Politics in Human Computer Interaction

A literature review on political activism in HCI research and how HCI is used as a tool for

political activism.

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Abstract

This paper examines the literature about the role of human computer interaction (HCI) in political activism and the role of politics in HCI. With the growing body of HCI research that has an activist approach, this work contributes to the political agenda of the fourth wave. Firstly, this paper addresses the literature in HCI where HCI is used as a tool for political activism in the past fifteen years. The article outlines four themes and shows the relevance of HCI as a tool for political activism, consisting of the usage of HCI tools in political activism, the role of hashtag activism and the concerns with HCI for political activism. Additionally, this paper explores literature for HCI research that has a political approach, including the methods, theories and tools that brought the political to HCI fields, the concerns regarding political activist approaches, and the need for accountability. Future research in HCI is advised to investigate the role political activism in the past two years. This paper also highlights that the political approach for research in HCI is an ongoing direction and does not end when this project does.

Keywords: HCI, politics, political activism, activism, social justice

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Introduction

Human computer interaction (HCI) has always been intertwined with the needs and concerns of users in the design of systems (Erickson & McDonald, 2008). The HCI field has been at the forefront of designing, evaluating and shaping the interaction between humans and computers (Harper, 2019). In recent years with mobile phones, technology and the Internet of Things, alongside newer practices, such as participatory design and critical design, HCI has shifted from a predictable and controllable approach towards a more critical, social theoretic approach to interaction design concerns (van House, 2011). However, HCI encompasses much more than designing, evaluating and shaping the interaction between humans and devices. It also involves areas of computer's political, ethical and societal consequences.

Although within HCI, design and technology are often seen as apolitical, Lindtner et al. (2018) argue that they are almost always political. Design has an impact on people's lives, situations and habits and is inescapably political by either strengthening a political agenda through an interface or involving users in participatory design methodology (Kannabiran & Petersen, 2010; Lindtner et al., 2018). Technology is intertwined in global concerns like economic development, social justice and environmental impact, like Facebook having inbuilt political beliefs such as giving only male or female as options in selecting gender (Kannabiran & Petersen, 2010). Over the past decade, HCI research has seen a significant increase in research towards politics, political activism and social justice (Bardzell & Bardzell, 2011; Ng et al., 2020). Specific sub-areas within HCI, such as feminism, queer theories, environmental sustainability and postcolonial theories, are rising, as well as topics like climate crisis and #BlackLivesMatter, are giving voice to the elephant in the room that was previously not acknowledged: politics (Bardzell & Bardzell, 2011).

Political can be broadly defined as the principles relating to or inherent in a sphere of activity, especially when concerned with power and status (Maiden, 2012). Additionally, politics can be defined as "activities aimed at improving someone's status or increasing power within an organization" (Kannabiran & Petersen, 2010). Research that is politically oriented has, until recently, faced many challenges, such as gaining recognition from peers and being critiqued negatively by technology and design researchers (Light, 2011). After the shift in focus between the second and third HCI waves, it is implicated to extend the existing political consciousness into the human-computer interaction, putting forward an agenda that is extending political sensibility.

Interaction with digital devices has become deeply embedded in our daily lives (Light, 2011). Since 2005, the year that marked the birth of various social networking sites (SNS), such as Facebook and YouTube, these new technologies have changed the way humans handle everyday interactions with technology. From social media platforms to the Internet of Things, interactive technologies have seen growth in their impact, globalisation and political stance (Sandoval-Almazan & Ramon Gil-Garcia, 2014). For long, design and technology have had a stance of being politically neutral (Lindtner et al., 2018). However, with new mass surveillance, privacy violations and political campaigns based on disinformation, it has become increasingly difficult to continue to say that technology is politically neutral (Lindtner et al., 2018; Harper, 2019).

New web technologies have empowered users with a complementary tool for social protest and political activism (Sandoval-Almazan & Ramon Gil-Garcia, 2014). Activism refers to political activities, usually organised by a community of people who share the same views,

that embrace one goal: protesting for their rights and beliefs (Bates et al., 2018; Sandoval-Almazan & Ramon Gil-Garcia, 2014). The past 15 years saw the rise of political activism with the creation of SNS and the digitalisation of protests. For example, during the #MeToo movement, Twitter had a crucial role in mobilizing the global movement and appealing to the usage of hashtags, also known as hashtag activism, in the users (Xiong et al., 2019). In the same way as the #MeToo movement, the School Strike 4 Climate used the power of social media to empower users and digitalize the protest (Boulianne et al., 2020).

Politics and activist topics have not been a central part of HCI research. Although research has been diversified and increased in recent years, politics have not been at the forefront of this research until recently (Bardzell & Bardzell, 2011; Lindtner et al., 2018). The past 15 years, from 2005 to 2020, contain inventions and movements that contributed to the shift in HCI research towards a more societal, critical approach (van House, 2011). The past two decades also saw the rise of political activism with the creation of SNS and the digitalisation of protests. (Xiong et al., 2019).

