the requirements ingrained in the platform’s architecture.

The types of multimedia the platform supports, and the limitations placed on them, directly affects the content campaigns can communicate. Although Instagram and Twitter supported video, their limitations on length do not allow for substantial content from debates or media appearances. Video content on Instagram was scant, with videos comprising a proportionately low percentage of posts compared to images. The percentage of video content on Instagram, by campaign and in descending order, was: Trump (15%), Rubio (10%), Sanders (4%), Clinton (3%) and Cruz (0%). Facebook had a much higher percentage of video content, with most running over 60 seconds.

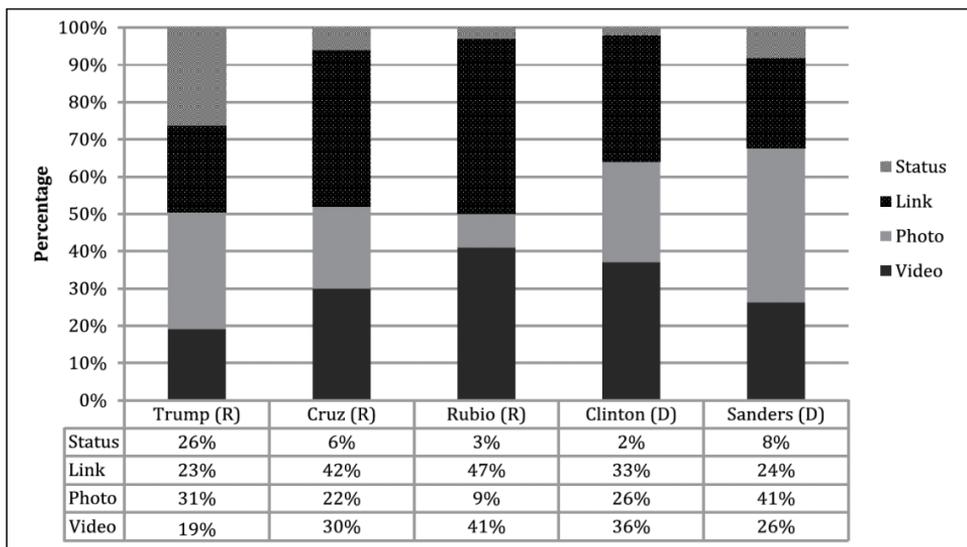


Figure 3: Facebook Content by Media Type

Supported media also refers to the rules governing hyperlinking, and Figure 3 shows that between 23%-47% of campaign’s Facebook content comprised of links. By-and-large, links were aimed at redirecting users to the campaign’s website or to a media article about the candidate. Although limitations in the data do not support a strict comparison, similar usage of links can also be expected on Twitter. On Instagram and Snapchat, campaigns could include web addresses to their posts in text, but they were not actionable (i.e., users could not click on them to be directed off the platform). One exception is that on Instagram, an actionable link can be included only in a user’s profile description. This led the Clinton and Rubio campaigns

to encourage users to “check out the link in bio for more info.” The purpose of driving users off the platform and onto the candidate’s site is to sign them up for email lists. Oczkowski described emails as “the lifeblood of fundraising” since “over 70% of all money raised online comes from email programs,” and they’re also “very helpful in turning people out to events and rallies.”

How users access media content within these platforms, though, is influenced by two aspects of functionality: the broadcast feed and the graphical user interface. Whereas the former structures content, the latter governs how it is displayed. Facebook’s centralized broadcast feed (i.e., the “News Feed”) provides the user with a series of algorithmically filtered content published by peers, subscribed pages, advertisers, and other sources appearing on the feed as a result of algorithmic contagion. Twitter’s centralized feed (“Home timeline”) presents users with chronologically-ordered posts based on their subscriptions. On mobile devices, users also can opt-in to the Highlights feed, which presents users with more algorithmically filtered content based on relevance. Instagram has two broadcast feeds: one for subscribed connections (and advertisers), and the “Explore” feature that provides content suggestions to users. Snapchat’s digital architecture, by contrast, includes almost no algorithmic filtering; the platform sorts content chronologically according to when a connection posted a message. Snapchat does, however, have a mass broadcast feed in the form of “Live Stories”: series of user-generated content that are curated by the platform and typically focused around an event or geographical location.

So far, the functionality of the platforms has been compared according to how elements of their digital architecture influence content production and diffusion within a platform. The last component of functionality relates to cross-platform integration: whether users can share the same content across different platforms simultaneously. Neither Facebook nor Twitter allows posting to different platforms, but Instagram allows users to share posts across Facebook and Twitter. On Snapchat, users can only save content taken in the app’s camera and repurpose it to other platforms. Since the same content can be shared across Facebook, Twitter, and Instagram, and content taken via Snapchat can be uploaded to these platforms as well, it cannot be assumed that political campaign’s content is specific to any one particular platform. For example, both the Trump and Rubio campaign uploaded Snapchat videos (1 and 2, respectively) onto their Instagram accounts. Hillary Clinton uploaded a picture of one of her tweets to Instagram. The high percentage (26%) of text only statuses making up Donald Trump’s Facebook content, as shown in Figure 3, were largely comprised of the same messages he posted on Twitter.

Thus, although a platform’s architecture might encourage or necessitate a certain type of content, scholars should not assume that political content issued on a social media platform is necessarily specific to it. To illustrate this point empirically, Figure 4 below presents the percentage of Instagram content that was also present on Facebook. The “Direct Overlap” category represents when the visual content and caption were the exact same across both platforms. “Edited Overlap” refers to when the visual content was the same but the caption was changed (for example, to incorporate a hashtag, change a hyperlink, or slightly modify phrasing). “Instagram Only” is the percentage of content that was not posted to Facebook.

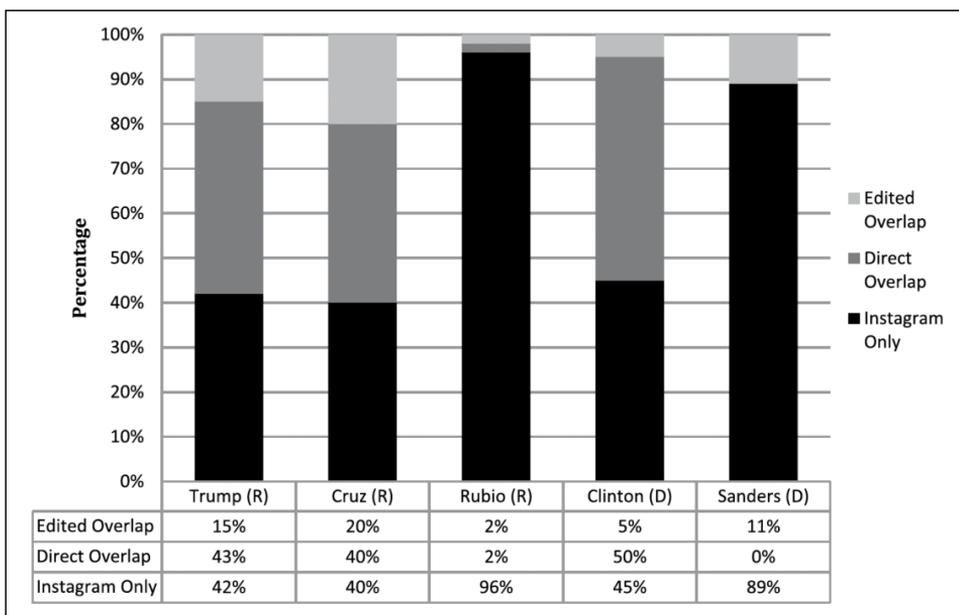


Figure 4: Facebook/Instagram Cross-Platform Integration

Figure 4 reveals that for three out of the five politicians (Trump, Cruz, and Clinton), over half of the content posted to their Instagram profiles was also made available on Facebook. For Rubio and Sanders, on the other hand, content posted on Instagram was typically not uploaded to Facebook. These two underdog campaigns were also the most active on Snapchat, suggesting that new platforms may be more attractive to low-polling campaigns.

Algorithmic Filtering

The remaining two categories of the digital architectures typology - algorithmic filtering and datafication – are difficult to assess with public social media data, but they are presented briefly here to round off the comparative platform analysis. Table 3 below presents an overview of the similarities and differences across platforms.

	Algorithmic filtering	
	Reach	Override
Facebook	Heavily filtered (relevance)	Pay to promote User-diffusion (sharing)
Twitter	Moderately filtered (chronology)	Pay to promote Index via hashtags User-diffusion (retweeting)
Instagram	Moderately filtered (chronology)	Pay to promote Index via hashtags
Snapchat	None	No algorithm to override

Table 3: Algorithmic Filtering

As alluded to previously, Facebook’s broadcast feed exhibits heavy algorithmic filtering based on calculated relevance, while Instagram and Twitter’s algorithms place more emphasis on the chronological order of posts. Snapchat has little to no filtering, granting the user a high level of autonomy in selecting content.

Algorithmic filtering directly influences the organic (i.e. non-paid) reach of a post. Facebook page posts, for example, typically reach less than 10% of subscribers organically, a number that continues to decline over time (Manson, 2014). The algorithms of Twitter and Instagram, favoring chronology over relevance, grant campaigns a more direct line to subscribers. However, filtering by chronology also makes the reach of the post sensitive to the overall activity on the platform. During times of heightened political activity (e.g. around an election or debate), posts can be easily “drowned out” by higher levels of posting by other users. Snapchat’s virtually non-existent filtering allows users the most direct access to campaign content, with the important caveat that these broadcasts disappear after 24 hours.

To counter these limitations and extend reach, each platform offers mechanisms to override algorithmic filtering. Facebook, Instagram, and Twitter offer pay-to-promote services to extend the reach of an existing post such “boosting” to a wider audience based on demographics or interests. Apart from this market-driven feature, campaigns can enlist the help of supporters to diffuse messages across their own networks on Facebook and Twitter (via sharing and retweeting). On Twitter and Instagram, hashtags are an effective means to index posts outside of one’s immediate follower network (Facebook has also incorporated hashtag functionality, although it remains largely ineffective for increasing reach due to Facebook’s less open network structure). Although Snapchat lacks a curating algorithm to be overridden, being featured in a Snapchat “Live Story” can drastically increase the reach of their content. Wilson mentioned that Snapchat worked with campaigns to promote candidacy announcements, debate days, and election days. When the Rubio campaign was featured in a Live Story, which were broadcast either nationally or in a specific state, view counts would go from the average “few thousand per day” to “definitely get[ing] up into the higher five figures of views.” Whereas campaigns can utilize override mechanisms to extend the reach of a post, they generally rely on datafication techniques to control the audiences of specific posts.

Datafication

Datafication, in a campaign context, implies the process of quantifying users’ activity for strategic purposes. On the one hand, data is utilized for matching and targeting specific audiences with the intent of persuasion or mobilization. On the other, datafication allows for campaigns to monitor and collect analytics that help inform future strategy. Datafication is a complex, expensive, and iterative process in contemporary digital campaigning. Oczkowski describes the process as, firstly, using a combination of data from voter files, commercial warehouses, and polling from a small part of the electorate (around 1,500 people) to then, secondly, extrapolating this data to build look-alike audiences of larger portions of the electorate. Targeted messages are then issued to persuade voters, and analytics (often monitored in real time) help measure their effectiveness. Oczkowski describes the process while hinting at the iterative character of datafication:

“So, I say, these are Trump supporters, these are people who love to reduce taxes, these are gun supporters, these are the religious rights – all based on survey data and database data that I have and that I’ve brought in. From there, we’re then segmenting audiences for the purposes of our media teams to buy digital ads or to buy television, but also for creative teams to be able to craft messages: the ads, the types of things we’re saying to people. Those two things then come

together, we spend money to do paid media, and then we go back in the field and we're consistently polling to see if what we're doing is working and how effective it is."

The above quote highlights how datafication has both offline (traditional polling and television) and online (digital databases and ads) dimensions. Regarding the present study's focus, the digital architectures of each platform offer varying types and degrees of datafication, which are summarized below in Table 4.

	Datafication		
	Matching	Targeting	Analytics
Facebook	Highly developed "Custom" and "Lookalike" audiences	Extremely sophisticated Several ad formats	Complex, real-time analytics (walled- garden)
Twitter	Moderately developed "Tailored Audiences"	Moderately sophisticated Few ad formats Tagging journalists	Open API Dashboards
Instagram	Same as Facebook	Same as Facebook	Same as Facebook
Snapchat	Least developed "Snap Audience Match" (opt-out)	Least sophisticated Ads in stories (opt- out)	Rudimentary in primary, improved in general election

Note. API = application programming interface.

Table 4: Datafication

Matching, or the process of linking data to online social media profiles, differs across platforms. Campbell describes the high sophistication of Facebook's matching service, "Custom Audiences," as being able to match 70-80% of users in a database within 30 minutes based solely on their names and home mailing addresses. Once a custom audience is built, Facebook can recommend other users who are outside of the custom audience, but calculated to share similar datapoints, through the "Lookalike Audience" feature. Matched or lookalike audiences can then be targeted via a plethora of ad formats customizable by: multimedia, placement on the GUI, and hardware (mobile versus desktop). Owned by Facebook, Instagram offers the same suite of tools. Twitter has a similar matching and lookalike service called "Tailored Audiences." However in comparison with Facebook, Twitter's matching is less sophisticated (e.g., it does not support home mailing addresses) and offers few ad formats outside of promoted tweets, accounts, and trends. According to Campbell, though, Twitter is used to target lists of known journalists so that: "the people who are writing the [mainstream media] stories at the end of the day are the ones seeing your ad, and you're encouraging earned media responses." Snapchat, as the newest platform with the least developed datafication features, only began offering audience matching ("Snap Audience Match") in September 2016, one month before the general election. Targeted ads on Snapchat are inserted between stories, and the platform offers users the option to opt-out of matching and targeting in their privacy settings.

Both matching and targeting are resource-intensive processes involving extensive knowledge and monetary capabilities. As highlighted by Kreiss & McGregor (2017), technology firms offer consulting services to high-profile campaigns to assist them in crafting their targeting strategy. Campbell highlights the importance of these services when he states:

“We value those relationships and there are some very, very smart people working at these companies that are helping us to execute the strategy that we’re coming up with, and in some cases even help us form the strategy that we’re coming up with, because they understand their platforms better than anyone does...almost daily, we’re speaking to our teams [at Google, Facebook, and Twitter] that actually help to facilitate all of the advertising”.

While tech companies have partisan teams that assist campaigns in their targeting strategies, this relationship is ultimately symbiotic: companies raise revenue, campaigns raise electoral support. For campaign consultants, analytics become crucial for assessing the effectiveness of a communication strategy and necessary for acquiring more resources for digital advertising. As Wilson remarks, “It’s hard to make the case for resources when you don’t have the analytics to back it up.” Analytics help measure return on investment (ROI), but the availability of analytics differs across platforms.

Facebook has increasingly taken steps to limit access to both Facebook and Instagram data; the platform’s “walled-garden” approach requires payment (via advertising) in exchange for data. According to the interviewees, Snapchat as a start-up was largely unable to inform campaigns about their view rates, and the purpose of advertising on the platform was simply to better get a sense of engagement. Twitter, according to Oczkowski, “is really the only open Firehouse left,” and Wilson mentioned using Twitter to monitor mentions of certain initiatives the Rubio campaign was running, such as a “Vote Early Day” initiative aimed to increase turnout. Dashboard applications like TweetDeck or Hootsuite can campaigns help monitor and measure specific initiatives. However, Oczkowski also stated the limitations of Twitter data: “Twitter data’s great but it doesn’t represent most voters in America; it’s a minority of very vocal people.” In order to understand and reach a larger portion of the electorate, campaigns must invest significant resources into both online and offline data acquisition. Moreover, it must be stated that from a data collection and targeting standpoint, social media platforms comprise only a part – but an increasingly important part – of the modern day campaign apparatus.

Discussion and Conclusion

Although the social media landscape remains dominated by early market entrants like Facebook and Twitter, scholars need new approaches to meet – but also anticipate – rapid changes in this ever-evolving digital space. The present study has put forth the argument that scholarly attention to a platform’s digital architecture provides a valuable and flexible heuristic to approach cross-platform research of social media. Ultimately, the study’s aim has been to illuminate new pathways for comparative social media research in the context of political campaigning, but the framework can also be applied to studies of citizens’ discussions or journalistic reporting.

Theoretically, the study posits that four aspects of a platform’s digital architecture influence political communication on social media – network structure, functionality, algorithmic filtering, and datafication. Respectively, these four infrastructural elements of platform design

impact the decisions that political campaigns make in terms of: the audiences they try to reach, the form and content of messages they produce, the diffusion patterns of these messages, and how financial resources are allocated for digital campaigning on social media.

The study's exploratory operationalization of the digital architectures framework, applied to the case of the 2016 U.S. elections, yields three interesting results. First and foremost, campaigns shared much of the same content – in text, images, and video – across different social media platforms. Basing their study on interviews with U.S. campaigners, Kreiss et al. (2017, p. 2) argue that “campaigns must produce their own creative content for very different platforms like Facebook, Instagram, Twitter, and Snapchat.” While certainly true to an extent, this study – even with its limitations - finds an overlap in campaign messages across all of the platforms studied. Although one platform may encourage (or even necessitate) a certain type of content, other platforms with similar functionalities can support the re-appropriation of content across multiple channels. Scholars should therefore exert caution in assuming that the content posted to a particular social media is unique to the platform. Cross-platform analysis, with rigorous attention to platforms' digital architecture, can help ascertain whether and why content is specific to a given platform.