To contribute to an understanding of how politics have manifested within HCI research, an extensive literature review is presented. The primary purpose of this study is to document the current state of the literature on political activism in HCI. In addition, this study provides an overview over the past 15 years of politics and how this has manifested in the field of HCI. Accordingly, the research question that guides this literature review is "*How has politics manifested in the HCI field over the past 15 years, and how has HCI been used as a tool for political activism?*"

Theoretical framework

Human Computer Interaction

HCI is a term often used to refer to the design of tools that support human activity and interaction with computers in many ways. As a field, HCI was established by Card, Newell and Moran in the 1980s (Calero Valdez & Ziefle, 2019). The realization that computers were more than tools and that there was continuous interaction between humans and computers drove the development of this new field in research (Card et al., 1983). A field that combines the computer science and psychology knowledge, focusing on the interaction between the users, the technology and the interface's design (Card et al., 1983, Grawitch et al., 2017).

Since the beginning of the HCI field in the 1980s, approximately forty years ago, three waves in HCI can be identified (Duarte & Baranauskas, 2016). In the first wave, the focus was on human factors and ergonomics, emphasizing practical outcomes more than theoretical concerns (Bødker, 2006). The focus of the second wave increased its emphasis on theory instead of practical results, focusing on the perceived interaction and how the human mind processes information received from the interface (Bødker, 2006). The third wave puts topics such as the researcher's role, culture and values forward, breaking away from traditional 'work-related' interaction and following new interaction possibilities stemming from innovative technologies that started to incorporate into everyday life (Bødker, 2015).

As technology has progressively become a part of everyday life, HCI has evolved from its cognitive science and cognitive psychology foundations to encompass a broader view of human-computer relations. In the past, there were humans and computer systems, and the task was to develop an effective interaction (Bødker, 2015). However, the lines between humans and technology are blurring more and more these days. New technologies such as artificial

intelligence, virtual reality, social robotics and cyber-physical systems are testing the boundaries of where the human ends and technology begins (Whitney et al., 2021). As new technologies arise, new human-computer interactions form, which can challenge developments and shape the field.

One of the challenges in HCI that has been faced recently is the development of the fourth wave. Researchers (Ashby et al., 2019; Frauenberger, 2020; Pradhan, 2021) have established the beginnings of defining the fourth wave. While the third wave of HCI reflected changes in how and where people interacted with computers, together with its critical perspective, the fourth wave of HCI places a greater emphasis on not only the implications of interaction for individuals but also on the political and social justice implications of HCI (Ashby et al., 2019; Comber et al., 2019). The fourth wave presses large scale systemic changes in HCI alongside a shift to 'embrace activism at all levels', defined as a 'primary focus on politics, values and ethics' (Ashby et al., 2019; Comber et al., 2019).

Frauenberger (2020) defines the fourth wave as an 'Entanglement HCI', building on entanglement theories that continue the argument that humans and their objects are ontologically intertwined from the beginning. The Entanglement HCI wave emphasises the need to address ethics, responsibility and accountability in the HCI field, seeing the extent to which society is continuously being shaped by technology (Frauenberger, 2020; Homewood et al., 2020). The Entanglement HCI wave comprehends the entanglement of humans and objects, elevating the role of non-human objects as equal contributors and showing that objects are political actors in and of itself (Frauenberger, 2020; Homewood et al., 2020; Pradhan, 2021). With the fourth wave comes the stance that design and technology are both inheritably political, emphasizing the need to address the politics in HCI (Ashby et al., 2019; Frauenberger, 2020).

Politics

In recent years, development in HCI research can be seen with the continued and growing interest in politics and political activism. Politics in this context do not refer to governance systems and applications or involvement and engagement in some sort of civil society. As Whitney et al. (2021) state, "to define politics, we build on understandings of the political as a struggle to interject new positions or differences into the public sphere, competing with attempts to close down participation to delimited processes or terms of legibility. We also build on theorists who formulate politics as a struggle for power to define social meanings and control or restructure key institutions" (Whitney et al., 2021, p).

The political seen as a struggle to introduce new points of view into the public circle can be applied to the political in HCI. HCI has long had a stance of being apolitical as a field (Whitney et al., 2021; Lindtner et al., 2018). As a result, political approached research was long overlooked, with new theories regarding ecofeminism, social justice and new positions about HCI sustainability not gaining much recognition (Lindtner et al., 2018; Kannabiran & Petersen, 2010). In recent years, social justice-oriented research in HCI has surfaced alongside the beginning of the fourth wave and its political agenda. Social justice refers to the attempt to balance the benefits and burdens of a social system so that they are equally distributed, being a constantly evolving mechanism (Dombrowski et al., 2016). Social justice-oriented research aims to tackle grand-scale problems, such as poverty and sustainability, whilst working against the reproduction of existing inequalities, such as the American society built on white privilege (Dombrowski et al., 2016). Dombrowski et al. (2018) have outlined a social justice orientation design practice, resulting in six design strategies: designing for *transformation, recognition, reciprocity, enablement, distribution* and *accountability.* They stated that committing and

engaging with *a* personal political stance is essential for social justice-oriented research, as it can

be examined how personal politics influence the research Dombrowski et al., 2016).

Historically, objectivity has been regarded as the standard in academic research (Michie

et al., 2018). However, when research enters highly politicized domains, the distinction between

academic and activist gets more blurred (Strohmayer et al., 2020). This is obvious in HCI, as

evidenced by the political and unionized roots of the Scandinavian Participatory Design, the

establishment of feminist HCI or HCI's prominent past of 'design for democracy,' which focuses

on how technology can redesign users' participation and the distribution of public services

(Michie et al., 2018; Rhode, 2011). These days, many academics reject the idea that researchers

should, or even can, stay unbiased and apolitical. HCI as a field has been increasingly bringing

the political agenda forwards, emphasizing that political, economic and social contexts play a

critical role in shaping the experiences and interactions with design and technologies.

HCI as a tool for political activism

Technology has long been used as a tool for political activism (Rho & Mazmanian,

2020). Although many early 21st century protests such as the Iraq war protest and the Algerian

Black Spring protests were held solely offline, technology has played an important part in

mobilizing the protesters (Sandoval-Almazan & Ramon Gil-Garcia, 2014). One of the most

famous examples is the online group Anonymous and their government protests through

hacking. Social movements have long seen the potential in the use of technology (Sandoval-

Almazan & Ramon Gil-Garcia, 2014). With the digitalisation of protests, mainly by the use of

social networking sites, a new wave of political activism has risen in recent years: online

political activism (Blühdorn & Deflorian, 2021). Following the 2015 European refugee crisis and

the 2016 US presidential elections, alongside the wake of new climate movements and COVID-19 protests against government policies, online political activism has never been more present (Dean, 2020).

A group of people who share beliefs and act together in order to achieve a common goal can be seen as activism (Blühdorn & Deflorian, 2021). Activism is usually focused on environmental, social, political, or economic change, and elections, protests, marches and other political activities can all be examples of political activism (Blühdorn & Deflorian, 2021; Sandoval-Almazan & Ramon Gil-Garcia, 2014). Political protests were raised when democratic governments started offering their citizens ways to demand their rights (Sandoval-Almazan & Ramon Gil-Garcia, 2014). Throughout the 20th century, many protests, including the fall of the Berlin Wall (1989) and the Tiananmen Square protest (1989), took place before the emergence of the internet, using traditional technologies such as radio, newspapers and telephones (Sandoval-Almazan & Ramon Gil-Garcia, 2014).

Online media has shaped the political activism landscape, becoming one of the most important tools in political movements (Blühdorn & Deflorian, 2021; Semaan et al., 2015). Social media, in particular, has contributed to the spread of political protests, demonstrating that the movements spill over from online media to offline protests on the streets (Semaan et al., 2015). Online media has facilitated the mobilization of social movements, broadening the participation in political discourse and activism. Crivellaro et al. (2014) describe social networking sites as the technology where social, economic and political discourse evolve, saying that political activism has been embedded into everyday life. With digital technologies, everyday political talk has extended beyond a person's own social circles and geographical boundaries

(Crivellaro et al., 2014). Alongside digital political discourse, political activism has become rooted in the interaction between technology and its users.

As political activism is now deeply intertwined with SNS, much HCI research has focused on social media interaction and political activism. Social media interaction refers to studying of 'what people do on social media and the effects of it' (Shibuya et al., 2021). Social media interaction and political discourse are forming a "sprawling public sphere", emphasizing the spread of the discourse and activism across numerous online spaces, for example, Dimond et al.'s (2013) Hollaback platform or Semaan et al.'s (2015) political interaction engaging tool *Poli*. HCI here plays the role of bridging the interaction between the users (i.e. political activists) and the technology (i.e. Hollaback), providing the necessary tools for political activism.

Whilst much research has been done to observe how social movements use digital technology, and other academics have investigated how designers can actively support activist approaches in order to more efficiently and appropriately design technology that is built better, a gap in the literature can be found. The majority of HCI literature evaluations concentrate on data-collection methods, design approaches or specific user groups. They do not, however, relate their reviews to the area of HCI's interaction role within political activism, nor do they contribute to a broader assessment of the growth of the HCI field into the fourth wave of HCI. This paper aims to fill this knowledge gap. As HCI research is establishing itself in the fourth wave, addressing the current state of political activism in the field is necessary as politics are already deeply intertwined in HCI.

Methodology

This research reports on a qualitative narrative literature review. A literature review summarises and evaluates the available literature of a subject, resulting in a comprehensive summary of the previous research. This particular literature review aims to track the politics in HCI over the years 2005 to 2020. Figure 1 shows that there has been a growth in papers the topic politics in the HCI field over the past 15 years. This time span is chosen because firstly, the years 2005 to 2020 contain inventions and movements that contributed to the shift in HCI (van House, 2011). In the past 15 years, political approaches in HCI have become more common (Bardzell and Bardzell, 2018; Keyes et al., 2019.) Secondly, the past 15 years also saw the rise of political activism with the creation of online political activism and its social media interaction alongside the digitalisation of protests.