Second, both the interviews and social media data point to the dominance of Facebook in the 2016 election cycle. The platform was the most attractive social media for political campaigns on account of several architectural design features. Facebook's public pages, providing an open network structure with easily searchable accounts, supported large social media followerships (demonstrated here, for example, by differences in video view rates across platforms). The functionality of hyperlinking, meanwhile, was heavily utilized by campaigns to drive traffic to their websites (for fundraising) and collect emails (for audience matching). Non-restrictive rules regarding video lengths rendered the platform a key medium for long-form visual telecommunication. Algorithmic filtering, and the ability to override it via paid advertising, allowed campaigns to reach potential voters outside of their organic follower bases. Moreover, Facebook's sophisticated matching, targeting, and analytics suites enabled high-resource campaigns to split-test messages to voters in strategic geographical locations.

Third, even though campaigns invested less heavily in newer platforms like Instagram and Snapchat, the study finds that all candidates analyzed were active on these platforms. A standard trend observable across the campaigns is that Instagram was used more often of the two. This is likely due to the functionality differences between the two platforms: Instagram allows campaigns to control the image of their candidate via uploading polished content at a scheduled time. Snapchat, while carving its niche in the social media marketplace through its live and disappearing broadcast features, was likely more risky (and less useful) for campaigns to adopt than Instagram. Crucially, Snapchat lacked a comprehensive datafication incentive to reward politicians' who invested in the platform. Future work can dive deeper into investigating the content (and timing) of messages on these and other emerging platforms, in order to investigate whether they reveal patterns of communication that help elucidate a campaign's wider strategy.

The empirical analysis is, certainly, limited by several factors. Twitter data was not attainable, and the data from other platforms is solely that which was publically available. Targeted

advertisements are often unpublished, rendering their collection via traditional computational means difficult. Such private posts likely differ in content to public ones, and their inclusion in the study would likely affect the descriptive results reported here.

In concluding the study, an important note must be made regarding the digital architectures framework: digital architectures are subject to rapid and transformative change. Even though Snapchat's architecture, for example, offered only rudimentary analytics to campaigns during the primaries, the platform was updated by the general election to provide campaigns with a sophisticated means of acquiring users' emails. The Trump campaign, says Oczkowski, gathered "hundreds of thousands of emails off the Snapchat platform" by presenting users with advertisements encouraging them to "swipe up" and enter their email addresses. Even in the interim between the 2016 primaries and the writing of this article, all of the platforms included here have undergone significant transformations in their digital architectures. Nevertheless, the comparison's purpose has been to elucidate how the architectures of a platform can be compared, systematically, at a particular point in time.

Future scholars may wish to engage with the question of how changes in a platform's digital architecture over time influence campaigning practices longitudinally, as well as how the architectures of platforms not analyzed here (e.g., YouTube or WhatsApp) affect campaigns' digital communication strategies. Moreover, data from other sources such as voter turnout, donation, or polling figures should be incorporated into future research designs, in order to corroborate how digital communication is impacted by offline dynamics critical for campaigns and their strategies.

V.

Engaging with European Politics through Twitter and Facebook: Participation beyond the National?

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Abstract

This chapter illustrates how citizens can enact varying styles and degrees of political engagement through social media platforms. It also investigates if citizens engage with political content in ways unhindered by national boundaries. We distinguish between three primary types of content styles (factual, partisan, and moral) and four degrees of engagement (making, commenting, diffusing, and listening). Moreover, we argue that differences in Twitter and Facebook's digital architectures encourage certain styles and degrees of engagement over others, and that the two social platforms sustain different levels of transnational activity. Supporting our argument with European cases, we suggest that Twitter is more suitable to fulfill social media's transnational promise than Facebook, which is better adept at stimulating political participation.

The Participatory and Transnational Promises of Social Media

In Europe as in many other parts of the world, social media platforms (SMPs) have amplified the intensity and broadened the scope of information and communication exchange among citizens. Although the proportion of political content on social media is marginal compared to entertainment, personal lifestyle, or local news, in today's mediatized political landscape the contours separating political news from other genres have become increasingly opaque. Especially before elections or in times of social unrest, information about politics is interwoven into the online news feeds of many who are not necessarily interested in politics per se. These same individuals may encounter – and subsequently engage with – politics through SMPs that did not exist just ten years ago. Online-specific forms of engagement, such as 'posting' on Facebook or 'tweeting' on Twitter, are no longer exclusive to the younger generation; social media use has spread to all age groups.

Social media therefore affect how citizens engage with politics. SMPs increase citizens' access to political information, either through direct subscription to political and media sources or through exposure to political content published by peers. In addition, SMPs reduce the costs of citizens' interaction with politicians, institutions, journalists and other citizens. These two potentials of social media carry a participatory promise: to facilitate citizens' engagement with politics by increasing their access to political information and expanding their repertoires of political activity. At the same time, the increasingly individualized ways in which citizens take part in politics online are firmly embedded in social interactive environments. Within these digital public spheres, geographical borders lose significance, and political content is shared and considered relevant by a community of users that is not necessarily identical to the national community of citizens. Social media may thus also hold a transnational promise: to contribute to instantaneous, cross-border flows of political communication. In short, the participatory promise of social media refers to the stimulation of engagement with politics, whereas the transnational promise refers to the potential of this engagement to transcend geographical delimitations.

The participatory and transnational promises of social media are important to consider in theorizing the future of European politics. Assessing the fulfilment of social media's participatory promise, by exploring how and to what extent citizens engage with politics online, grants insight into whether SMPs are supporting a politically informed and engaged European demos at a time characterized by apathy and distrust towards national and EU institutions (Eurobarometer 83, 2015). Social media and its transnational promise, on the other hand, remains understudied and could indicate the incipient existence of digital European public spheres (Dutceac Segesten & Bossetta, 2017c), where citizens meet to share information and contribute to the politicization of European issues (e.g. the refugee crisis, economic austerity, or EU-level Internet privacy laws).

Both promises holster the potential to alter longstanding power relations among citizens, politicians and the media. The participatory promise may increase citizens' political awareness and, due to the ease and speed of social media communication, facilitate grassroots organization initiatives as a means to exert pressure on political and media elites. The transnational promise, meanwhile, could influence these elites' reactions to issues previously defined as domestic by increasing the voice of 'activists without borders' mobilized in pan-European causes and by reducing the influence of national media filtering on political news.

Inasmuch as social media provides new opportunities for citizens to get informed about and involved with politics, each SMP has its constraints for how users can acquire information and

manifest their political interest on the platform. The focus of the present chapter is to explore first how citizens can engage with politics, not at the aggregated level of collective action and protest (Mercea, 2017) but at the individual level of routine interaction with political content online. Social media usage varies, we shall argue, along different content types indicative of three distinct styles of engagement. It makes a difference whether users are primarily oriented towards the exchange of factual knowledge, whether they enter opinionated debates, or whether they search for a common moral ground. Furthermore, social media usage shows different degrees of political engagement in such factual, partisan, or moral debates, ranging from the active production to passive reception of political content. In the second section, we aim to demonstrate how the different technological designs of SMPs – what we refer to as ‘digital architectures’ – influence the styles and degrees of citizens’ engagement with politics on social media and affect the aforementioned participatory and transnational promises of social media. Lastly, we provide empirical examples from European cases to illustrate our argument that the digital architectures of SMPs have a demonstrable impact on the styles and degrees of citizens’ engagement with European politics.

Styles and Degrees of Engagement on Social Media

In the context of online networking environments, scholars debate whether social media merely reproduce existing forms of television spectatorship, turning the social media user into the spectating ‘couch potato’ already criticized by TV studies (Livingstone, 2003), or if social media encourage meaningful types of engagement with political news. On the least engaged side, that of the user-spectator, SMP users are primarily passive receivers of information. At the most engaged end, the social media user approaches the ideal of a fully sovereign citizen who participates in the forum of public opinion and is constitutive to the legitimation and control of government (Dahlgren 2013). Through social media, users can practice or enact citizenship, which is why in the following we use the terms ‘user engagement’ and ‘citizen engagement’ interchangeably.

Between the user-spectator and the fully sovereign user-citizen, there are various degrees of meaningful engagement with political content. On social media, citizens often get involved in politics in more subtle ways than political participation as traditionally understood (e.g. canvassing, voting, or protesting). SMPs encourage ‘latent’ forms of participation (Ekman and Amnå, 2012), such as reading about political information, discussing political issues, or joining groups sharing a politically-related interest. Latent forms of participation, while not necessarily time or resource-intensive, still have a demonstrable effect on citizens’ political opinions and behaviour (Boulianne, 2009). Therefore, we use the term ‘citizen engagement’ to refer to both the action-oriented forms of political content creation as well as to the more latent and indirect forms of participation.

The growing interest among political actors and institutions to exploit this potential of citizens’ engagement for the purpose of political education and mobilization is accompanied by a legitimate concern that engagement with political content via social media still does not emancipate and empower the user as a fully sovereign citizen. These deficits of citizen empowerment may be attributed either to group psychology or to legal and institutional structures. Group psychology explains individual behaviour online through mechanisms of social control and perceived social risk (Sunstein, 2009; Keen, 2012). The structural, political economy explanation for users’ online activity lies with SMPs’ technological designs, which are built to further financial gains (Fuchs, 2014). Both of these schools of thought are skeptical of the democratizing opportunities offered by SMPs since, firstly, the political language of social media is often found to be self-directed, emotional, and subjective to morality and taste.

Secondly, critics argue that social media debates often remain detached from formal, decision-making contexts and therefore bear minimal impact on political outcomes.

While we acknowledge the deficits of citizen engagement on social media, in this chapter we also see the potential of SMPs to open new avenues for individuals to exercise their civic duties. To advance the debate on online political engagement through social media, we distinguish between three primary styles through which users can engage with political content: factual, partisan, and moral. Succinctly put, users can engage with political content online by contributing with information (the factual style), positioning themselves in debates by voicing an opinion (the partisan style) or taking a moral stance or insisting on a normative standpoint (the moral style).

These ideal types of political content correspond to three roles that can be assumed by the user-citizen on social media platforms: the witness, the advocate, and the judge. The user-witness engages with knowledge and factual information, for instance by disclosing facts about political events (the investigative user or the participatory journalist). This factual style of political engagement is exhibited by neutral, informed language and the categorization of content according to criteria of scientific truth (correct-incorrect).

The user-advocate takes sides in the interpretation of political events, defends particular interests, advances an ideological position, or relies on notions of group belonging. The partisan style is reflected in the use of opinionated language with strong ideological or identitarian components that are used to confront others in a game of power, interests, and identities (e.g., proponent-opponent, friend-foe, or us-them).

The user-judge is not only morally engaged in a cause but also attributes responsibility, appeals to the solidarity of some, or blames the wrongdoing of others. The moral style is reflected in the use of normatively-laden language and a form of discourse that strives to convince others about the fairness of a particular cause or the necessity to find common ground by reconciling partisan interests for the sake of a higher, universal set of principles (e.g., the morally upright and the morally degraded, the good and the bad, the innocent and the culprit). It goes without saying that these roles are not mutually exclusive but can be taken simultaneously by the same (group of) persons who have a voice in the media.

While the factual, partisan, and moral styles refer to the roles adopted by citizens online (i.e., the witness, the advocate, and the judge), the activities they perform in enacting these roles can be categorized along four degrees of political engagement: making, commenting, diffusing and listening.

(1) **Making** is the act of creating new political content, whether it contains facts about politics, the expression of a partisan position regarding a political issue, or an offering of moral support to victims of a tragedy. Twitter and Facebook can be used, for instance, to tweet or post original content that is meant to reveal alternative facts (e.g. ‘There were no incidents of violence at today’s manifestation for the victims of terrorism’), to express an ideological standpoint (e.g. ‘I believe that the welfare state is needed to reach equality between men and women on the labor market’), or to mobilize solidarities in the name of moral principles (e.g. ‘Help the Syrian refugees. They are people too’).

(2) **Commenting** refers to the act of responding directly to pre-existing factual, partisan, or moral content. Comments are conceived here as speech acts that contribute to the collective interpretation and engagement with already existing political content. As such, comments are a key component in driving political discussions online.

(3) **Diffusing** is the act of liking or sharing content that provides factual information, is generated for the purpose of political campaigns, or is meant to involve other users in acts of political mobilization and solidarity. Citizens here disseminate pre-existing political content in the form of text, multimedia, or hyperlinks to show personal commitment or as a means for creating awareness. As with commenting, diffusing is often used to support campaigns, and the number of ‘likes’ and ‘shares’ is, in fact, often used as an effective measurement of gauging community support for campaigns on social media.

(4) **Listening** (a term popularized by Crawford, 2009) is the most passive form of engagement and refers to users who read or watch political content without leaving any visible traces on social media. Passive reception is an important precondition for processes of public opinion formation and future civic or political activities.

Styles of political engagement	Degrees of political engagement			
	Making	Commenting	Diffusing	Listening
Factual: the witness	Create own political content creating awareness about a political issue or event	Comment or quote another user’s factual post	Like or share another user’s factual post	Read or be exposed to factual post
Partisan: the advocate	Express a partisan position, including mobilising attempts in the name of a shared ideology	Comment or quote another user’s partisan post	Like or share another user’s partisan post	Read or be exposed to partisan post
Moral: the judge	Make a normative statement about politics, calling for action justified on moral grounds	Comment or quote another user’s normative statement	Like or share another user’s normative statement	Read or be exposed to normative statement

Table 4: Degrees of Political Engagement

The above typology in Table 1 categorizes the ways in which individuals engage in politics on SMPs, and it can therefore be used as an instrument when assessing the participatory promise of social media. The typology illuminates how the empirically observable styles and traceable activities of citizens on social media reflect their self-assigned roles in the political process. The user-witness, writing in the factual style, may act as a citizen journalist and invest time and resources to create awareness for the public good. The user-advocate is necessary to encourage public deliberation, where citizens take sides on political issues and justify their positions in ways that are likely to reflect or challenge existing political cleavages. Citizen adoption of the moral style indicates forms of participation that transcend national social or political interests, potentially pointing to a community of citizens that does not correspond to pre-existing national configurations.

The typology is meant to encompass the online styles of meaningful engagement with politics, that is, content that signals the enactment of citizenship in a way that relates to what Dahlgren (2013; 2016) understands as ‘civic’. Forms of engagement are considered civic as long as rules of conduct are respected, some orientation towards the common good is upheld (for instance, increasing knowledge about a situation or raising awareness for a cause), and communication is not oppressed or disrupted through forceful acts (like hate speech or censorship). User-generated political content may also fall into a number of other stylistic genres: humor, irony, propaganda, strong negativism, or expressions of cynicism. While these genres certainly add to political discussions, we do not take them into account here since they do not directly contribute

to the deliberative democratic forms of public opinion formation that undergird the participatory promise. We also leave aside the ‘uncivil’ behavior of so-called trolls, who systematically try to disrupt debates by posting off-topic or inflammatory comments.

Instead, our interest lies in how civic forms of engagement with politics realize the democratization potential of SMPs. Part of the participatory promise is the empowerment of citizens to challenge existing political and media power structures, and therefore we consider that democracy and its pendant, political engagement, should not be restricted to mainstream hegemonic discourses. The making of factual content, for instance, could refer to citizens assuming the role of whistle-blowers and spreading alternative information aimed at subverting predominant political and media narratives, which may be tainted by personal or commercial gain. The partisan style, on the other hand, may amplify the voice of marginalized groups whose opinions are not heard due to a lack of political representation or media attention. Through the moral style, users can appeal to national elites to take action on issues that traditionally fall outside the realm of domestic concern and, potentially, influence how politicians and journalists choose to communicate with citizens in the future. At the same time, we acknowledge that democratization through such styles of online engagement do not always imply that pluralist, tolerant views are expressed online. For instance, SMPs have provided online meeting grounds for extremist organizations in Europe like the anti-Islamist PEGIDA, which originated in Germany but now has branches in many other EU Member States.

So far, we have focused on how citizens can engage with politics on social media in terms of what types of content they can produce, as well as what types of activities they can enact. While this participatory promise is concerned with how citizens acquire information about and subsequently engage with politics, the transnational promise focuses on the reach and effects of this engagement. In Europe, social media has been used to mobilize domestic anti-austerity protests in Greece and Spain, both through the creation of Facebook groups and the spreading of information via specific hashtags on Twitter. However, similar concerns are shared not just on a national but also a European level (e.g., anti-austerity protests, solidarity with refugees, or resistance to Europeanisation). An examination of how online political engagement goes beyond the national is therefore timely and important; social media have become an integral part of political communication not just within, but also across, European democracies.

Transnationalization and Europeanisation are related concepts since both imply flows of information and communication that go beyond national affiliations (Sifft et al., 2007; Trenz, 2015). If transnationalization is global in scope, Europeanisation has a more restricted, regional focus in terms of the topics discussed and the publics involved. Social media may be facilitating both processes by allowing citizens to easily engage with content beyond the national. In order to accurately access the transnational promise of social media (and therefore its Europeanisation potential), a closer inspection into the digital architectures of individual SMPs is required. A major claim of this chapter is that the technological designs of social media platforms influence the styles and degrees of citizen engagement to an extent that is often overlooked by the existing scholarship. In order to accurately assess the impact of social media on European politics, we first need to understand how the particular design aspects of an SMP support - or obstruct – its potential to engender political participation and transnationalization. In the next section, we consider how the digital architectures of two predominant SMPs, Facebook and Twitter, affect the styles and degrees of political engagement enacted by citizens.

Digital Architectures: The Technological Differences between Facebook and Twitter

The technological design of an SMP significantly impacts the information and communication flows that take place within it. SMP providers ultimately set the parameters of content creation and distribution, as they generally encourage users to engage with the site to maintain a steady flow of traffic and interaction with the content on the platform.

We chose to focus on Twitter and Facebook here, specifically, because they are the most widely used SMPs with global coverage (at the time of writing) and thus have the highest likelihood to connect users beyond national borders. Moreover, Facebook and Twitter are the most political social media, with other SMPs like Instagram or YouTube having a more apparent entertainment profile. Like other SMPs, Facebook and Twitter are both faced with the challenge to develop online navigation, communication, and interaction tools that are universally applicable; that is, functional to the demands and needs of very different groups of users across the globe. At the same time, Facebook and Twitter are competitors on the market and need to develop different profiles and products. Not surprisingly, they therefore display significant differences in their digital architectures: the technical back-end operations that facilitate, constrain, and shape user behavior on the platform.