Figure 1

An overview of papers with the topics 'political activism' and 'HCI'
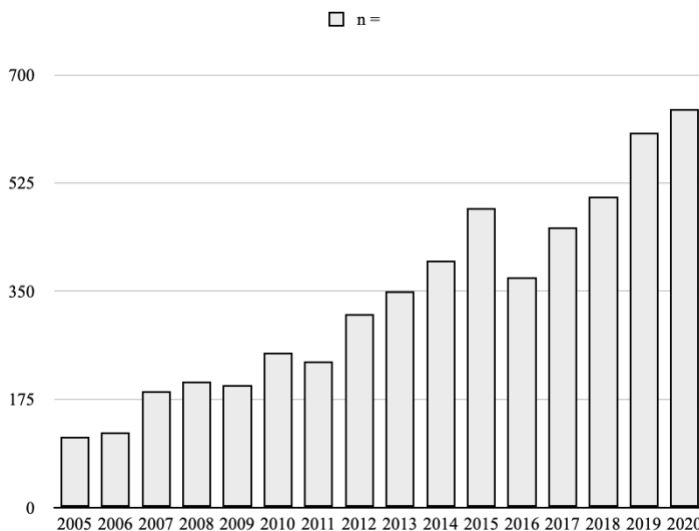
Literature selection

The literature selection was made via retrieving papers from databases and selecting admissible articles for the literature review. The purpose of this literature reviews is to track politics in HCI context. All the articles were retrieved from the ACM Digital Library based on the time period ranging from 2005 to 2020, and the papers were sought accordingly. The criteria for this paper are shown in Table 1. The search keywords for retrieving the papers are based on the areas of interest in this paper: 'politics', 'activism', 'social' and 'HCI'. Other search strategies included keyword combinations: 'HCI and politics', 'HCI and political activism', and 'HCI and social justice'. A mix of the keywords were used to search through the ACM Digital Library in order to find as many relevant articles as possible in the domain. The keywords were searched in both titles, research questions and abstracts. An annotated informative bibliography was made with the usage of Zotero (Zotero, n.d.), in order to summarize the papers that were qualified and to guide the data extraction process.

Table 1

An overview of the inclusion and exclusion criteria

Inclusion and exclusion criteria.	
Inclusion criteria	- Available as full-text - Written in English - Related to the research question - Published in the ACM library - Published between 2005 and 2020
Exclusion criteria	Studies that are relevant but could not be accessed - Not written in English - Were not related to the research question - Published outside the time frame - Short articles (<4 pages)

Thematic analysis

The collected data from the papers were analysed through a thematic analysis. The six phases of conducting a thematic analysis of Braun and Clarke (2006) were applied to guide the process, consisting of (1) familiarizing with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining themes and (6) producing the report. An inductive, semantic and realist approach was used, this approach is a 'bottom-up' approach which is data driven and the themes that are identified are strongly linked to the data itself (Braun and Clarke, 2006). Furthermore, the semantic thematic process involves the organizing and summarizing of the data in order to show patterns in semantic content and an attempt to theorize the significance of the founded patterns and themes. Through phase two, three and four of Braun and Clarke (2006)'s thematic approach, the software application ATALAS.ti (ATLAS.ti, n.d.) was used to identify and code recurring themes that were found in the literature.

Data extraction

After the global search, 1,056 relevant papers were found using keywords or a combination of the keywords. After applying the inclusion criteria, 256 papers remained. Furthermore, the abstracts and keywords were examined to determine whether an article was relevant for the review, short papers such as workshops and panels were also removed, resulting in a remaining 80 papers. Furthermore, the corpus was split into two subsets: (1) the role of HCI in political activism: the rise of political activism that uses HCI designs and applications as a tool and (2) the political activism in HCI: the presence of political activism in the design and approach of the field itself.

Results

A total of 80 papers were analyzed; afterwards, all papers were put into one of two subsets. In two cases, the articles were deemed fitted into both categories and were thus added to both subsets. The role of HCI in political activism is the first subset, consisting of 41 papers. The activism in HCI is the second subset, consisting of 39 articles. All articles were either journal articles or conference papers. The following sections describe the themes which resulted from the analysis, categorized in the two subsets: "the role of HCI in political activism" and "political activism in HCI".

The role of HCI in political activism

Of the overall 80 articles reviewed for this paper, 41 were ranked relevant under the umbrella category 'HCI as a tool for political activism.' 31 articles were research articles, four as opinion pieces, four as reviews and two reports (Appendix II). Of the 40 papers reviewed, most papers were case studies or reviews surrounding political discourse, content, activity or interventions, with the most frequently studied platform being Twitter. Overlapping limitations in these studies were the complexity of social media platforms whilst interpreting the data gathered from these. Most reviewed publications discussed the potential uses of, in particular, SNS for political activism, citing the rapidly changing environment of SNS and the change in the way users seek out political discourse and activism. Four themes were extracted from the data set, consisting of the following:

Table 2

Themes identified in the literature review on the role of HCI in political activism

Themes	Frequency
1. The current uses of HCI in political activism	36
2. New forms of political activism: Hashtag-activism and Slacktivism	18

| 3. The intertwinement of personal and political | 15 |
| 4. C4. Long-term effects and privacy concerns | 7 |

1. The current uses of HCI in political activism

There was a significant overlap in articles describing the current uses of HCI for political activism, with the most used and researched applications being SNS. Users' political usage of SNS has shifted dramatically in the past 15 years, and this fundamental shift can be seen in the literature. With the quick emerge of social media, theories, models and methods that relied on traditional media and its slower pace challenged the field, whilst simultaneously the opportunity to gather large data from SNS provided researchers with new data methods and tools (Jost et al., 2018; Skoric et al., 2011). Emerging from these opportunities, an increasing amount of research papers in the literature has a methodology surrounding data gathered through online media (Jost et al., 2018).

In the years 2005 till 2008, when social media was not yet invented and commonly used, research focused mostly on other forms of online communication such as email, Blogs and games. For example, the usage of an activist design approach in creating games that facilitate political discourse (Flanagan and Nissenbaum, 2007). Whilst blogs and email still remain a part of current research areas; online media-oriented research holds the majority in HCI research for political activism.

Directions in HCI research for political activism deviate drastically from behavioral patterns such as the echo-chamber effect and hashtag activism to the long-term effects of social media interaction resulting in hashtag fatigue and Slacktivism (Booten, 2016; Lee and Heish, 2013; Rotman et al., 2011). Other researchers have focused more on tools and methods, such as the aspect of storytelling in social movements and privacy-ensuring tools for users (Li, 2018;

Michie et al., 2018; Tadic et al., 2018). In one study, Michie et al. (2018) found that by using

storytelling in digital political activism, awareness can be raised by creating empathy and

community feeling. Another study by Booten (2016) described the newly named term *hashtag*

drift, highlighting that users may develop their own personal connections through hashtag

activism. These uses of HCI emphasize the broad role HCI plays in current political activism.

The premise of this research is that while technology cannot facilitate social change by

itself, it can enhance such processes. Thus, research has aimed to get a better understanding of

how and why users become political activists and the tools that bring users together and form

these political communities and social movements.

2. New forms of political activism: Hashtag-activism and slacktivism

While political activism has long been formed, thee landscape has shaped drastically with

new technology and social media interaction. With the creation of social media and the rise of

everyday political activism, two new forms of political activism can be distinguished from the

literature in the past 15 years. The two new most frequent forms that stemmed from the literature

are described in the subsections below.

2.1. Hashtag activism

Firstly, hashtag activism: the development of many SNS posts under a common hashtag

in the pursuit of a specific political topic (Irannejad Bisafar et al., 2020). The usage of viral

political hashtags in article headlines or subheadings is one of the most common elements of

digital political activism, specifically within the realm of social media. This can be seen in the

research after 2008 when popular SNS platforms such as Twitter and Instagram were launched.

It is becoming increasingly impossible to find a protest or social movements on SNS that does not have its own distinguishing hashtag that users can repost and reuse.

Many hashtag-activism related types of researches have focused primarily on the method and context of hashtag development through a significant social movement (Mahoney et al. 2016; Pierre, 2019), whilst others focused on the numerous components of well-known hashtags such as #BlackLivesMatter, and the identities and communities built around (Grevet et al., 2014; Kim and Chen, 2017; Mueller et al., 2020). The use of political hashtags can invite the audience to participate in the social movement, forming communities of discussion and unity. (Irannejad Bisafar et al., 2020; Rho and Mazmanian, 2020; Zaber et al, 2017). Hashtag activism shows its effect in mobilizing online and offline actions, raising awareness and political discourse with the use of the hashtag (Mueller et al., 2020; Stewart et al., 2017). One example is #MeToo, a hashtag that is now referenced in any online content surrounding violence and harassment against women (Mueller et al., 2020).

While various offline activities (such as community gatherings) surely contribute to political activism, hashtag activism can help to cross geographical gaps and raise one unified voice online (Zaber et al., 2017). For example, in the study of Zaber et al. (2017), the use of hashtag activism helped the rural communities in Bangladesh that are hugely affected by riverbank erosion as a cause of climate change. These communities would not have an online voice if it were not for social media's hashtag activism, providing the utility of hashtag activism in raising political issues.

2.2 Online activism only and slacktivism

The concept of slacktivism strikes a somewhat somber note in regards to the positive depictions of political activism and hashtag activism. Slacktivism, the practice of supporting a

political or social cause with very little effort or commitment, such as only re-tweeting a political message, is seen as a low-cost and low-effective route to political activism (Lee and Hsieh, 2013; Simpson, 2018). Slacktivism raises many concerns as researchers argue that these forms of activism substitute greater user actions such as protests. Research by Lee and Hsieh (2013) found that users inner urge to act can be satisfied by Slacktivism by merely making the users feel good about themselves.

Slacktivism is often met with a lot of criticism, even though some researchers illustrate its potential (Lee and Hsieh, 2013; Li, 2018). Li (2018) describes slacktivism as an 'initial step to the further involvement in a social movement' and positively correlated to offline activism. Li (2018) further investigated the valuable aspect of online and offline physical presence at social protests or marches, stating that 'putting your body on the line' is still seen as the most impactful approach in political activism, expressing that online presence only and Slacktivism still have a long way to go. Political activism online may potentially have a detrimental influence on future political involvement, according to Lee and Hsieh (2013), because doing a good deed that involves little effort (i.e. reposting one political message) may be an excuse not to undertake more effortful activities (i.e. attending an offline protest).