Focusing specifically on citizens' use of SMPs for political engagement, we identify four major differences in the digital architectures of Facebook and Twitter: 1) the nature of the connections between users; 2) the reach of posts; 3) the level of algorithm filtering; and 4) user demography. The table below summarizes how the two SMPs vary along these four elements.

	Facebook	Twitter
Network topography	Reciprocal	Unidirectional
Algorithmic filtering	Heavy (EdgeRank)	Light
Reach of posts	Restricted (friends of friends)	Broad (indexing through hashtags)
User demography	More representative	News interested, politically motivated

Table 5: Digital Architectures of Facebook and Twitter Compared

The first difference regards the network topography supported by the two sites. On Facebook, connections are established between two users only after both parties agree to initiate a relationship as Friends; therefore, a user's Facebook network is comprised of reciprocal ties. Typically, Facebook's dyadic Friend structure leads to an online network that, to a more or less degree, mirrors one's personal relationship's offline (Ellison et al., 2007). On Twitter, however, connections between accounts do not need to be reciprocated: one can 'Follow' an account without that account necessarily following the other in turn. Twitter's network topography can thus be either unilateral or reciprocal, the latter occurring when two users mutually follow one another. As a consequence the "Follow" design structure, Twitter networks are composed of users who, more often than not, have no real-life connection (Huberman et al. 2009).

Secondly, the algorithms governing the selection and sequence of information displayed on Facebook and Twitter's feeds, i.e. their primary broadcasting features, are programmed differently. Twitter's algorithms mostly follow a chronological order: messages are shown on a user's feed in the order they have been generated or commented on. Facebook has a much more advanced feature, guided by (what was originally called) the EdgeRank algorithm, where posts are filtered and listed on the News Feed based on a set of complex measures aimed at predicting the relevance to an individual user (Berg, 2014). Facebook users are exposed to

content that is automatically tailored to their interests (DeVito, 2017), enticing them to engage with posts.

A third difference is that the reach of a post, the distance a post ‘travels’, is generally much shorter on Facebook than on Twitter. Facebook’s restrictive Friend network and high level of default privacy settings lead to content being distributed primarily in local circles of Friends or one iteration further, to Friends of Friends. A notable exception is the Facebook ‘Pages’ feature – public accounts belonging to organizations, politicians, public figures, or NGOs. Pages resemble the dynamics of Twitter by supporting a unidirectional follower structure and disseminating content to a large audience of followers. Any Facebook user can subscribe to a Page, whose public posts typically generate more intense commenting and wider diffusion than those of a personal Facebook account. Tweets from personal accounts on Twitter, by contrast, are public by default. Moreover, tweets can be pushed outside one’s follower network and into larger, thematic conversations through the use of Twitter’s hashtag feature. Due to privacy settings, the unidirectional follower structure, and the hashtag feature, Twitter messages in general have the potential to reach a wider audience than Facebook posts.

Lastly, the user demography of the two social media is different. Facebook has a massive audience worldwide: as of March 2016, Facebook had 1.65 billion monthly active users compared to Twitter’s 310 million (Facebook Newsroom, 2016; Twitter, 2016). Because of its size, the Facebook public tends to reflect offline demographics more accurately. Thus, we would argue that Facebook’s demography is more diverse and representative of the general public while, in contrast, the average Twitter user is more interested in politics than the Facebook user (Perrin, 2015). Twitter is dominated by English-speaking countries, with the United States representing about 65 percent of the Twittersphere, followed in the second place by Great Britain with 7 percent. The closest EU country, Germany, makes up only 1.5 percent of Twitter users (Sysomos, 2014). Regarding European politics, this seems to suggest that Twitter suffers from an Anglo-Saxon bias, where issues and opinions from the UK are likely to be overrepresented in the Twittersphere vis-a-vis those from other EU countries.

These four differences have direct consequences for which styles of content and degrees of engagement citizens enact when using the two SMPs, as illustrated in Table 3 below.

	Facebook	Twitter
Content style	Moral	Factual (‘Breaking’) and partisan
Degree of engagement	Commenting	Listening

Table 6: Projected Impact of Facebook and Twitter’s Architecture on Style

Both Facebook and Twitter encourage users to make user-generated content, but they do so in different ways. Facebook asks users the subjective question ‘What’s on your mind?’ when a user logs onto the site, whereas Twitter asks the more objective: ‘What’s happening?’ The two slightly different questions point to the niches that each platform tries to maintain in an increasingly competitive social media marketplace. While Twitter reigns as a platform for sharing breaking news (Osborne and Dredze, 2014), “Facebook functionality predisposes it to be more a discussion and opinion forum than an objective news reporting vehicle” (Pentina and Tarafdar, 2014, p. 220).

The strong social ties supported by the Facebook Friend structure discourage users to post their political opinions *sui generis*; however, already existing content, presumably filtered by EdgeRank, is designed to be relevant, enticing and ‘socially-safe’ for the user. We can therefore

expect that Facebook users' engagement with content on the site will be primarily in the form of commenting on pre-existing posts. Twitter users, we suggest, are less likely to comment on political content than Facebook users, because their networks are held together by weak social ties and the content presented to them via Twitter's algorithms is largely based on chronology – not probabilistic relevance. Instead, Twitter satisfies its users' "need for cognition" (Hughes et al., 2012, p. 567), suggesting that they can be considered primarily listeners seeking out the latest information. While Twitter is seemingly less participatory than Facebook, the hashtag feature and Twitter's loose network topography (and the associated lower social risk) lend to Twitter being more conducive to transnationalization.

Relating to the typology presented above, we expect that factual content will be the predominant style that is produced and diffused on Twitter, as Twitter users tend to be motivated by the reciprocity of information exchange (Syn and Oh, 2015). Since Twitter is more impersonal in terms of network topology and its demography is on average more politically interested, the content generated there will also be partisan, and the engagement among users will reach across the ideological cleavages that reflect the dominant national configurations (Barberá et al., 2015). The social risk of publicly engaging an adversary on Twitter is lower than on Facebook, where one's posts could appear later on a Friend's feed via EdgeRank.

Due to the strong social ties that characterize Facebook's network topography, users may feel less inclined to enact the partisan style to avoid social stigmatization or exclusion by their peers (Ellison et al., 2007). Facebook posts will tend to motivate users more to engage in moral questions of justice as opposed to publish witness accounts or to become polemical over political decisions or events. Moral questions are often more universal in scope and less divisive than partisan political issues, and therefore moral content appeals well to a less politically motivated demographic such as the one on Facebook.

EU Politics on Facebook and Twitter: Factual, Partisan and Moral Content Illustrated

Taking into account the degrees of citizen engagement as well as their transnationalization potential on Facebook and Twitter, we now illustrate how the factual, ideological, and moral styles have been exhibited in concrete European cases. Factual content related to European politics is difficult to attribute to citizens on social media since they rarely have access to new information before journalists or institutional representatives make it public. Citizens can, however, use both Facebook and Twitter to create and share alternative facts about politics, although groups with high resources offline bear the most influence on the political discussion online. For example, leading up to the 2014 elections the European Parliament (EP) invested heavily in a nine-month information campaign on Twitter to educate citizens about the powers and current issues facing the EU's democratic organ. The EP has enacted similar outreach programs on Facebook, albeit to a lesser extent, where citizens can engage directly with MEPs to acquire factual information about the Parliament's functions (Tarta, 2017). On Twitter, media outlets and individual journalists contribute news and analysis about European politics regularly. Factual content is primarily generated by traditional media elites and by established institutions, while it is diffused, commented on, and listened to primarily by user-citizens.

Partisan content typically manifests in the context of electoral campaigning. Social media have become important campaigning tools for European political parties and their candidates (Jackson and Lilleker 2011). At the same time, citizens across the EU can contribute new content encouraging others to support their preferred parties, diffuse intermediary election results or comment on the outcome of the elections, either deploring or applauding the results. Sometimes national consultations on European issues, such as the UK membership in the

European Union, can give rise to pan-European debates. Discussions on the so-called ‘Brexit’ referendum have included the voices not just of British citizens but also of concerned Europeans from other Member States. Moreover, partisan debates on Twitter can signify polarization along new ideological cleavages that are reflected in ‘hashtag wars’. For example, the hashtags #voteleave and #strongerin reflected opposing sides of the Brexit debate and lead to heated discussions that bolster the participatory promise of social media by encouraging deliberative debates about politics online.

Facebook is less prone to become a platform for partisan ideological showcasing or contestation, due to the nature of the Friend network. Here, we are referring primarily to users’ activity within their private networks, rather than their reactions to the content posted by public pages. Because Facebook relationships are more personal and reflective of offline social ties, users are less likely to provoke, and more likely to agree, with others in their network as a means of mitigating social risk. Politicians, parties, and NGOs, all have established public pages and in some cases, thematic pages connected to specific positions on political and politicized topics. User engagement with partisan content takes place on these specialized community pages, where content is generated, interpreted through comments, and diffused through liking and sharing. Such ideologically motivated pages are, for example, those connected to the anti-austerity movement across Europe: SpanishRevolution or TaketheSquare in Spain (Micó & Casero-Ripollés, 2014) and the Aganaktismenoi in Greece (Lu et al., 2012; Michailidou, 2017). Even though these are national pages, connections and criss-crossing references bind them together in a pan-European wave of protests (Della Porta & Mattoni, 2014).

Non-electoral partisan campaigns with a European scope have also taken place on both SMPs. A good example is the effort to stop the Anti-Counterfeiting Trade Agreement (ACTA) from being approved by the European Parliament in 2012. Activists mobilized on social media, as well as on blogs and websites, to act in a coordinated fashion across Europe to block the agreement. The ‘Stop ACTA’ campaign stands for a successful partisan citizen mobilization campaign (Mercea, 2017), as ultimately the EP rejected the text of the agreement.

Moral content is likely to be present on both Facebook and Twitter, but we argue that it will manifest in different ways contingent upon the platforms’ architectures. As Twitter is an effective medium for fast reactions to world events, it has been used to show solidarity with various moral causes in the immediate aftermath of natural or man-driven catastrophes as well as to launch and drive moral campaigns with specific political goals. In the category of moral reactions, Twitter citizen-users have been sharing support via hashtags. One example of pan-European moral reactions is #JeSuisCharlie, expressing solidarity with the victims of the January 2015 terrorist attack against the French cartoon weekly Charlie Hebdo. Even though the event took place in Paris, the reactions came from across the globe (demonstrating that drawing borders on social media is not possible). The same event gave rise to an expression of solidarity on Facebook, where users spontaneously changed their profile picture to a black square including the words ‘Je Suis Charlie’.

Another moral campaign, Refugees Welcome, took place on both Twitter and Facebook in response to the increase in migration flows to Europe from the Syrian war; however, the campaigns took different forms that correspond to the digital architectures of the two SMPs. On Twitter, the hashtag #RefugeesWelcome was used across the globe to express moral support with victims from the conflict as well as to call local, national, and supranational governmental institutions to take action. The #RefugeesWelcome example highlights the importance of language for the transnationalization process. English was used as a global

indexing label together with hashtags in national languages to target local audiences. This differs from #JeSuisCharlie, where the French hashtag was maintained, most likely because #JeSuisCharlie refers to a national incident, whereas the refugee crisis is a transnational issue of public concern.

On Facebook, the Refugees Welcome campaign took a much more localized scope through the grassroots creation of local public pages without a main organizing hub. For example, the student union at University College London created their own Refugees Welcome page, another Refugees Welcome page was created in Iceland to exert pressure on the government, and yet another page helped place refugees in homes across Germany. The abundance of localized Facebook pages, in contrast to Twitter's transnational hashtag #RefugeesWelcome, can be attributed to the difference between Facebook's enclosed networks versus Twitter's ability to transcend follower networks via hashtags. Facebook campaigning seems to be more fragmented than Twitter, with national borders and language maintaining a significant influence. On Facebook, there can be coordination and information exchange about an issue, but the structure of campaigns is anchored in local, regional or national environs, supporting our argument that Facebook is highly participatory but not very transnational.

One possibility in need of further exploration is whether forms of social media engagement beyond the national have a systemic bias towards forms of moral campaigning. In engaging with international or foreign news, users have only limited possibilities to produce self-reported factual information (they are rarely eye-witnesses) or to position themselves along partisan lines. Traditional partisan cleavages like 'left' and 'right' and national party affiliations do not often apply in moral campaigns, and the exchange of ideological arguments often requires more sophisticated and durable interactions than those supported by social media technologies. This might explain the popularity and success of moral campaigns, which many online users are inclined to join. Moral engagement can be shown by defending the 'we group' against others or by expressing strong emotions of support or pity with victims, solidarity with like-minded, or indignation against the perpetrators. In witnessing distant sufferings (be it earthquakes, famine or wars in other parts of the world), users engage, for instance, in a 'politics of pity' on how 'we the lucky' publicly show our benevolence against the 'unlucky' in remote places (Boltanski, 1999). Such forms of 'global moral spectatorship' are typically non-offensive and socially low-risk to social media users. Thus, moral campaigning occurring simultaneously on both Facebook and Twitter have good chances to transcend personal networks and, by becoming viral, are easily listened to and diffused across national borders.

In all these examples there is strong evidence for routinization. Europeanisation of political engagement on SMPs is not exceptional but takes place regularly. The patterns we find are this process can be: event-driven (such as the European refugee crisis), opportunity-driven (such as the European Parliamentary elections) and supported by institutional environments (such as the institutional framework of EU cooperation). Apart from this clear focus on Europe and the EU, SMP users' forms of political engagement also regularly reach out beyond the geographical scope of Europe and embrace transnational and global concerns (such as migration).

The cross-border capacity of SMPs has the added complication that online, one cannot ascertain who participates in public debates with complete confidence. Thus, it is difficult to isolate transnational (global) from European (regional) discussions. Even though the topics of a given conversation may be European in nature (for example, economic austerity or the future of Schengen), the participants joining that conversation can hail from anywhere with internet access. As long as they have an opinion, Turks, Russians, Americans, or Malaysians are able to

make, comment, diffuse or listen in on European political discussions. Europeans can, in turn, participate in the debates about American or Brazilian politics. This implies that we cannot isolate Europeanized from transnational social media engagement. However, for analytical purposes, we took Europeanized political content to refer to issues and events that pertain to EU politics as well as those that are being examined in several European national public spheres.

Conclusion

In this chapter, we explored the potential of social media to engage citizens politically beyond the national. We developed a categorization of social media usage that distinguishes between three styles of engaging with political content: the witness who provides information and contributes to disclosing facts; the advocate who expresses partisan opinions based on particular interests, ideologies, or identities; and the judge who seeks for moral justification on common grounds. Users can engage with each of these content styles in more or less active ways: from making (writing one's own posts) to commenting (responding to pre-existing content), diffusing (liking and sharing posts and messages) and listening (passive reading). This typology of user engagement is generalizable enough to be applicable to various social media platforms in different cultural, national, and institutional environments. Moreover, our typology is sufficiently broad to encompass the various site-specific, technological features offered by different social media providers and is therefore conducive to cross- platform comparative studies of online political engagement.

As a corollary to the facilitation of online participation in the context of European politics, we also investigated the transnational promise of social media. We used European examples to illustrate how transnational flows of political communication depend to a large degree on the availability of institutional opportunities and incentives (e.g. the European Parliament in the context of EP elections); however, such cross-border communication can also spontaneously intensify around viral content merging into popular campaigns in support of a transnational cause, such as support for helping refugees. Our categorization allows us to establish how some types of content are more conducive to transnationalization than others. In general, factual information in the form of political news spreads easily across the globe but does not engage users in meaningful interactions across spaces. In turn, content presented in a partisan or moral style increases user engagement through commenting and diffusion. Partisan debates, however, are often context-bound and linked to the polarization of actors within a particular arena of politics. Normative debates about shared concerns (e.g. global justice), on the other hand, typically overcome traditional partisan distinctions and can more easily bridge otherwise disparate national contexts. Moral campaigns, in particular, have a potential to spread transnationally because they are easily communicable, help to overcome frictions through solidarity, and allow users' identification with a cause beyond the national.

A key tenant of our argument has been that both participation and transnationalization are intimately intertwined with the digital architecture of an SMP. Our categorization allows us to explore possible links between the degree of participation or transnationalization of users' engagement and the specific social media platform used for interaction and networking. Twitter is the forum for 'breaking news' and instant access to world events with many contributions from the user-witness. Facebook began challenging Twitter's dominance by profiling itself as a news platform, but Facebook is heavily reliant upon the more traditional reporting of national news providers. Twitter, by contrast, comprises an active space for individual journalists to express their journalistic takes outside of long-form content.

We argue that for citizens, the primary form of engagement on Twitter is diffusing, with commenting typically low since Twitter's algorithms do not award the user any direct benefits for interacting with content. Facebook, by contrast, reigns as a discussion forum, with commenting as its main activity (particularly on the public Pages of mainstream political, media, and institutional actors). Facebook users are rewarded for actively posting and engaging on the site by Facebook's algorithms, which push relevant content on users' feeds and entice them to interact further. Although the precise workings of algorithms are undisclosed by SMP providers, scholarly work should strive to conceptualize how these protocols – and their future versions – are influencing the ways citizens engage online with political content.

Future research can, moreover, apply our typology to concrete cases of citizen participation online on issues of relevance to European politics. For example, one could examine how individuals promoted the Refugees Welcome campaigns across Facebook and Twitter or mobilized anti-Islamic or anti-immigrant communities in connection with the spread of PEGIDA. When undertaking such endeavors, we encourage scholars to incorporate multi-platform comparisons of the same empirical case in order to expound the idiosyncrasies of each SMP and their implications for online political engagement. Lastly, as political and media elites seemingly harmonize their online communicative strategies through the borrowing of best practices, we suggest an analytical focus on the actions of individual citizens on social media as a fruitful avenue for enhancing our knowledge of online political engagement.