3. The intertwinement of personal and political

There was a significant overlap in articles from the corpus describing the rise in online political activism, particularly its everyday usage by users. Highlighting the critical part that social media and interactive systems play in shaping the everyday political discourse. As online media and interactive technologies have integrated into our daily lives, much of our social discourse has been transferred to a digital medium, including users' political discourse. Various

tools in specific social media are used to reinforce the everyday political discourse, providing

users with 24-hour political information when, where and how they want it. A large percentage

of the literature in HCI emphasizes the reach and engagement of these tools, arguing that people

or groups from difficult to reach areas through traditional media (due to geographical isolation or

other societal reasons) can now be targeted and reached. Researchers argue that HCI has

provided users with tools to engage in political discourse, online activism and community

building. In turn, these tools have raised massive awareness of particular social movements and

highlighted the social changes these tools can bring.

3.1. Personal becomes political

A notable feature is the intertwinement of personal and political. Many online activists

make little, if any, effort to separate their personal self and political self in their online discourse

(Wulf et al., 2013). Their personal lives are inextricably linked to their lives and their political

involvement, allowing them to connect their personal lives to their political actions in a new

manner (Semaan et al., 2015; Wulf et al., 2013). Although users can use one medium to debate

politics while utilizing another medium to share personal stories, most users have access to the

political and personal discourse in the same medium (Semaan et al., 2015). For example, within

one medium such as Facebook, users can communicate with their friends and family whilst also

being members of political groups where they exchange information and engage in political

activism. HCI technology and social media interaction have caused the personal to become

political.

3.2. Community building

The findings, as mentioned earlier, have already started to outline the community-building aspect in digital political activism. Although political activism has always been rooted in creating communities, digital political activism is expanding from its traditional offline community building into a fusion of both online and offline communities.

Li (2018) describes that by connecting the offline and online aspects of social movements, the visibility of remote or disabled activists could rise, in turn, increasing awareness and discourse. While technology can promote the visibility of remote or disabled participants, offline protesters can increase their sense of community by knowing who is standing with them online. For example, the disability community can benefit greatly from online social movements with the help of new technologies such as video streaming, as shown in Li (2018).

Dimonds' Hollaback! (2013) also examines the role of technology in social justice issues and the creation of communities with it. The practical HCI tool called Hollaback is used for community building among victims of street harassment, showing that tools like Hollaback can make a great difference with individuals and the struggle to bring them together. Thus, technology (and HCI) can play a crucial part in the community bonding aspects of political activism, bringing together people in these newly formed communities and establishing the interactions between them.

3.3. Behavioral changes

Many HCI research on political activism has been into research towards the behavioral changes' political activism, and social media interaction can have on their users. A common raised argument is the lack of specific behavioral evidence indicating that individuals' online

political participation does not directly influence offline political events; they argue that the

social media interaction is neither a crucial nor sufficient enough cause of protest or offline

political activism. Here, the area of concern is the present lack of evidence proving a beneficial

impact on intended behavior changes. As explained previously in this paper, although there is

evidence that these political activism tactics boost social movements reach and sometimes even

the desired social change (Mueller et al., 2020), little evidence links the use of social media

platforms with actual behavioral changes.

However, in the past five years, more evidence has been delivered to support intended

behavioral changes that stem from online political activism (Irannejad Bisafar et al., 2020;

Mueller et al., 2020). One example is the social movement #MeToo and the behavioral changes

it brought along. As described by Mueller et al. (2020), the #MeToo movement has ensured that

nowadays, victims of (sexual) harassment changed their behavior from hiding and being

ashamed to having the courage and empowerment from the movement to stand up to those in

power.

4. Long-term effects and privacy concerns

From the echo-chamber effect to the hashtag fatigue, many researchers have expressed

their concerns with the ever-changing landscape of political activism and its effects (Garimella et

al., 2018; Jost et al., 2018; Rho, 2019; Rho and Mazmanian, 2019). Common concerns raised in

the published literature (Garimella et al., 2018; Jost et al., 2018; Rho, 2019; Rho and

Mazmanian, 2019) relate back to the long-term effects of SNS for political activism. One

concern is the echo-chamber effect: a situation in online media in which users only consume

content that represents the same point of view that the users believe or express (Garimella et al.,

2018; Rho, 2019; Rho and Mazmanian, 2019). This is also referred to as a situation where people

'hear their own voice'. Specifically, events such as the 2016 US presidential elections and the

start of the COVID-19 pandemic in 2020 have raised many concerns regarding the echo-chamber

effects of social media and the long-term effects of this phenomenon (Garimella et al., 2018; Jost

et al., 2018; Rho, 2019; Rho and Mazmanian, 2019).