VI.

A Typology of Political Participation Online: How Citizens Used Twitter to Mobilize during the 2015 British General Elections

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Abstract

This study investigates how, and to what extent, citizens use Twitter as a platform for political mobilization in an electoral context. Conceptualizing political participation as a process, we develop a typology of political participation designed to isolate mobilizing calls for action from the rest of the political discussion online. Based on Twitter data collected one week prior to the 2015 British general election, we then identify the top 100 most retweeted accounts using the hashtag #GE2015, classify them by actor type, and perform a content analysis of their Twitter posts according to our typology.

Our results show that citizens – not political parties – are the primary initiators and sharers of political calls for action leading up to the election. However, this finding is largely due to an uneven distribution of citizen-driven mobilizing activity. A small number of highly active users, typically supporters of nationalist parties, are by far the most active users in our dataset. We also identify four primary strategies used by citizens to enact mobilization through Twitter: in-text calls for action, hashtag commands, sharing mobilizing content, and frequent postings. Citizens predominantly expressed political calls for action through Twitter’s hashtag feature, a finding that supports the notion that traditional conceptions of political participation require nuance to accommodate the new ways citizens are participating in the politics of the digital age.

Introduction

Political participation is fundamentally about citizens and their attempts to influence politics. Despite a growing body of evidence suggesting that social media stimulates political participation, few studies have focused on how citizens are using social media platforms (SMPs) to influence electoral outcomes. Instead, the extant scholarship primarily focuses on how politicians and parties use SMPs to campaign (e.g., Gibson & McAllister, 2015; Jacobs & Spierings, 2016; Lilleker & Jackson, 2011; Vergeer, Hermans, & Sams, 2013). Knowledge about how citizens use social media, meanwhile, is largely constrained to the literature on social movements (Bennett & Segerberg, 2013; Christensen, 2011). Whereas the former strand of research suggests that political actors use social media to mobilize voters, the latter strand demonstrates that citizens successfully use SMPs to mobilize protests. Inspired by the shared focus on mobilization across both literatures, the present study investigates how citizens utilize social media as a platform for political mobilization and asks:

How, and to what extent, do citizens use Twitter to mobilize in the context of national elections?

To answer our research question, we develop a typology of political participation designed to isolate mobilizing calls for action from the rest of the political discussion online. We focus on mobilization and social media, specifically, for four reasons. First, social media facilitate mobilization by allowing citizens to broadcast calls for action to an online audience larger than their personal networks. Second, mobilizing calls are often a precondition for political action. Third, the purpose of mobilization in an electoral context is to increase voter turnout, which is currently declining across many liberal democracies. Lastly, the few studies that do examine online “citizen-initiated mobilization attempts” (Hosch-Dayican, Amrit, Aarts, & Dassen, 2016, p. 138) during elections find that citizens are actively using online platforms to campaign, either as standalone actors or in a co-produced model of campaigning linked to political parties (Gibson, 2015).

Applying our typology to Twitter data from the 2015 British general elections, we find that citizens – *not* political parties – are the primary initiators and sharers of political calls for action on Twitter. However, we also observe uneven levels of citizen mobilization. A small number of highly active citizens, typically supporters of nationalist parties, account for the large majority of political calls for action. Honing in on the online activity of these most active mobilizers, we identify four principal strategies that citizens use to enact mobilization and increase the saliency of their message on Twitter: in-text calls for action, hashtag commands, sharing mobilizing calls, and frequent postings. Overall, our results suggest that citizens are strategically using Twitter during elections as a platform for political mobilization. Through innovative, online-specific modes of political participation, motivated citizens can disseminate mobilizing calls for action widely and become influential actors in political discussions alongside the political and media elites.

Political Participation, Citizen Mobilization, and Twitter

Political participation has traditionally been couched as the “acts” (Verba & Nie, 1972, p. 2) or “action[s]” (Brady, 1999, p. 737) taken by citizens to influence politics. This classic understanding’s focus on activity would seemingly preclude online communication from counting as participation, since the concrete ‘activities’ one can perform through a computer

or smartphone are limited to input commands like keystrokes, mouse clicks, and finger taps. However, an increasing body of research finds a positive link between citizens' use of digital communication technologies and their future political activities. Gil de Zúñiga, Jung, and Valenzuela (2012), for example, provide strong evidence that using SMPs for information-seeking has a "significant and positive impact" (p. 328) on citizens' involvement in politics. Others show that accessing online news can stimulate political interest and serve as a gateway to offline political participation (Boulianne, 2011; Cantijoch, Cutts, & Gibson, 2015). Further, citizen mobilization through social networks has been demonstrated to increase voter turnout (Bond et al., 2012; Cogburn & Espinoza-Vasquez, 2011), and even citizens' discussions on non-political online spaces, like lifestyle forums, can lead to political mobilization (Graham, Jackson, & Wright, 2016). Taken together, these studies support the notion that citizens' use of social media is an important component of political participation in the digital age.

How citizens use social media for information and communication, however, is not uniform. Rather, citizens enact a variety of forms and degrees of political engagement through SMPs (Bossetta, Dutceac Segesten, & Trenz, 2017). To account for these nuances, we draw upon Ekman and Amnå's (2012) distinction between latent and manifest political participation. Latent participation primes citizens' "readiness and willingness to take political action" (Ekman & Amnå, 2012, p. 296). Examples of latent participation include reading political news, informally discussing politics among friends, and other activities that contribute to political awareness and potentially lead to individual or collective political action. Latent participation is an important influencer and precondition for manifest participation, which refers to the citizens' concrete activities aimed at affecting "politics and political outcomes in society, or the decisions that affect public affairs" (Ekman & Amnå, 2012, p. 289). Although Ekman and Amnå do not take into consideration the possibilities opened by social media for political participation, their latent category is relevant here because it acknowledges that information-seeking and communication relating to politics can influence political activity and subsequently, political outcomes.

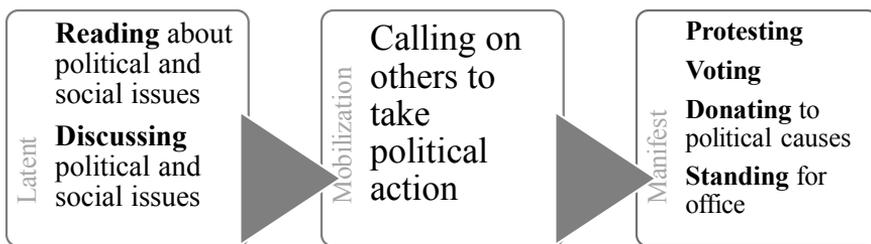


Figure 1: Three Phases of Political Participation

To account for the link between latent and manifest forms of participation, we conceptualize political participation as a process whereby citizens' latent activities become manifest, concrete political actions aimed at influencing political outcomes. The process has three phases, as depicted in Figure 1. Facilitating the transition from latent participation (first phase) to manifest forms (third phase) is an intermediary phase, mobilization. Although we acknowledge mobilization can take various forms, we conceive mobilization here as any citizen-driven attempt to incite political action. Each of the three phases can be enacted online and/or offline. For example, one can read the latest news from print newspapers or from Twitter (latent), initiate mobilizing calls through social media or by canvassing (mobilization), or donate money

through online bank transfers or in cash (manifest). Additionally, the participation process is not necessarily linear. Citizens enacting mobilization can relapse into latent participation, and mobilizing calls can spring up during manifest political action, like protests.

In this study, we focus only on latent participation and mobilization since Twitter does not support manifest participation forms (for example, Twitter does not offer money transfer services enabling direct donations to political organizations). For reasons outlined above, we consider mobilization an important aspect of political participation and operationalize mobilization as political calls for action: instructions to “do something” (Saxton & Lovejoy, 2012, p. 343) expressed linguistically as an imperative verb (e.g., “Vote,” “Join,” “Donate”).

The political aspect of a call for action is crucial to our conceptualization. We consider political calls for action only those that explicitly command other users to engage in activities that exercise their rights and duties as citizens, for example: influencing electoral outcomes (“Vote for this party”), becoming involved in like-minded online networks (“Join this group”), or convening offline (“Meet in this place”). In this sense, we give a broader meaning to online mobilization than Earl and Kimport (2011), who restrict it to “situations in which the web is used to facilitate the sharing of information in the service of an offline protest action” (p. 13).

In order for mobilizing calls to gain momentum and become manifest participation, they must be widely disseminated. Twitter is a social media platform particularly suited for the rapid and widespread diffusion of calls for action on account of its “digital architecture” (Bossetta *et al.*, 2017), the technological structures that facilitate, constrain, and shape user behavior on the platform. Twitter’s digital architecture is conducive to widespread content dissemination largely due to the hashtag feature. Hashtags index a message within a specific conversation on Twitter, and they often convey a concise opinion relating to that conversation. Hashtags therefore constitute a “*participatory*” system of “decentralized, user-generated tagging” (Saxton, Niyirora, Guo, & Waters, 2015, p. 156, our emphasis). Another feature of Twitter’s digital architecture, the retweet function, enhances the quick diffusion of information and facilitates the formation and maintenance of online networks (Ahn & Park, 2015; Bruns & Burgess, 2015). Retweeting also plays a key role in substantiating a political message by ‘keeping it alive’ and salient amidst the rapid and continuous generation of new Twitter content. Retweeting is therefore an important precondition for mobilizing calls to “spill-over” (Cantijoch *et al.*, 2015, p. 1) into manifest political activity.

Typology of Online Political Participation

Contributing to the research on citizen-driven mobilization through social media, we introduce a typology of citizens’ political participation online. The typology is designed to isolate mobilizing content (having a call for action) from latent participation, since mobilizing calls carry the ambition and potential to incite manifest political activity (and therefore deserve special attention). The typology does not, however, capture whether mobilizing calls successfully translate to manifest activity or influence political outcomes, such as election results. Figure 2 illustrates the typology matrix and its four categories of online political participation.

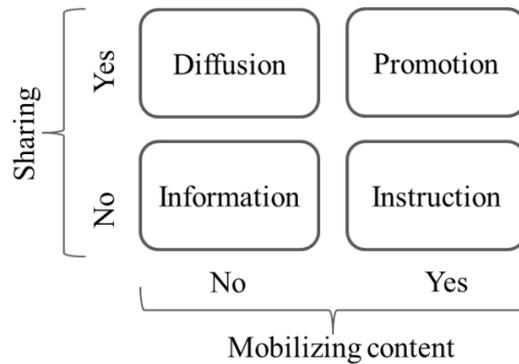


Figure 2: Typology of political participation

Beginning from the bottom-left quadrant and proceeding clockwise, the categories are:

- **Information:** Original content without a call for action
- **Diffusion:** Shared content without a call for action
- **Promotion:** Shared content containing a call for action
- **Instruction:** Original content containing a call for action

Horizontally, we make a distinction based on content and separate latent participation, the generating and spreading of information and commentary about politics (left side), from mobilization, the creation and spreading of calls for action (right side). Vertically, we make a distinction regarding the activities one can perform online. Users can either create new content (lower half) or share pre-existing content (upper half). We consider the creation and sharing of calls for action as two distinct, but interlinked activities. Creating a new mobilizing call can generate manifest participation and indicates a high level of political awareness and commitment. However, calls for action must also be shared in order to increase their reach and maximize their chances of translating into manifest political action.

When applied to Twitter, we consider posts containing a political call for action indicative of Instruction, since such tweets instruct users to act towards influencing a political outcome. Users who retweet content with a political call for action enact Promotion, since they help promote and substantiate a mobilizing call on the Twittersphere. If a tweet or retweet's content is political but does not include a call for action, we consider it Information and Diffusion respectively. Information tweets can either comprise the user's own text of political expression or introduce content from another source (e.g. a quote or link to a news story published on an external site). Diffusion refers to the act of retweeting informational content without a call for action. While Diffusion helps to raise awareness and encourage other forms of latent participation, both Information and Diffusion do not generate manifest participation directly since they lack the mobilizing calls necessary to incite concrete political activity.

This typology can be applied to all digital communication forums (e.g. websites, blogs, messaging applications). Its focus on sharing is particularly suited to social media, since connectivity and networking are the primary features of SMPs. While a number of other typologies of social media behavior have been developed, ours is not particular to a specific category of social actor, such as the political class (Golbeck, Grimes, & Rogers, 2010; Graham

et al., 2013; Jackson & Lilleker, 2011) or non-profit organizations (Lovejoy & Saxton, 2012; Saxton *et al.*, 2015).

Studies offering a typology of citizens' online activity tend to focus solely on extra-parliamentary politics (Penney & Dadas, 2013; Van Laer & Van Aelst, 2010). Those typologies that do incorporate multiple actor types (Ausserhofer & Maireder, 2013; Larsson, 2014) analyze online content but not whether the content is user-generated or shared. In contrast with these one-dimensional categorizations, our typology provides a rubric to isolate the mobilizing messages and to identify the most disseminated calls for action. Mobilizing calls can then be further analyzed to explore how they are formulated and which ones reach the broadest audience. In the following sections, we apply our typology to the Twitter activity surrounding the 2015 national election in the United Kingdom (UK).

The 2015 UK General Election

Britain is an appropriate case study for online political participation through SMPs. The UK has high Internet penetration, with 87.9% of adults in the UK having accessed the Internet during the first three months of 2016 (Office of National Statistics, 2016). In particular, Twitter is a well-established social media platform in the UK. The British Twittersphere was estimated at 14.8 million accounts in 2015 (e-marketer, 2014), making the UK the second largest country of Twitter users behind the United States (Sysomos, 2014). Moreover, British politicians use Twitter to inform about political issues (Graham *et al.*, 2013; Jackson & Lilleker, 2011), and British citizens have utilized online technologies during elections since at least 2001 (Bimber, Cunill, Copeland & Gibson, 2015). The 2015 national elections were no exception, and they yielded unexpected results.

Although the center-left Labour Party and the center-right Conservative Party had been polling evenly until the election booths opened, the widely anticipated possibility of a hung parliament was displaced by an unexpected, Conservative-led majority. In Scotland, a landslide victory for the Scottish National Party (SNP) stripped forty parliamentary seats away from Labour, who had previously held the majority of seats in Scotland. The UK Independence Party (UKIP), campaigning on a Eurosceptic platform and trying to capitalize on its historic victory in European Parliament elections the previous year, received 13.9% of the popular vote, their highest percentage in a national election thus far. The surprising twists in the outcome of the election may suggest an undercurrent of political activity that traditional opinion polling did not accurately capture.

The political agenda that dominated the elections included issues concerning the state of the economy and the future of austerity, Britain's membership in the European Union, and the power structure of the United Kingdom with Scotland vying for more autonomy (Finlayson, 2015). For parties on the right, like UKIP and the Conservatives, immigration was salient in the debate, even though it went under-reported by the media (Nikolaidis, 2015). The state of the National Health System (NHS) was, particularly for the left, a topic circumscribed to the general discussions about the British economic situation in light of the financial crisis.

I. Data collection

To operationalize our research question and investigate how citizens used Twitter to mobilize during the 2015 British national election, we collected original content (tweets, replies) as well as shared content (retweets) published on Twitter during the seven days preceding the election

(April 30th - May 6th). In addition, we treated quote retweets as original content, since Twitter does not count these as retweets but rather as new tweets. The selection criterion was the main election hashtag, #GE2015, a method successfully employed by other studies of Twitter during elections (see Jungherr, 2015). Therefore, our dataset is comprised of those tweets directed at the general election discussion.

We obtained our data during the election by calling Twitter's Streaming API using the StreamR package for the programming software R. In total, we collected 555,536 tweets containing #GE2015. It is important to note, however, that the Streaming API does not deliver a full list of tweets. The only way to obtain 100% of tweets is to pay for access to the Twitter Firehose, which is not only expensive but also requires substantial technical resources. The Streaming API, on the contrary, is free but grants only low latency access to Twitter data, meaning that an unspecified number of tweets are "dropped" from the dataset. Although we cannot be sure exactly what percentage of the overall tweets we collected, we believe it is close to the results of a study that compared the two methods side-by-side and found that the Streaming API, on average, delivered 43.5% of the Firehose data (Morstatter, Pfeffer, Liu, & Carley, 2013).

The Streaming API has another key drawback compared to the Firehose: a search with the former will return a filtered sample of tweets if the search criteria generates results exceeding 1% of all global Twitter activity at a given time. Twitter activity has been demonstrated to spike significantly during elections (Jungherr, 2015, pp. 182-185), and given that the UK is the second most active country on Twitter, our search term #GE2015 could potentially make up more than 1% of global Twitter activity on election day. For this reason, we excluded the actual day of the election from our search query. While our dataset is therefore a sample of the overall tweets sent during the timeframe, to our knowledge the data has not been filtered by Twitter's algorithms.

We identified the top 100 most retweeted users within the seven-day period and selected only their tweets and retweets for analysis (n=10,725). Since users tend to retweet what they consider relevant, other studies have selected the most shared tweets within a given time frame to control for "those messages that users deemed most important" (Jungherr, 2014, p. 251). By the same logic, we consider the 100 most retweeted accounts to be an approximate measure of the most important users in the #GE2015 discussion since their content was shared the most. However, we acknowledge that a number of other factors can affect a Twitter user's influence, for example: their number of followers, friend count, timing of posts, and Twitter proficiency in general. In addition, the aforementioned limitations of the Streaming API may impact who appears on our top 100 most important list, since the retweets counted are only those that were captured and aggregated in our dataset during the week prior to the election.

II. Method

First, we categorized users according to their actor type, which we identified through the user's profile description. When in doubt, we searched for additional information to corroborate whether one's profile picture, Twitter activity, and followers corresponded to their profile description. Our purpose was to distinguish civic actors from other user types such as political, media, and civil society organizations (CSOs). We then further separated the civic actors into two sub-types: citizens and public personalities. Even though public figures are indeed citizens, we distinguished the two in order to trace separately the mobilization strategies of ordinary

citizens vis-à-vis their more socially influential counterparts. We identified public personalities based on indicators such as the occupation listed in their profile description, a high number of followers, and/or the existence of a Wikipedia page about them.

After categorizing the users by actor type, we performed a content analysis of Twitter posts based on a coding scheme corresponding to our typology. We chose the sentence as the unit of analysis, and we considered a hashtag to comprise a sentence if it contained both a noun and a verb (e.g., #VoteLabour). Via this method we could capture multiple expressions of calls for action housed within a single tweet, such as a call for action in the text and a hashtag command (e.g. “Vote Labour Today” and #VoteLabour). Consequently, a tweet could be double-coded, but only if it contained different ways to articulate a mobilizing command.

We coded original content (i.e. tweets, @mentions, and quote retweets) as Instruction if the tweet contained a call for action, albeit with a few notable exceptions. First, we excluded calls for action directed towards vague concepts or without prescribed actions, such as “fight the power” or “support democracy.” We would code, however, “save our NHS” because the call for action is directed toward keeping the National Health System in place through voting, a clear example of political activity. Second, we excluded calls for action aimed at promoting information, for example: “watch this video” or “click to find out more.” Such calls encourage others to seek out political information, but they do not mobilize individuals to influence politics. We did code calls for action related to information sharing, such as “get the word out” or “retweet this message,” as these instructions are aimed at getting users to promote a message with the intent of influencing politics.

If an original tweet did not include a mobilizing call, we coded the tweet as Information. Our Information category included not only news and facts (e.g. a media story) but also opinions and statements of self-expression, including humor. We coded shared content (i.e. retweets) according to the same criteria. A retweet was classified as Promotion if it contained a call for action, and as Diffusion if it did not. For both Instruction and Promotion, we created three sub-codes to capture nuances in expressing a call for action: hashtag command, negative command, and negative hashtag command. As argued above, we focus on hashtags since they are one of the most important features of Twitter’s digital architecture in terms of facilitating political participation. Since recent literature suggests that parties increasingly use negative campaigns to attract voters (Ceron & d’Adda, 2015), we included a negativity measure to see whether citizens engage in similar practices. Coding was performed manually by the authors, with an inter-coder agreement of 98%.

Content	Example	Original content (Tweet, Mention, Quoted Retweet)	Shared content (Retweet)
No call for action		Information	Diffusion
Call for action in text	Vote for Labour	Instruction	Promotion
Call for action in hashtag	#VoteLabour	Hashtag command	
Negative call for action	Don't vote Labour	Negative command	
Negative call for action in hashtag	#DontVoteLabour	Negative hashtag command	

Table 7: Coding Scheme

Results

The tweets sent by the top 100 most retweeted user yielded 11,299 coded segments from 10,725 tweets and retweets. Figure 3 reports the following general results, distributed along the four cells of the typology matrix as follows:

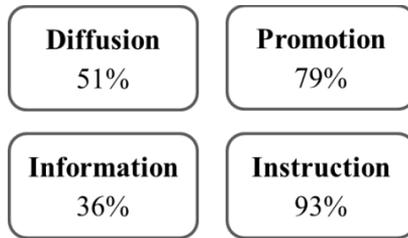


Figure 3: Results Matrix (for All Actors)

Even though a majority of the tweets were informative, Instruction is the second largest category (27% of all coded segments, excluding the double-coded instances), suggesting that Twitter has indeed been used as a platform for initiating political calls for action during the election campaign. However, these mobilizing calls were not shared often, as our Promotion category shows the lowest value in the matrix (only 4% of the coded units). On the whole, the users we analyzed generated more original content than shared content, an expected result on account of our selection criteria: the top 100 most retweeted users were bound to write original messages worthy of sharing.

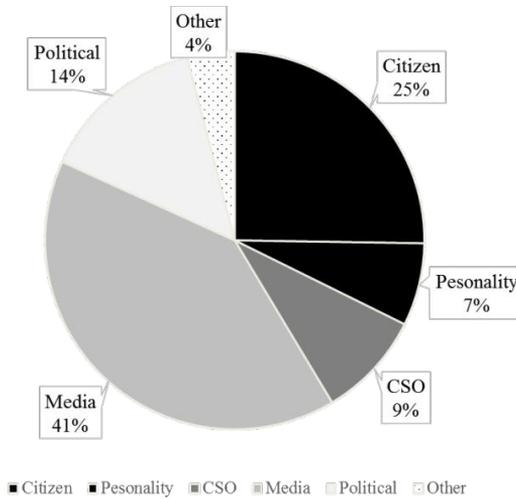


Figure 4: Distribution by Actor Type (Top 100 Retweeted Accounts)

To gauge the extent that citizens used to Twitter to mobilize, we charted the distribution of all tweets and retweets with the #GE2015 hashtag according to actor type. Civic actors accounted for 32% of the tweets and retweets with the hashtag #GE2015, with citizens issuing more than a quarter of all Twitter posts (25%) and public personalities responsible for 7%. The rest is divided between the media (41%), political (14%), CSOs (9%) and other (4%) categories. The distribution by actor type suggests that citizens were influential users in the #GE2015

conversation, despite their lack of resources vis-a-vis other kinds of actors, such as media outlets and political parties.

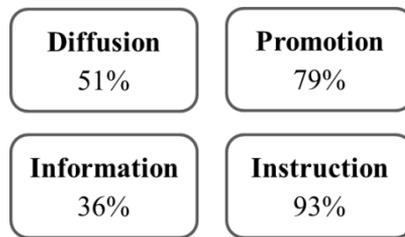


Figure 2: Civic Actors' Activity Matrix (as Percent of All Actors' Activity)

To find out *how much* mobilization can be attributed to civic actors alone, we singled them out across each of the four typology categories. Figure 5 clearly shows that citizens and public personalities were the most active generators and distributors of content across three of the four quadrants of our matrix. The civic category stands for 93% of all the original calls for action (Instruction) and for 79% of the retweeted mobilization posts (Promotion). Citizens and personalities were also the authors of most informational tweets (keeping in mind that for us, informational content included also personal opinion and commentary). For comparison, the media generated 34% of the information and 32% of the diffused content, signaling that media remains an important news provider on Twitter. Politicians and parties were the least productive. They created mostly informative tweets (13% of the total) and generated only 2% of the mobilizing content on Twitter.

We questioned whether the predominance of calls for action in the civic category was due to a small number of extremely active accounts or if the distribution of mobilizing calls was more even across the citizens. The data strongly supports the former scenario. The top five most active citizen users accounted for 82% of the calls for action in the Instruction category and 83% in Promotion, showing a very uneven level of activity within the civic group.

We also wanted to know *how* citizens use Twitter to mobilize during election campaigns. We find that the two primary ways to express mobilization were, according to our coding, through *hashtag commands* and *in-text calls for action*. Out of all coded segments containing a call for action by the civic category, 59% had a hashtag command exclusively, 26% had a call for action in the text exclusively, and 14% were double coded as housing both an in-text and hashtag command within the same tweet. Only 1% of our calls for actions were expressed as a negative command or negative hashtag command.

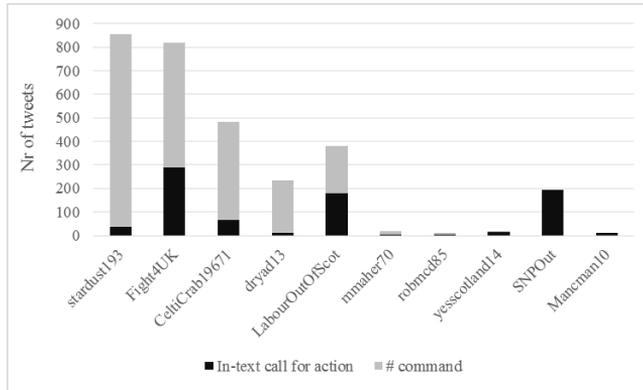


Figure 6: Most Active Civic Actors in the Instruction Category

Hashtag commands

Figure 6 further breaks down the most active civic users in the Instruction category by individual accounts², ordered according to the total number of hashtag commands issued by each user. Out of the 34 civic actors coded, only 16 used hashtag commands, and 6 users created less than ten hashtag commands over the entire period studied. The most active account, by contrast, issued 820 hashtag commands, highlighting again the uneven levels of mobilization attempts among Twitter users. The dominant hashtags for the two most active mobilizers pinpoint them as staunch supporters of the UK Independence Party (UKIP). #VoteUKIP was the most used hashtag by both @Stardust193 (773 times out of 820 hashtag commands) and @Fight4UK (492 times out of 528 with hashtag commands). The hashtag #VoteUKIPGetUKIP was present 717 times in the original Twitter messages of the two users combined. Political hashtag commands can therefore connect supporters of the same party and function as a signifier of political affinity, with @Stardust193 and @Fight4UK being each other’s most retweeted user.

Another interesting feature shared by these highly active UKIP supporters was their strategic combination of Twitter features to microtarget their message to local constituencies. @Fight4UK combined the hashtagged name of a precinct, an @mention of the local UKIP candidate standing in that precinct, and the command to vote for the party alongside other UKIP-specific hashtags, like here: “#Rochester Vote @MarkReckless #UKIP #GE2015 #GoPurple #VoteUKIP #BelieveInBritain.” By promoting individual UKIP candidates in connection with their respective constituencies, @Fight4UK was clearly trying to address and mobilize other citizens at the local level. @Stardust193 used a similar tactic with the exception of using @mentions.

Other common hashtag commands used by the most retweeted citizens were #VoteLabour, #VoteConservative, #VoteCameronOut, and #saveournhs. One particularly visible and polarized issue was Scottish separatism, with both pro- and anti-SNP accounts being very active. The third most used hashtag was #VoteSNP (supporting the Scottish National Party), used 416 times by @CeltiCrab19671, 201 times by @LabourOutOfScot, 155 times by @ChristainWright, and 121 times by @moridura. Opponents of the SNP were also quite prolific and used the hashtag #SNPOut (which we did not code as a command due to its lack of an imperative verb). For the sake of illustrating the anti-SNP side, the hashtag #SNPOut was

used 933 times in the tweets and retweets of the user of the same name (@SNPout), an account that also used the mobilizing call for action “keep #SNPout” 196 times. The presence of accounts with names such as @LabourOutofScot and @SNPout suggests that although there were very few instances of negative (hashtag) commands, citizens still engaged in denigrating parties and candidates on Twitter.

In-Text Calls for Action

Even though in-text calls for action were less numerous than the hashtag commands, there were still quite a few examples in our data. The most active users of hashtag commands also ranked highly as the most active initiators of in-text calls for action. This leads to the same issues being at the top of the agenda: support for UKIP and SNP, and opposition to SNP. The most common in-text calls for action by citizens and personalities were: “vote” (877 times), “keep” (306), and “join” (154). More specifically, the commands were connected to specific parties: “Vote #UKIP,” “Vote #SNP,” “Vote Plaid Cymru,” “Keep #SNPout,” and “Join #ThePeoplesArmy” (a slogan referring to the UKIP). There were also more general, unaffiliated commands, such as “make your vote count” but in much lower frequencies.

Sharing Mobilizing Tweets

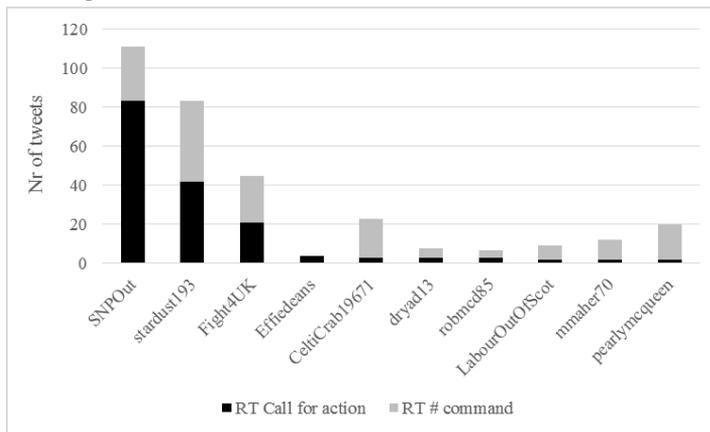


Figure 7: Most Active Civic Actors in the Promotion Category

A third strategy identified was the *sharing of mobilizing content*, captured by our Promotion category. Comparing Figure 7 with Figure 6, the same users appear in both charts, even though Figure 7 is ordered differently (according to the number of times an account retweeted in-text calls for action). We can therefore conclude that the same accounts were both active initiators and sharers of calls for action, with the effect of giving preponderance to the same political agenda: voting for or against SNP, or support for UKIP. Also noteworthy is the far lower number of retweets in comparison with new tweets, suggesting that the most retweeted users do not share messages as much as they create new ones. Twitter seemed to be used more for formulating one’s own mobilizing agenda rather than sharing others’ calls for action. Those mobilizing tweets that were shared, however, contained a greater proportion of in-text calls for action vis-à-vis hashtag commands, which were less prominent in the Promotion category than in Instruction.

Frequent Postings

A fourth strategy of mobilization has to do with the *frequency of posting calls for action*. We noted a marked distinction between users that sent only one or a few tweets (but still amassed enough retweets to break the top 100) and those who made the top 100 by sending a large volume of tweets, picking up retweets in piecemeal fashion. In the first category were mostly public personalities, whereas the second was generally comprised of ordinary citizens. Nevertheless, some citizens sent highly impactful tweets despite having significantly less followers than the typical public figure, demonstrating that citizens can exert similar levels of influence by creating tweets that go beyond their own immediate follower network. For example, comedian Eddie Izzard sent only one tweet with #GE2015 during the week before the election, expressing his personal opinion of why he is #NotVotingUkip. His post was retweeted 769 times, landing his account at number 63 on our top 100 list. @RobertsonSteff, a pro-SNP citizen account, sent only 10 tweets. However, one in particular, which included a picture of her daughter waving a Scottish flag, received 1,125 retweets. Even though @RobertsonSteff had only 418 followers (compared to @EddieIzzard's 3.7 million), she landed higher on our list at number 33.

Not enjoying the same level of influence as public personalities and having smaller numbers of followers, the average citizens in our dataset typically had to post many times in order to garner enough retweets equivalent to a celebrity's single tweet. Looking at the timestamps of tweeted content, we also found that our most active mobilizers posted every minute or less, suggesting that they may have automated the process by enlisting the support of a third-party bot client to "spam" the #GE2015 Twitterflow.

Discussion

Despite the fact that political parties and candidates have access to the financial resources and know-how that would allow them to run extensive online campaigns, our data shows that the civic category (i.e. citizens and public personalities) created and spread the most political calls for action leading up to the 2015 UK general election. Hosch-Dayican *et al.* (2016, p. 147) also find a significant proportion of citizen-driven mobilization attempts during the 2012 Dutch election; however, in their study the mobilizing attempts of citizens were outnumbered by those of political actors. In contrast, our dataset suggests the opposite, namely that British political parties and candidates seemed not to utilize Twitter heavily as a means for mobilization in the 2015 election. One explanation for this difference may be linked to our criteria for data selection. We only collected tweets including the predominant election hashtag, #GE2015. It may be the case that citizens are more likely to use general campaign hashtags, while political actors trend towards more specific hashtags targeting specific conversations, issues, or supporters. Nevertheless, our finding that civic accounts comprised one-third of the top 100 most retweeted users means that they figured prominently in the #GE2015 conversation alongside traditional political and media elites. This supports the tentative conclusion of Larsson and Moe (2014) that Twitter holds the "potential for an anonymous citizen to gain leverage and attention in a politically themed online setting" (p. 11).

Citizens were the most active mobilizers and promoters of calls for action among our top 100 most retweeted users, though not all of them tweeted equally as much or as often. The high amount of citizen calls for action is predominantly due to a small number of highly active users, whose messages generally supported nationalist parties (UKIP and SNP). Mobilizing calls backing mainstream parties (i.e. Conservatives, Labour, and LibDems) were pale in

comparison. Gibson (2015) argues that since British political parties are traditionally formal and hierarchical, they are less likely to encourage the informal supporter networks comprising the core of “citizen-initiated campaigns.” This may explain why calls for action to vote for the overall winner of the election, the Conservatives, were largely absent from our dataset. Although neither the SNP nor UKIP’s official Twitter accounts appeared in the top 100, both parties’ electoral messages were salient in our dataset because of their very active backers who spread mobilizing messages widely (tweeting many times a day) and pointedly (targeting specific constituencies). While this suggests that the bulk of online political campaigning can be carried out by citizens (and not necessarily parties), more research is needed, particularly in multi-party systems, to determine whether Twitter support for a political party during elections is correlated to a party’s polling position and/or resource capacity.

Using our typology to isolate political commands from the rest of the #GE2015 conversation, we identified four strategies that citizens use Twitter to mobilize during elections: in-text calls for action, hashtag commands, sharing calls for action, and frequent posting. The predominant in-text call for action was “Vote” – an expected finding since voting is the manifest participation form typically associated with elections. Messages urging others to support a political organization or candidate are considered mobilization, and not a form of campaigning, because they are issued by citizens and not by parties or party activists. More interesting is that in-text calls for action were by-and-large positive and in support of a party rather than negative, as in Hosch-Dayican et al.’s (2016, p.13) study. This difference may be contextual on account of our cases (the 2012 Dutch national election versus the 2015 British one), or it may result from a difference in our measurement of negativity. Primarily focusing on calls for action, we only captured negativity when mobilizing commands instructed others *not* to do something political. Negative opinions about a party, such as those found in the Dutch election study, would fall into our Information category if they lacked a call for action.