Research in HCI has long discussed user interfaces that display various information from

diverse perspectives, aiming to influence users to consume information in a more objective

manner. However, these attempts lack the capacity to emphasize the features and negative

impacts of echo chambers, so they may be ineffective in helping users become aware of the echo

chamber effect and alert users who are currently in an echo chamber (Jeon et al., 2020).

Another long-term effect that has been studied by the HCI community is the phenomenon

of hashtag fatigue. With the new form of hashtag activism, as described previously, common

hashtags that are in the pursuit of a specific political topic are now everywhere in online political

discourse (Rho and Mazmanian, 2019; Wulf et al., 2013). The study by Rho and Mazmanian

(2019) describes that politically moderate people are getting turned off by a political hashtag,

showing that users who develop a deeper connection to the hashtag are already prone to engage

with the relevant social issues in the first place.

Long-term effects such as hashtag fatigue and echo-chambering urge HCI to further

expand their knowledge on the effects of online political activism and how HCI can help

improve these effects. One example is the tool ChamberBreaker by Jeon et al. (2020) which aims

to increase users' awareness of echo chamber effects and preemptively respond and alerts users

that are inside an echo chamber. ChamberBreaker is based on the concept: inoculation, heuristics

for judging and gamification, highlighting the design implications in developments for user

interfaces for a political tool (Jeon et al., 2020).

4.1. Care for privacy

Lastly, another emerging concern is based on the ethics and privacy of the users,

specifically in regards to data mining. Emerging from the opportunities that social media

brought, an increasing amount of research papers has a methodology with user data gathered

through online media (Booten, 2016; Irannejad Bisafar et al., 2020; Mahoney et al., 2016;

Stewart et al., 2017). This raises questions surrounding the consent and privacy of the users.

Concerns like these raise the need for methods and tools to gain more insight and

knowledge into the problem. Margetts (2016) argue that the European GDPR, which has been

effective since 2016, is one step in the right direction towards the consent of users. However,

they argue the need for more transparency in HCI research and the need for new tools aimed a

privacy and security concerns. Li (2018) describes that although personal stories can be

extremely powerful in raising awareness of political topic, they can also facilitate new risks such

as trolling and cyberbullying, highlighting the need to implement security and privacy

measurements into technology with a political activist use.

One of these new HCI tools is the prototype CyberActivist, created by Tadic et al. (2018),

aiming to bring awareness to privacy and security concerns. The tool called CyberActivist helps

activists provide privacy and security advice, targeted at activists in countries with a political

conflict or activists who are under dangerous conditions such as armed conflict (Tadic et al.,

2018).

Political activism in HCI

Of the overall 80 papers reviewed for this paper, 39 were deemed relevant under the umbrella category 'political activism of HCI'. Twenty-seven papers were research articles, eight as opinion pieces, four as reports and three as reviews. Of the 42 articles reviewed, the majority of them were case studies surrounding tools and methods about politics in the HCI field. A significant number of papers outlined the challenges in the field and the current state of HCI research with a political approach. Three themes were extracted from the data set, consisting of the following:

Table 3

Themes identified in the literature review on political activism in HCI

Themes	Frequency
1. Collaborative methods, theories and tools: bringing the politics to HCI	28
2. The concerns with activist approaches	14
3. The future: accountability and the need to do better	13

1. Collaborative methods, theories and tools: bringing the politics to HCI

With their 'Politics at the interface: A Foucauldian power analysis', Kannabiran and Petersen (2010) were one of the first researchers that actively attempted a call to action for politics in the HCI community. Kannabiran and Petersen (2010) express the need for a new set of methods, attitudes and approaches in order to analyze and discuss the politics at the interface. As HCI research has long been known for its apolitical stance, Kannabiran and Petersen (2010) marked the start of bringing the political to HCI research.

An overlap in the literature can be seen in the creation of new design practices in HCI, perhaps as a result of Kannabiran and Petersen's (2010) call to action. DiSalvo is one of the first researchers to actively take an activist approach to design (DiSalvo et al., 2014; Michie et al., 2018). By creating the burgeoning areas of 'adversarial' and 'agonistic' design, DiSalvo advocates for HCI to move beyond simply designing for politics and calls for political design that provokes awareness surrounding political and social issues (DiSalvo et al., 2014; Michie et al., 2018). Another design-based method that has been developed is the social justice orientation by Dombrowski et al. (2016) for designing social issues rooted in their political nature. However, some researchers took a different approach. Other researchers took an existing practice or approach. They deliberately brought the politics along, such as the study by Menendez-Blanco et al. (2017), who introduced how critical design can foster cooperative political activism or Ogbonnaya-Ogburu et al. (2020), who adapted the critical race theory for HCI.

HCI research also saw an emergence of critical theoretical approaches brought to HCI, using theories that incorporate cultural, political, and ethical factors, and tools to criticize interaction design and disclose their effects. Theoretic approaches such as Irani's postcolonial HCI (Irani et al., 2010), Bardzell and Bardzell's humanistic HCI (2015), Bardzell's earlier feminist HCI (2011) and Keyes et al.'s (2019) anarchist HCI have gained much recognition in the community. They describe the shift in HCI from a human-centered approach to a more encompassing approach, levelling the role of non-human actors on the same level as human actors and thus, expanding the roles of the designers and technology itself.