Far outnumbering in-text calls for action were hashtag commands, a finding that is particularly interesting in light of previous research suggesting that political participation can take online-specific forms (Gibson & Cantijoch, 2013; Vissers & Stolle, 2013). Hashtags were citizens’ call for action of choice since they can increase the reach of a post outside of one’s immediate follower network (Bossetta *et al.*, 2017). Like in-text calls for action, the majority of hashtag commands were issued by a small number of users. Moreover, our top three hashtags (#VoteUKIP, #VoteSNP, and #SNPout) expressed clear partisan positions for or against a political party. Shared political hashtags can signify ideologically coherent networks indicative of online publics (Bruns & Burgess, 2015), who can use social media to exchange information, foster trust, and spur political engagement (Gil de Zúñiga *et al.*, 2012). While this has generally been considered positive for democracy, it can also lead to the increased fragmentation and polarization of political debate. The latter scenario seemed to play out in the “hashtag war” we identified between pro- and anti-SNP camps, which were formed around the hashtags #VoteSNP and #SNPout. Especially in the context of contentious political events like elections, the deployment of mobilizing commands in hashtag wars can polarize public opinion and make effective governing post-election more difficult.

The formation of such polarized in-groups was also identified in the third mobilization form, sharing mobilizing calls. For example, the mutual retweeting of our top two users, both UKIP proponents, supports current research investigating information diffusion through SMPs and

finds individuals are “more likely to pass on information that they have received from ideologically similar sources” (Barberá, 2015, p. 10) than dissimilar ones. The last mobilization strategy, frequent posting, is marked by the sheer volume, rapidity, and repetitive content of our most active mobilizers. We suspect that the most prolific citizen-users were tech-savvy enough to use a third-party bot client, allowing them to send recurring tweets and spam the #GE2015 Twitterflow. Somewhat unexpectedly, users avoided retweeting existing content and preferred instead to create numerous new messages with very similar content.

Lastly, accounts of public personalities ranked low in both our Instruction and Promotion categories, as well as in the overall volume of tweets. This is unsurprising since public figures use Twitter primarily as a platform for performing politics to their large, generally young followership (see Loader, Vromen & Xenos, 2016). Having more potential influence on the Twittersphere than the average citizen, public personalities may have more to lose by attempting to mobilize their fan base around a political issue that is potentially divisive or off-putting to some. In addition, celebrities do not need to repeat their message often; it is sufficient they make one call for action to get many retweets. Posting too often, especially about politics, may put public personalities at risk of losing followers, an indicator of their social influence. The same reasoning may explain why the most active ordinary citizen accounts in both the Instruction and Promotion categories remained anonymous: publishing without disclosing one’s identity reduces the social risk of exposing oneself to criticism and social exclusion.

Conclusion

Our study sought to understand how, and to what extent, citizens are using Twitter to mobilize during national elections. We find that, in the week preceding the 2015 British general elections, citizens and public personalities comprised one-third of the top 100 most retweeted accounts using the hashtag #GE2015. To further investigate *how* these civic actors used Twitter during the election, we developed a typology that distinguishes four categories of online political participation: Information, Diffusion, Instruction, and Promotion. Our content analysis revealed that civic actors tweeted and retweeted the highest number of mobilizing messages; however, this is primarily due to a small number of extremely active citizen-users representing particular political positions, usually those of challenger parties (UKIP and SNP).

The high frequency of postings made by these most active mobilizers may be due to the use of bot clients, producing recurring tweets aimed at spreading political messages to the widest audience possible. The use of bots is a topic illuminated by our research but remains open to further investigation. In addition, whether or not the mobilizing calls for action sent by citizens translated into manifest participation (e.g. donating money or voting) was also beyond the scope of our study. Testing the effectiveness of online mobilization requires additional research that would follow the entire process of political participation, from latent to manifest via mobilization.

The four strategies used by citizens to mobilize during the election were in-text calls for action, hashtag commands, sharing mobilizing calls, and frequent postings. Hashtag commands appeared as the predominant citizen-driven mobilization attempt, presumably because hashtags can help reach a large audience and facilitate connectivity among like-minded users. However, we also find that hashtags can be used to wage hashtag wars, such as the one between pro- and anti-SNP accounts. This conflict may be the continuation of the debates during the Scottish

independence referendum, which occurred just eight months prior to our case study. The question of whether issue-centered online publics remain active and/or adapt over successive electoral contests is a subject in need of further empirical inquiry.

Our case study is limited to one election within a single national context, and our use of the Streaming API for data collection delivered only a sample of the overall Twitter conversation. Additionally, our dataset comprised only the main election hashtag at the expense of other hashtags or keyword searches. As an avenue for future research, we invite others to incorporate other cases (e.g. extra-parliamentary politics or local/supranational elections), countries, and social media platforms, since our typology is applicable to multiple contexts and provides a common ground for cross-platform analyses.

VII.

Political Participation on Facebook during Brexit: Does User Engagement on Media Pages Stimulate Engagement with Campaigns?

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Abstract

This study investigates, over an 18-month period surrounding the Brexit referendum, the commenting activity of nearly 2 million Facebook users engaging with political news from British media or with the posts of referendum campaigns. We ask whether citizens' engagement with political news on Facebook motivates their participation with political campaign posts, and we examine whether users commenting on campaign pages trend towards ideologically reinforcing media. Overall, we find comparatively low levels of commenting activity on the official referendum campaigns vis-à-vis the media, and the majority of users (70%) commented only once. Looking at the subset of users commenting on both page types ('cross-posters'), we identify a general spillover effect from media to campaign pages, suggesting a positive correlation between political interest and online participation on Facebook. Reverse spillover occurs immediately around and after the vote, with Remain cross-posters active on the Guardian while Leave cross-posters' media engagement registers more diffuse.

Introduction

The 2016 referendum on Britain's EU membership – commonly referred to as 'Brexit' – resulted in a slight majority of British citizens opting to leave the EU (52%) compared to those voting to stay in (48%). The near-even split reflects the high degree of polarization among the British public over the EU question. Leading up to the vote, campaigns for and against Britain's withdrawal from the Union took to social media in an attempt to persuade and mobilize voters. At the same time, mainstream media reported news about the referendum through their social media accounts, and citizens active on Facebook were exposed to messages from both political and media accounts over the course of the campaign. To date, little is known about what political content citizens access on social media, and even less about whether this content stems from partisan campaign pages or mainstream media outlets.

The present study provides an exploratory first step in examining Facebook users' cross-posting activity between political news coverage by the media and political messages from partisan campaigns. We trace the commenting activity of 1.9 million Facebook accounts that commented to a public post about politics issued by one of six British media outlets, or one of three referendum campaigns, over an 18-month period (June 1, 2015 – November 30, 2016). We seek to uncover how citizens' comment patterns unfolded across media and campaign pages as well as assess whether these patterns contribute to the polarization of opinion regarding EU membership. Under campaign conditions on social media, we expect: a) political interest to influence political participation in online debates, b) online political participation with campaign sites to be more prominent than interest with political news; and c) polarization effects to be reinforced, in the sense that citizens who engage with campaign pages also opt for partisan media.

We start by discussing the Brexit campaigns on Facebook from a user perspective and describe the specific contexts that allow citizens to retrieve political content online and engage in commenting activities regarding politically salient issues. Such an emphasis on different forms of user engagement is helpful to describe the contours of the social media public sphere, where citizens are not only passive recipients of campaigning content but also actively involved in online opinion making. In particular, we are interested in the cross-posting activity of users who shift between news and campaigning sites and between ideological camps (pro- and anti-Brexit). We conclude with an outlook on the polarizing effects of Facebook political campaigning, which is found in this case to be less accentuated than predicted by the 'filter bubble' assumption.

Polarization and Political Engagement on Social Media

Referendum campaigns and their outcomes are heavily dependent on the economy of the news media (Semetko & de Vreese, 2004). By-and-large, most voters rely on the information that political actors and the media disseminate in order to form preferences before a public consultation. Previous research argues that the choices of voters who are politically interested and knowledgeable (i.e., those who seek out political information) are affected equally by political campaign cues and by substantive information provided by the media (Bullock, 2011). However, in polarized political environments, voters tend to rely on partisan campaign messages rather than substantive information when making decisions (Druckman *et al.*, 2013). Since the trend towards polarization is increasing across liberal democracies (Iyengar & Westwood, 2015), the role of political communication is increasingly influential for public opinion formation. Strategic game frames applied by both campaigners and journalists often result in a strong polarization of opinion during election campaigns (Pedersen, 2014). The

media effects of amplifying polarized opinion and its implications for democracy have been theorized mainly in regard to offline campaigning (Semetko & de Vreese, 2004; Hobolt, 2009; de Vreese, 2007). Whether similar dynamics of polarization also apply to online campaigning remains an open question that we seek to answer by investigating citizens' commenting activity on Facebook during a national referendum.

Referendum campaigns are generally more polarized than regular pre-election campaigning on account of the binary choice implied (supporting or opposing a policy issue). During referendum campaigns, political actors strategically attempt to persuade and mobilize voters along a preferred policy position. The news media, meanwhile, aim to inform the public of the issue at stake while also generating revenue in today's high choice media environment. On social media platforms like Facebook, political and media institutions vie fiercely to drive user engagement with their content. For political actors, the facilities provided by social media enable a direct contact line with voters, decoupling political campaigning from media agenda-setting and framing. The media seem to have induced a process of tabloidization, reshaping their news content according to popular taste in a bid to increase readership (Esser & Strömbäck, 2014). From this liberal market logic, sensationalism and polarization are useful strategies to alert the user community, solicit their active participation through social media (Boyer, 2013), and facilitate opinion-exchanges across the political spectrum (Dahlgren, 2013).

From this public sphere logic, communication is enhanced across news and campaigning sites with a potential to involve users actively in informed opinion making. Previous research suggests that a spillover effect occurs in the sense that exposure to political information on social media, and active engagement with news on these platforms, increases the likelihood of offline political participation in partisan campaigning (Prior, 2005; Cantijoch *et al.*, 2016). Furthermore, the various efforts to enhance users' engagement by both political and media actors may either reinforce or undermine the polarization of opinion. If power in a hybrid media system is exercised via manipulating "the information flows in ways that suit [one's] goals and in ways that modify, enable, or disable others' agency" (Chadwick, 2013, p. 208), then social scientists should investigate whether campaigners or news media set the agenda and influence the direction of discussion online. Uncovering 'who's first' – campaigners or media – in engaging new users in political commentary is important, since media reportage can influence citizens' evaluations of a political actor or issue and subsequently, their voting behavior.

Campaigning politicians reach out to voters with opinioned content online in ways that challenge traditional political communication models, where the media reserve a privileged gate-keeping role on the flow of political information. Whereas this classic understanding holds that political actors campaign *through* the media, on Facebook political actors communicate information *alongside* the media in the same digital space. Still, news media maintain a responsibility to inform voters about issues during referendum campaigns, and journalists are motivated to set the public agenda independently using more unbiased content than political campaigners (Haleva-Amir & Nahon, 2016). That is to say, politicians and the media try to differentiate their communication strategies about the campaign to maintain distinct profiles.

On social media, users need not necessarily to seek out political information; rather, they can be exposed to political information online through the algorithmic filtering built into the design of many social media platforms. Accidental exposure challenges the gatekeeping power typically held by politicians and the media and places customized information directly in the hands of citizens. Largely, users are responsible for the news shown on their social media feeds since they self-select the friends, figures, and institutions that they follow. Moreover, citizens play an active part in influencing the distribution of news via their engagement with its content (in the forms of likes, comments, and shares) (Bruns, 2005). If users' reactions to content on social media influence the potential for accidental exposure, it follows that considering how users engage with political content on social media is critical to understanding the mechanisms underpinning contemporary public opinion formation.

Likes, comments and shares constitute different degrees of political engagement on social media. Each of these discursive acts positively affects the ranking and diffusion of a post on Facebook, with comments ranked one of the highest forms of engagement by Facebook's algorithms. We argue that since they are a more resource-intensive form of political engagement in terms of the time, energy and social risk, comments are one of the best approximations for political engagement on social media (Bossetta *et al.*, 2017). Since users can comment on political content issued by both political actors and the media, a distinction must be made between these two types of posts to more thoroughly assess the power dynamics among politicians, media and citizens on social media.

In line with existing literature, we consider attention to political news as an indicator for *political interest*, which is a necessary pre-condition for other kinds of political activity (Strömbäck & Shehata, 2010; Boulianne, 2011). A user who comments on political news is arguably more interested in politics than someone who merely likes or shares content without leaving a reply. While a comment can communicate expressive content ranging from support to disagreement, the act of leaving a comment suggests the user is sufficiently – albeit perhaps minimally – interested enough to get involved in the public conversation.

Comments are often analyzed as a facilitator of political participation and as forms of opinion exchanges that involve particular user groups (Dahlgren and Olsson, 2008). If made to a political campaign post, comments can be considered a form of online political participation (Dutceac Segesten & Bossetta, 2017) since they signal a high degree of investment in a political cause and positively influence the algorithmic ranking of a post. Political posts that generate a large amount of comments increase a campaign's visibility and subsequently, the potential for accidental exposure to other Facebook users through private networks. Whether a user comments in support or in contestation of a campaign's message, the activity of commenting on a campaign's post signals participation in the democratic process and a desire to influence a political outcome.

Certainly, not *all* comments made to media and campaign posts indicate high levels of political interest or significant investment in a political cause; such expectations would not match the reality of citizens' commenting behavior about politics on Facebook. Nevertheless, our exploratory research design classifies commenting on campaign and media pages as general indicators for political interest and participation, respectively, to create a framework able to identify meaningful patterns across a large dataset. Being purely quantitative, our study does

not account for the content of the collected comments; therefore, we do not evaluate the information value and deliberative quality of online discussions. Additionally, in collecting anonymous data we do not inspect the personal or national identity of the commenters. Previous research finds that online commenters are largely non-representative of a country's population as a whole and heavily biased in terms of gender and ethnicity (Quinlan *et al.*, 2015; Guardian, 2016). Moreover, social media is a transnational space, where users from across the world can engage with content published in any given country. We cannot posit that the users tracked in our study are British citizens, but many who felt inclined to comment on British Facebook pages were likely affected, directly or indirectly, by the outcome of the Brexit referendum.

Research Design and Methodology

The 2016 Brexit referendum has been chosen as a case for five reasons. First, Britain has high internet penetration and its politicians and media outlets are relatively proficient in social media compared to other parts of Europe. Second, British citizens have used online communication technologies during elections since at least 2001 and are therefore adept at using them (Bimber *et al.*, 2015). Third, referenda are polarizing environments and the for/against dichotomy presents a different campaign dynamic than a national election in a multi-party system. The collapsed political terrain indicative of a single-issue referendum is chosen as a means to simplify the analysis: users can be classified as for or against the referendum, independent of their national party affiliation. Fourth, referenda are typically outside 'normal' politics, and the novelty of an EU referendum ensures a high saliency in media reporting. The last reason is the structure of the British media system. As a market-driven, liberal media system (Hallin and Mancini, 2004) our assumption is that mainstream British media on Facebook will aim to stimulate engagement for the commercial reasons mentioned above.

Tracing citizens' Facebook commenting patterns across both official campaigns pages and those of mainstream British media outlets, our survey is guided by the following research questions:

RQ1: On Facebook, does citizens' engagement with political content posted by media pages stimulate engagement with the posts of political campaigns?

RQ2: Do citizens' Facebook commenting patterns across media and campaign pages contribute to the polarization of opinion regarding EU membership?

The first question seeks to establish whether there is a relationship between Facebook users who comment on political news stories issued by the media and those who comment on the posts of political campaigns. The second question focuses on users who comment on both media and campaign pages – users we refer to as 'cross-posters' – and is structured to evaluate whether cross-posters' activity indicates polarization. Uniting both questions is a shared focus on citizens' engagement with political content online and a common goal of understanding where citizens' political commentary on Facebook is directed in an electoral context.

To answer our research questions we develop three hypotheses. The first hypothesis tests whether prior activity with media pages (our proxy for political interest) influences more activity with campaign pages (our proxy for political participation) and expects that:

H1: Facebook users commenting on media pages before the referendum’s announcement will be more active on campaign pages than those who did not comment on media prior to the campaign (Political interest influences political participation in online campaigns).

Our second hypothesis seeks to test the potential for online campaigns to spur political interest in news. We therefore take those campaign commenters who were not active in media debates before the referendum, but did engage with media posts during the official referendum campaign, and trace their ‘cross-posting’ activity. Hypothesis 2 states that:

H2: During the official campaign period, commenters who engaged with campaign pages will outnumber those who commented on media pages (Under campaign conditions, online political participation is more prominent than interest with political news from the media).

These two hypotheses address our first research question by examining the relationship between citizens’ commenting activity across media and campaign pages. Our second research question investigates whether the comment patterns of ‘cross-posters’ are characteristic of polarization. Polarization is low if cross-posters engage with news from different media sources and shift between the three campaigning pages. Commenting across pages indicates exposure to a broader spectrum of political topics and plural opinion. Polarization is high if cross-posters restrict their commenting to a single news outlet and campaign site. Such cloistered activity indicates exposure to a narrow selection of topics and increases the likelihood of the emergence of sharp divisions of opinion. We can speak of extreme polarization if bipolar campaigning correlates with bipolar news consumption. In this case, Facebook users’ activity would be characteristic of “filter bubbles” (Bakshy *et al.*, 2015), where like-minded users congregate in highly partisan digital spaces with little diversity of opinion (Sunstein, 2009). Since polarization of debates is a general characteristic of referendum campaigns and the way they are made salient in the media’s agenda, we develop a third hypothesis aimed to test the degree of polarization among cross-posters. We expect that:

H3: Cross-posters who comment first on campaign pages will trend towards highly partisan media (Polarized environments encourage ideological reinforcement).

We chose six different newspapers that have a significant national presence both in print and on Facebook. As British newspapers have partisan political affiliations, we have included six major media outlets that are associated with positions spanning the political spectrum: The Daily Express, The Daily Mail, The Telegraph, The Times, The Guardian, and the Independent. As a key feature of the British debate, all these newspapers were partisan, i.e. they took an explicit stance in the referendum campaign. The tabloid press has a high circulation and is found to defend often Eurosceptic positions or national sovereignty against the EU (Krouwel *et al.*, 2017: 115). The Daily Express and The Daily Mail are both tabloids and represent the Eurosceptic position; both supported the Leave campaign. Broadsheet newspapers generally have lower circulations than tabloids and express more plural opinion regarding the EU. We include The Telegraph and The Times in our sample, which are classified by experts as right-wing and Eurosceptic (*ibid.* 116). We further collect data from two left-leaning newspapers’ Facebook pages: The Guardian, which is pro-European and encouraged its readers to vote

Remain, and The Independent, a newspaper that currently exists only in digital form and during the referendum favored the UK's continuation of its EU membership.

We included three political campaigns in our analysis: Stronger In, Vote Leave, and Leave EU. Stronger In and Vote Leave were the official campaigns designated to represent the two options on the referendum ballot. Both campaigns received state funding for their electioneering, and both communicated their message across a variety of media forms, from posters to TV ads. Leave EU, by contrast, was an unofficial, privately sponsored campaign associated with the UK Independence Party and was largely comprised of more radical proponents of Brexit than Vote Leave. Leave EU had the most Facebook followers at the time of writing (797,173). Stronger In (renamed Open Britain after the defeat in the referendum), had 567,668 followers, whereas Vote Leave, whose Facebook page is currently inactive, had 547,108 followers.

Using the Java-based tool VoxPopuli, developed by Dujé Bonacci, we surveyed the six newspaper Facebook pages (Daily Mail, Telegraph, Times, Guardian, Independent and Daily Express) and three campaigns (Stronger In, Vote Leave and Leave EU) for the period June 1, 2015 – November 30, 2016. For each of these public pages, we harvested all the posts made by the page and, for each post, all first and second order comments. First order comments refer to comments made in reply to the institutions' post; second order comments refer to replies to another user. In total, we gathered 189,940 posts that generated 33,737,588 comments from 6,735,234 unique commenters.

The focus of our analysis is citizens' online engagement with *political* content. We consider all posts by campaign pages, and comments to them, to belong to the sphere of politics. For the media, we separated political stories (for example about the refugee crisis, the rise of ISIS, Brexit or the American presidential election) from non-political content, e.g. the genres of lifestyle, entertainment, sports or culture. To achieve this categorization, we created a dictionary of political keywords that contained over 150 entries (see the Appendix for the complete list). In a similar approach to Freelon's (2017), we built the dictionary inductively by first manually classifying political news stories and then identifying prominent keywords within them. The dictionary contains the names of prominent political actors (including foreign heads of state), topical words (such as 'oil' or 'refugee'), and countries or cities featuring prominently in contemporary political debates. While only one word needed to appear in a post to count as political (e.g., USA), by examining keyword co-occurrence we find that the large majority of posts containing any of these words were political in their content (e.g. 920 of 928 articles mentioning USA, or 99%, were political). Our criteria, it is important to emphasize, captures political content outside the scope of the immediate Brexit debate, since our time frame includes several months both before and after the referendum campaign.

Results

Our political sample (combining all campaign posts and all political media posts) contains 47,843 posts, associated with 8,563,819 comments issued by 1,863,487 unique users. Political content therefore represents roughly one quarter of the number of total posts, comments and commenters. For the remainder of the study, we will refer only to this political subsample when we report and analyze data. For each comment, we collected the user ID of the commenter, the ID of the post they commented on, as well as the time when the comment was made. Figure 1 below presents the public posts issued by each page, as well as the number of posts that generated comments.

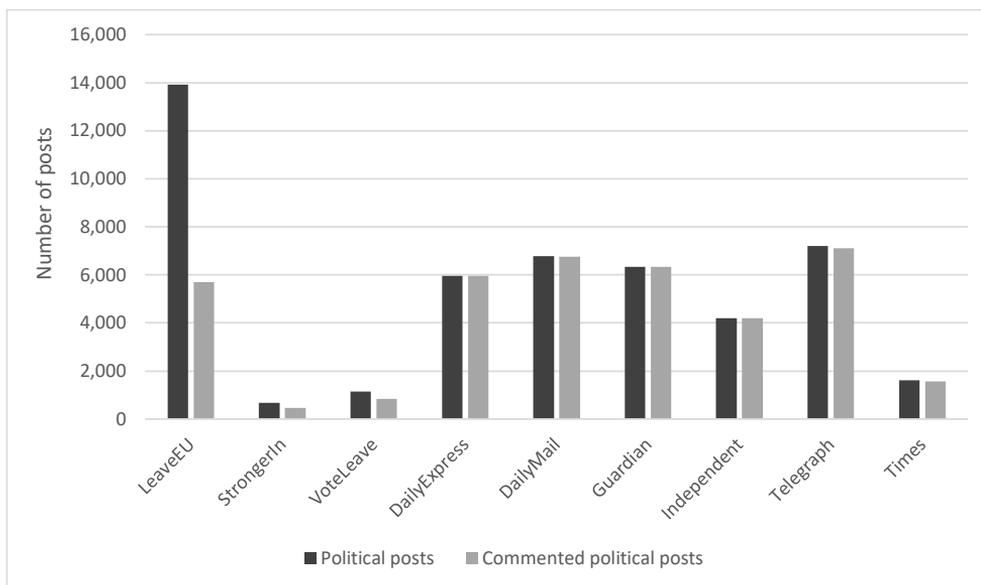


Figure 3: Political Posts (Aggregate Data)

Overall, Figure 1 highlights that *political commentary on Facebook overwhelmingly occurs on media pages* compared to the official referendum campaigns, Stronger In and Vote Leave. On the one hand, this is relatively unsurprising. Previous research highlights that Facebook users are reluctant to follow (Nielsen & Vaccari, 2013) or leave comments (Vesnic-Alujevic, 2012) on political actors' Facebook pages. However, the Leave EU campaign is a clear exception and generates commenting activity on par with major British media outlets on Facebook. Leave EU, while by far the most active political page in the dataset, only received comments on approximately one-third of its posts. This outlier is due to Leave EU allowing users to post 'visitor posts' to the page, a feature that was counted as original posts by our harvester. This choice by Leave EU to allow users to post on their page fits with Leave EU's grassroots profile, but clearly, visitor posts did not garner significant commenting activity. The least active media outlet in terms of both page activity and comments was The Times, whose content is mostly behind a paywall and therefore does not post on Facebook as regularly as the other, free-access media.

When given similar opportunities, Facebook users seemingly prefer to engage with media posts rather than those of the political campaigns. This could be explained by risk avoidance behavior (users do not wish to make their political positions open to their Facebook 'friends' because they may be penalized for their stance). Another explanation could be inertia (the campaigns existed only for a short time, whereas the newspapers have been established longer, so users have developed the habit of reading and commenting media stories while lacking the habit of commenting on campaign pages).

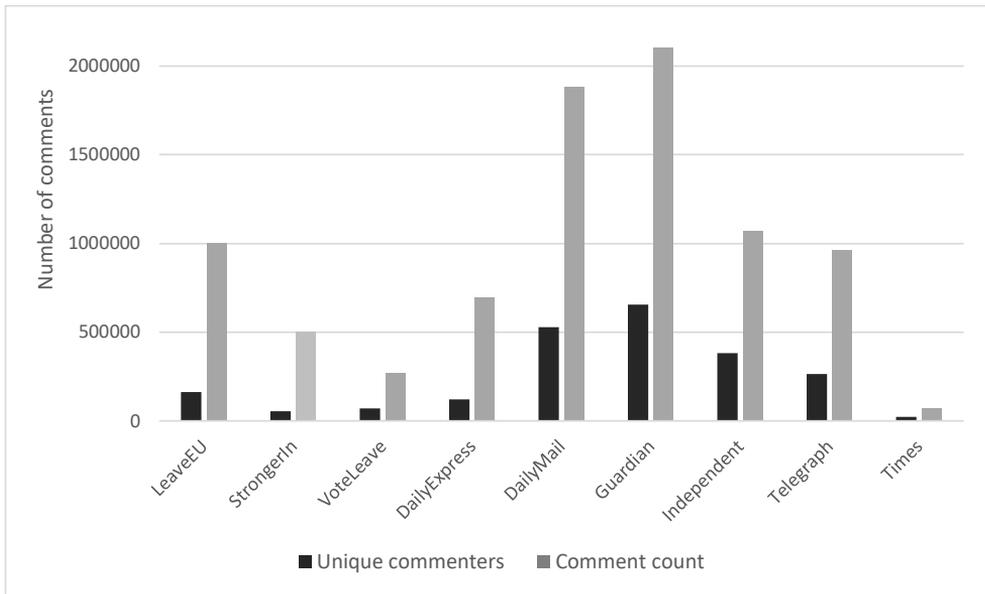


Figure 4: Commenting activity (Aggregate Data)

Figure 2 reports the number of unique commenters as well as the overall comments they generated. The Guardian is the most engaging Facebook page, receiving a total of 2,105,658 comments, followed by the Daily Mail, with 1,884,898 comments. The Independent is ranked third with 1,071,897 comments. Among the campaigns, Leave EU accumulated one million total comments, Stronger In half a million comments, and Vote Leave a little over a quarter million. The low engagement numbers of Vote Leave are partly due to the fact that the campaign site remained dormant since June 26, 2016 (three days following the end of the referendum). Cumulatively, 237,628 unique users commented on campaign pages compared to the far higher 1,719,251 commenters on media pages. Like Figure 1, Figure 2 shows that the media pages were more propitious to political discussions on Facebook than the campaign pages. Figure 2 also suggests that most of the comments are generated by a relatively small number of users. This is confirmed by our data; a majority (70%) of commenters only left a single post during the time period. An additional 12% commented on two posts, 9% commented on five posts and only 1% commented on 40 posts or more. With the majority of users commenting only once, the potential population of users cross-posting between media and campaign pages is relatively small.

Figures 1 and 2, respectively, show the overall picture of public pages' activity and users' comments to their posts. To address our research questions and accurately test our hypotheses, we need to disaggregate our population into subgroups. Classifying the user IDs of commenters, we divide them into three categories: those who commented only on newspapers (Newspaper Only), only on campaign pages (Campaign Only) and those who posted on both media and campaign pages (Cross-posters). By tracking the time stamp of the post to which they made their first comment, we also split the cross-posters in two categories. If they first commented on a media Facebook page, we named them "Newspaper First"; if their first comment went to a campaign site, we labeled them "Campaign First".

We then compare two 3-month periods: one before the Brexit proposal was put on the political agenda (September – November 2015) and the other during the Brexit referendum campaign

(April – June 2016), in order to separate the activities that measure interest and participation respectively. We traced the user IDs of those commenting on newspapers in the first period and assessed if the same user IDs appeared on the comment fields of the campaign sites more often than those belonging to previously unengaged users. The results show that only 1,955 users (or 1.5%) who commented on the media posts before the official campaign (i.e., April 14 - June 23, 2016) also commented on a political campaign post during it. Zooming in on the campaign period, we looked at the distribution of commenters across our three general categories: Campaign Only, Newspaper Only and Cross-posters. We see that the number of users engaged with the campaign (113,829) is half of those who commented only on newspapers (226,551).

Across our dataset, the number of cross-posters is 67,930 users out of the original 1.86 million, or 3.6%. These users are almost evenly distributed among those who first left a comment on a media site (36,326) and those who first did so on a campaign site (30,133). While the population of cross-posters assessed here is small, the group is significant as they are the most politically engaged in commenting. Comparing the three periods (before, during, and post-campaign), we see that those users who only commented on the campaigns left an average of 4.5 comments. By contrast, users who commented on the media before the campaign and also cross-posted during the campaign left an average of 13.2 comments. Based on this overview of the commenting activity on Facebook and the general distribution of user comments on campaigning and news sites, we decided to test our hypotheses on the subset of users who cross-posted, since their activity is at the core of what we want to capture: the effect of political interest on participation and vice versa.

Figure 3 below depicts the cross-posting patterns of commenters, capturing the spillover between media and campaign Facebook pages. Figure 3 does not depict an aggregate number of commenters but only the *newly engaged* cross-posters each month. To be counted in this group, a user could not be present in our dataset previously and also have left a comment to both a media and campaign post within the same month. We added this time constraint to better approximate a correlary effect between political interest and participation. That is, if a user commented first on a political story posted by the media, and shortly thereafter left a comment to a campaign, there is a higher likelihood that the media story influenced engagement with the campaign than if the time difference between the comments was larger. The light grey bars show the number of unique IDs who had first commented on political content published by media pages and then commented on the campaign pages. The dark grey bars show the reverse: those who first commented on campaigns and then on the political content of newspapers pages. Very few commenters started to comment on both types of Facebook public pages on the same day (black bars).

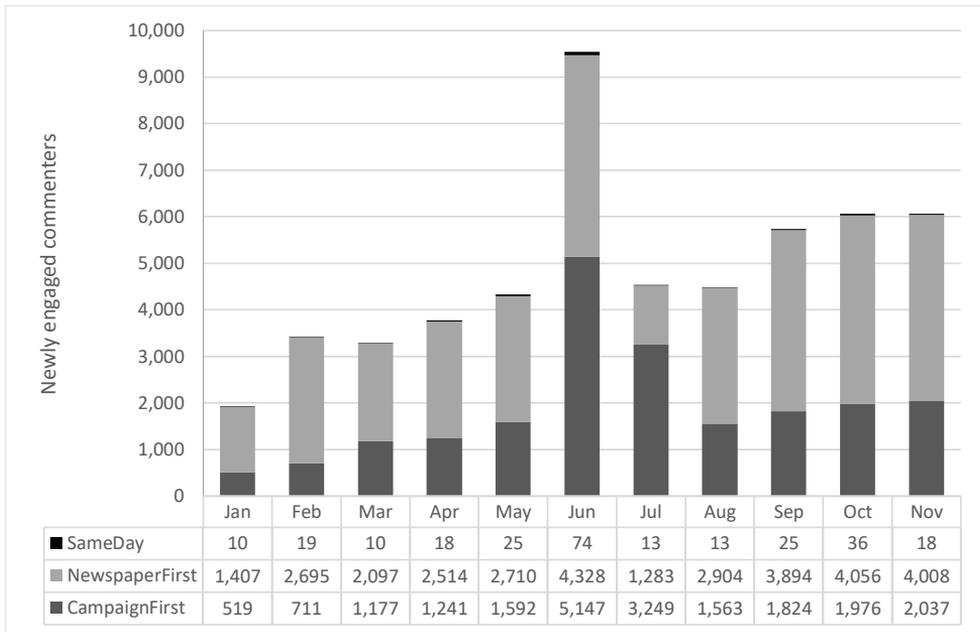


Figure 5: Cross-posting Activity of Newly Engaged Users in 2016

Figure 3 shows that the number of newly engaged cross-posters who joined the political debate on Facebook typically ranged between 3,000 and 6,000 users per month. June (the month of the vote) is a clear exception. Among these cross-posters, spillover typically occurred from media to campaign posts, **supporting hypothesis H1**. The tendency for newly engaged users to comment first to a political news story and then to a campaign tentatively points to a positive correlation between political interest and political participation, with the former catalyzing the latter. Moreover, the spillover pattern identified suggests that on Facebook, the mainstream media retain the role of agenda-setters.

Keeping our focus on cross-posters **we also find partial support for hypothesis H2**: that under campaign conditions, commenting on campaign posts will outnumber commenting on political news stories. Although during April and May the general pattern of spillover is from media to campaigns, we find that in month during and following the vote (June and July), the pattern reverses from campaigns to the media. Interestingly, the month after the vote displays the highest proportion of Campaign First cross-posters shows that campaigns' Facebook pages remained active sites of public opinion formation after the referendum. The reverse spillover also points to the mobilizing potential of campaigns on Facebook.

To examine whether this campaign mobilization supports ideological polarization (**H3**), we disentangle the cross-posting flows Campaign First commenters to see with what media they also engage. We broke down the timeline in three periods: before, during and after the referendum campaign. For each campaign, we searched for signs of ideological similarities between the position of each campaign vis-à-vis the EU and the position of the newspaper in the same matter.

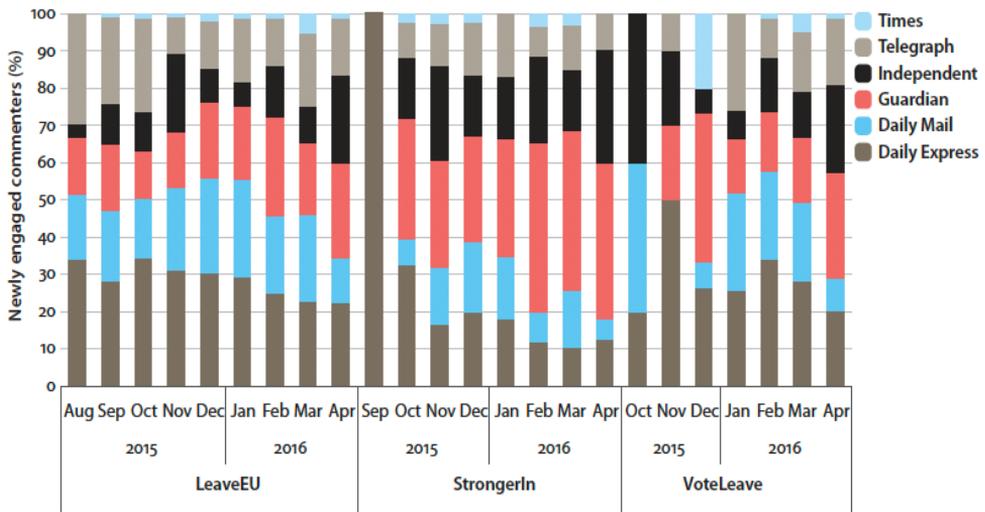


Figure 6: Outgoing Monthly flows from Campaign to Newspapers: Before the Campaign

As seen in Figure 4, the media outlets where Campaign First commenters decide to post next is relatively stable over time. We should emphasize here that Leave EU was already active in August 2015 and thus had the opportunity to attract more Campaign First commenters than Vote Leave, which was launched two months later. In this pre-campaign period, the total number of comments that cross-posters from the campaigns left on newspaper Facebook pages therefore varies: 3,850 comments to newspapers made by Leave EU first commenters, 802 by Stronger In commenters and only 28 by Vote Leave. In September 2015, we have only two cross-posters for the Stronger In campaign, both of whom went to The Daily Express. We chose to present the commenting patterns as percentages to account for this difference in raw numbers. In total, 4,860 comments were made by Campaign First cross-posters before the official campaign began.

Figure 4 shows the most popular destination for Campaign First cross-posters during this time. The preferred media for Leave EU cross-posters was the Daily Express (29%) and Daily Mail (20%). For Vote Leave, the Daily Express was also the number one destination (also 29%) but, in contrast, The Guardian, a newspaper that supported the Remain cause, came second with 19%. For Stronger In, The Guardian was first (31%), followed by Daily Express (17.5%). Even if not many comments were left in total in the pre-campaign period, it can be argued that there is some crossing of ideological lines by Vote Leave and Stronger In commenters.

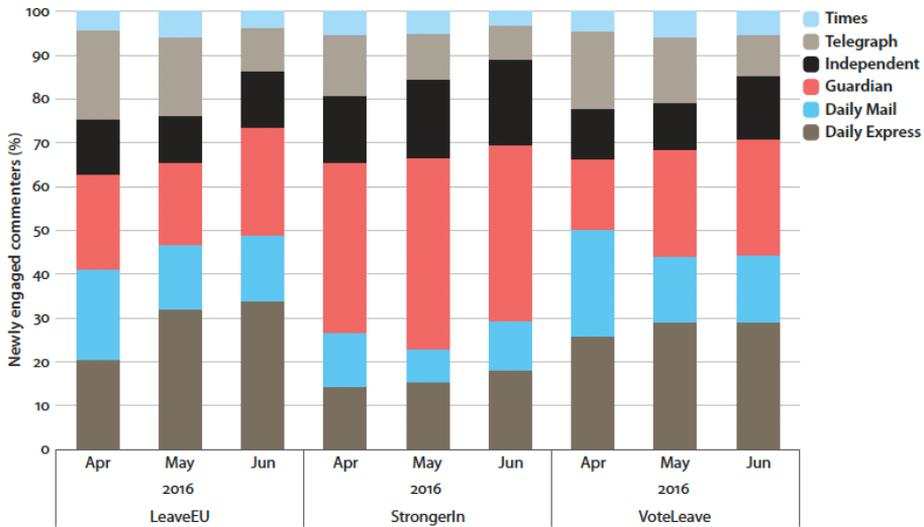


Figure 7: Outgoing Monthly Flows Campaign to Newspapers: During the Campaign

During the campaign, the trend towards ideological similarity is maintained for Stronger In, whose Campaign First commenters engaged the most with posts from The Guardian (41%) and the Independent (17.6%). Leave EU and Vote Leave are almost identical in the pattern of cross-posting displayed, even though the raw number of comments were higher for the unofficial Leave EU. The most commented newspaper site was Daily Express (29% for Leave EU, 28% for Vote Leave), followed by the pro-Remain newspaper the Guardian (22% for both campaigns). Like before the campaign, the Leave supporters commented substantially on Remain outlets. In comparison with the pre-referendum period, the number of cross-posts from campaign to media content was higher at 5,125 (even despite the pre-referendum period being nearly six months longer).

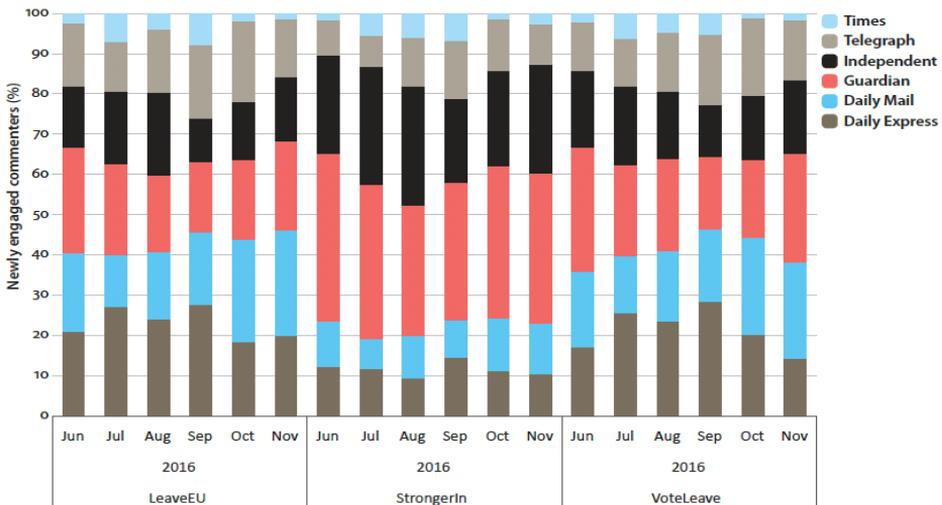


Figure 8: Outgoing Monthly Flows Campaign to Newspapers: After the Campaign

After the campaign, the patterns observed in Figures 4 and 5 remain largely the same. Leave EU commenters also comment on Daily Express (23%) and the Guardian (21%). Vote Leave commenters are actually now more active on The Guardian (23%) than on the Daily Express (21.5%). Stronger In commenters continue to remain ideologically consistent with the Guardian (37%) and the Independent (26%). Post-referendum and up until November, The Guardian is the number one destination for the cross-posters examined. Even when taking into account only the two and a half months after June 23 to make the time periods comparable, there is a notable rise in the number of comments made by Campaign First users to newspapers (9,827).

Even though the Leave EU commenters left more comments than Vote Leave ones, if we look at the percentage distribution across the six newspapers, the two Leave campaigns are almost identical. We wanted to see this was due to same users active on both pages, so we calculated the cross-posting activity also across campaigns. The data reveals that only about half of the Vote Leave commenters also posted on Leave EU, and about 20% of Stronger In commenters also left a message on the Leave EU campaign. Thus, the similar pattern observed is not because of the presence of the same users; rather, it is because those users share the same political profile.

We can therefore conclude that after the referendum, Campaign First cross-posters engaged more with the newspaper sites, in comparison to the period before the referendum. This engagement is directed towards ideologically similar pages for Remainers, who exhibit lower tendencies to comment on the posts of their ideological adversaries. On the contrary, Leavers found the Facebook page of The Guardian, a newspaper that embraced the opposite stance in the EU referendum, to be the second most attractive destination for their comments. Without knowing more about the content of their comments, we cannot confidently say whether those who crossed the ideological divide did so in a deliberative or spiteful manner. What is certain, though, is that cross-posting activity between the Remain and Leave commenters is significantly different. Based on these findings our third hypothesis (**H3**), which expected that after the referendum cross-posting will be more reinforcing than cross-ideological, is **confirmed only for the Remain commenters**.

Discussion and Conclusion

The descriptive statistics of our data point to two interesting findings. Firstly, the political commentary on Facebook surrounding Brexit overwhelmingly took place in the comment fields of mainstream media pages – *not* those of the referendum campaigns. The exception was the grassroots Leave EU campaign, who generated comment levels on par with the media. The high level of activity exhibited on the Leave EU page may be attributable to the more radical, nationalist position of its leaders in comparison with the official Vote Leave campaign. Secondly, the majority (70%) of users in our dataset left only one comment to these pages across the entire 18 months studied. Supporting both these trends, previous research on citizens' social media use in the 2015 British general election finds that a small number of highly active users, who typically express partisan support for nationalist parties, issue the most political calls for action on Twitter (Dutceac Segesten & Bossetta, 2017). Here, we decided to focus our analysis on the most active users and more specifically, on cross-posters (i.e., users commenting to both a media and campaign page within the same month). Albeit a small sample of our data (3.6%), these users exhibited proportionately high levels of engagement with

political content and are thus likely to exert greater influence on the discussion's agenda and tone than one-off commenters.

The study sought to answer two research questions. The first asked whether a positive relationship could be identified between users who engaged with political news stories from the media and those active in commenting on posts issued by the referendum campaigns. Our analysis shows that when cross-posters first enter the political conversation on Facebook, a spillover effect occurs from media to campaign content. This suggests, firstly, that the media retains an agenda-setting role on Facebook and secondly, that they can stimulate engagement with campaigns. Interestingly, we observe a reverse spillover from campaigns to the media in the month during and after the referendum, highlighting the mobilizing potential of Facebook campaigning. These two trends support our first two hypotheses in the case of cross-posters, but not for the overall (and less politically engaged) population.

Our second research question asked whether the commenting activity of cross-posters indicates behavior characteristic of political polarization. We find evidence suggesting that mobilization by Facebook campaign pages leads to the reinforcement of political positions. In the post-referendum period, 'Campaign First' cross-posters – particularly Remain commenters – had a tendency to follow up with comments to partisan media pages. In line with the 'filter bubble' argument, we find ideological alignment between commenters of the Remain campaign and those of left-wing and pro-EU newspapers. However, Leave campaigners did not stick to their own ideological home turf; they crossed into Remain territory more frequently and commented intensively on posts by The Guardian, the flagship outlet for pro-EU supporters.

Our current methodology limits our capacity to provide a sufficient explanation for the phenomenon of cross-postings of Eurosceptic Leavers on pro-European media sites. However, the activities that we do find point to the classic patterns of opposition mobilization against the status-quo. Brexiteers, as the challengers, were more motivated to engage in campaigning than Remainers, who defended the status-quo. As such, Brexiteers may not only have exhibited a more provocative style of campaigning; they may also have tried to occupy the terrain of the political opponent and reach out to persuade users from the other side of the political spectrum. This fits with observations based on the Twitter campaigning styles of incumbents versus challengers during US elections (Evans, Cordova and Sipole, 2014). Along the same lines, the Leave cause was perceived by others and described itself as the 'underdog', which provided extra motivation for Leavers to get their messages out through all the available channels in order to reach the many undecided voters. Remainers, on the other hand, may have thought that their victory was certain and thus gave low priority to campaigning. Additional information in the form of content analysis, surveys and/or interviews is necessary to glean more accurate insights into the different motivations of Leave and Remain cross-posters.

Appendix

List of political keywords

"Abu Bakr al-Bagdad"	"Gibraltar"	"Radical"
"Afghanistan"	"Government"	"Recep Tayyip Erdogan"
"Africa"	"Greece"	"Referendum"
"Aleppo"	"Grexit"	"Refugees"
"Angela Merkel"	"Hasan Rohani"	"Republican party"
"Ankara"	"Hillary Clinton"	"Russia"
"Archbishop"	"House of Commons"	"Saudi Arabia"
"Athens"	"House of Lords"	"Scotland"
"Attack"	"Human rights"	"Sebastian Kurz"
"Austria"	"Hungary"	"Senate"
"Baghdad"	"Immigration"	"Spain"
"Balkans"	"Iran"	"Stronger In"
"Ballot"	"Iraq"	"Syria"
"Bank"	"ISIS"	"Teheran"
"Barrack Obama"	"Islam"	"Tel Aviv"
"Bashar al-Assad"	"Israel"	"Terror"
"Berlin"	"Istanbul"	"Theresa May"
"Bomb"	"Italy"	"Turkey"
"Boris Johnson"	"Jean-Claude Juncker"	"UAE"
"Brexit"	"Jeremy Corbyn"	"UK of GB"
"Brussels"	"Jerusalem"	"UKIP"
"Cabinet"	"Jose Manuel Barroso"	"Ukraine"
"Callais"	"Kabul"	"UN Security Council"
"Chancellor"	"Labour party"	"United Nations"
"China"	"Lampedusa"	"USA"
"Church"	"Lebanon"	"Viktor Orban"
"Church of England"	"Libya"	"Vladimir Putin"
"Citizen"	"London"	"Vote"
"Congress"	"Marine Le Pen"	"Vote Leave"
"Conservative party"	"Martin Schulz"	"Voter"
"Crisis"	"Matteo Renzi"	"Wales"
"David Cameron"	"Mediterranean"	"War"
"Debt"	"MEP"	"Weapon"
"Democracy"	"Mexico"	"Westminster"
"Democratic party"	"Migrants"	
"Dollar"	"Minister"	
"Donald Trump"	"MP"	
"Donald Tusk"	"NHS"	
"Downing street"	"Nice"	
"Ed Miliband"	"Nick Clegg"	
"Egypt"	"Nicola Sturgeon"	
"Election"	"Nicolas Sarkozy"	
"England"	"Nigel Farage"	
"Euro"	"Northern Ireland"	
"Eurocrisis"	"Nuclear"	
"Europe"	"Oil"	
"European Central Bank"	"Opposition"	
"European Commission"	"Pakistan"	
"European Council"	"Palestine"	
"European Parliament"	"Paris"	
"European Union"	"Parliament"	
"Eurozone"	"Petro Poroshenko"	
"Fallujah"	"Politics"	
"Foreign Office"	"Pope"	
"France"	"Pound"	
"Francois Hollande"	"President"	
"Geert Wilders"	"Prime minister"	

VIII. Conclusion

In concluding this dissertation, I wish to return to Odysseus' tale of the Cyclopes. In many ways, these giants signify the current state of social media research. By studying single platforms at limited glimpses in time, political communication scholars risk having a one-eyed view of the digital world. To broaden this worldview, scholars need to equip themselves with theoretical approaches that work across platforms and time.

Currently, the affordances concept is the primary lens through which to interpret social media's impact on politics. However, the various applications of affordances have bred a hydra-headed concept that, I argue, has lost its utility for research. Instead of lending to constructive theory-building, the inconsistent operationalization of such high-level concepts leads to research designs that often don't speak to each other. Recall that the Cyclopes lived in caves, high atop lofty mountains.

In an attempt to harmonize cross-platform research, I have offered up what I consider a more grounded approach to studying social media: the digital architectures framework. By focusing on platform features, and observing how users manipulate them to practice politics, the digital architectures approach has the potential to archive platform development while generating powerful insights into how political processes are enacted across platforms. The work included here constitutes only a first-step in this direction.

Still, at least three key findings emerged from this odyssey. The first is that across both Facebook and Twitter, a small number of highly active users tend to dominate the political conversation online. These users, at least in the period preceding what may turn out to be one of the most pivotal decisions in British history, tend to favor nationalism and extremely partisan positions. The second finding is that while citizens figured prominently in political discussions online, the mainstream media seem to retain their agenda-setting role on social media. On Twitter during the 2015 British General Election, media organizations and their journalists were the most represented actor-type in the top 100 retweeted accounts. On Facebook during the Brexit referendum, the amount of political discussion in the comment fields of media organizations far outnumbered activity within the official campaign pages. Comparing the two forums for discussion is not exactly congruous, which points to the third finding: digital architectures matter for how users enact politics on social media.

At the outset of this dissertation, I posed the research question: *How do the digital architectures of social media platforms mediate practices of political communication?* Whether it be campaigning, journalism, or participation, the digital architectures of social media mediate practices of political communication by circumscribing users' behavior. Chapter 4 showed how political campaigns in the United States either crafted platform-specific content, or recycled existing messages, in line with the protocols of each platform. Chapter 5 argued that digital architectures enable citizens' participation in politics, but idiosyncrasies in these structures may encourage different manifestations of citizenship. Chapter 6 delineated the four strategies used by citizens in electoral participation on Twitter, where the hashtag feature helped citizens "punch above their weight" alongside political and media elites. Finally, Chapter 7 revealed that on Facebook during a highly contentious plebiscite, citizens tended to congregate in the comment fields of media pages, and very few were active in discussing politics across media and campaign pages.

Like the agoras of Athens and Priene presented in Chapter 1, Twitter and Facebook are public spaces for citizens to assemble and discuss politics. As such, both platforms can be considered democratic fora. However, differences in the structure of platforms necessarily affect how agency can be exuded through them, and scholars should be more attentive to this interaction between structure and agency in future work. Without a focus on how digital architectures shape users' political activity online, assessing social media's democratic implications becomes a rather short-sighted endeavor. I argue that we need to look closer into how specific platform features, and their configurations, enable or constrain particular democratic processes.

This is no doubt a titanic task, complicated by difficulties in acquiring and interpreting social media data. The analyses included in this dissertation are limited by factors that arise precisely from these challenges. One limitation is that much of the dissertation's work revolves around descriptive quantitative metrics, rather than qualitative content analysis. Scholars should, in future work, try to categorize the issue content and sentiment of citizens' political expressions and examine their links to particular features of a platform's architecture. In Chapter 4, I have provided an extensive rubric of platform features to test, as well as highlighted promising empirical avenues for doing so. Another limitation is that in much of the dissertation, citizens' posts are viewed in relative isolation, rather than part of a larger conversation. Future research should aim to disentangle how different discussion dynamics, such as the number of commenters or their previous commenting patterns, influences the tone or deliberative quality of online conversation. Here, attention should be paid to platforms' digital architectures, in order to conceptually relate the content of a conversation to the digital space that it occurs within.

Despite these limitations, which are currently being addressed in my ongoing work, this dissertation has outlined a rigorous theoretical approach to study political processes across social media. My aim has been to provide a conceptual lens, accompanied by a vocabulary, for political communication scholars to conduct cross-platform research. Even though digital architectures change rapidly, foundational frameworks can conceptually ground these fast-moving targets. And in doing so, bring them down from the peaks of lofty mountains.

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