1.1. Stimulating diversity and inclusivity through collaborative methods

One topic that can be drawn from the literature is the use of collaborative methods in order to expand diversity and inclusivity in both the community itself as well as its users. In the past 15 years, HCI research saw a rise in new methods focused on its collaborative aspects, with examples being the practice of social justice-oriented design, socially engaged art (SEA), prefigurative design and participatory action design (Asad, 2019; Bilandzic & Venable, 2011; Keyes et al., 2019). An example of a social justice-oriented tool is the Red Umbrella Archive, a hybrid of digital and non-digital interactions that are *"crafted to create a bridge between multi-media activities and collective activism"*, adding to the justice-oriented design practice (Strohmayer, 2020).

One of the more recent methods developed in the HCI community is Ogbonnaya-Ogburu et al.'s (2020) Critical Race Theory for HCI. Ogbonnaya-Ogburu et al.'s (2020) critique the HCI community for its lack of racial diversity and create a theoretical foundation for race-conscious resolutions, both in the community and in research. Ogbonnaya-Ogburu et al. (2020) mention the necessity to conduct research with minority communities and participants as a fundamental guide in design, aiming to overcome institutional and personal barriers.

Most of these methods and practices have common elements of collaborating and diversifying the community. As HCI progressively pursues more and more politically active approaches, these new approaches are valuable to understand the political issues at place and to provide new knowledge for the further development of the field (Asad, 2019; Clarke et al., 2016; Ogbonnaya-Ogburu et al., 2020).

2. The concerns with activist approaches

Designing with an activist approach also raises new concerns. For example, the concern that is highlighted by Marsden and Haag (2016), describing the persona method and its political nature. Marsden and Haag (2016) raise the concern in the practice of the persona method, stating that unfolding biases are inevitable with the lack of critical reflection in the method itself and question whether personas truly help designers.

Another concern is raised by Michie et al. (2018) in their case study regarding reproductive rights for women based on a pro-choice stance as opposed to the other side pro-life. Michie et al. (2018) argue that by conducting the same research with a pro-life perspective, the outcomes and criticisms would have been the same (i.e. a refusal to acknowledge alternate viewpoints with users). They urge the call for HCI to *"consider how we might foster true polyvocality by bringing conflicting voices together in the same space. In a context where false news reigns and opinion is becoming more important than fact, we ask: how can HCI design and deliver technologies that afford dialogue and empathy in contested spaces?"* (Michie et al. 2019, p10).

Semaan et al. (2015) have developed a new tool *Poli* that aims to assist users in engaging in political interaction and to take opposing political viewpoints into account, deliberating on topics via a positive dialogue. The research by Semaan et al. (2015) is one example of how to include conflicting voices into one online space and encourage positive and empathic conversations between the users.

3. The future: the need of doing better

The common factor in the two previously described categories is highlighting the need of the HCI community to take accountability. Researchers urge the need for transformation, shifting HCI's attention from apolitical to political, addressing structural inequities that contribute to social justice and political approaches. As the previously apolitical stance of the field can otherwise be seen as another way of silencing minority and dissenting voices, a shift was needed and is in the last five years being seen in the HCI community (Corbett and Loukissas, 2019; Strohmayer, 2020; Frauenberger, 2020).

3.1. Taking accountability

An overwhelming number of articles in the literature emphasize and imply the future direction that HCI researchers need to take more accountability in their research and community (Corbett & Loukissas, 2019; Ogbonnaya-Ogburu et al., 2020). Accountability describes the method in which we hold those 'who foster or unduly benefit from the oppression of others' responsible (Corbett & Loukissas, 2019). In earlier works (Brigham and Introna, 2007; Dourish, 2010; Masiero and Prakash, 2015), not many researchers describe how the community can take this accountability in order to move beyond the apolitical stance of the field. However, in the past approximately five years, researchers have stepped up and provided steps and solutions in how the HCI community can take responsibility.

Ogbonnaya-Ogburu et al. (2020) argue that the HCI community needs to do better. One solution they propose that is aimed at creating a more diverse community is to track the composition of leadership, community participation, conference attendance and participants pools by race or other minority group categories, since its progress, or lack of must be made

visible in order to hold themselves accountable (Ogbonnaya-Ogburu et al., 2020). Keyes et al. (2019) present an anarchist HCI, outlining principles in order to hold the community, oneself and each other accountable for the impact of their work.

Overall, a majority of researchers that took a political approach to their research argue for the need to do better. Ekbia and Nardi (2016) quoted: *"Theorizing in HCI should not shy away from incorporating politics"*. HCI as a community needs to do better by including design approaches such as critical race theory or feminist design and developing technologies that help minorities and fight oppression.

Discussion

This work contributes to the ongoing literature on politics in HCI by presenting a literature review encompassing the past 15 years. With a shift towards HCI research with a political agenda, it has become even more important to develop a thorough knowledge of HCI's long-term potential and role in creating social change. As the HCI community enters its fourth wave, this paper intends to address the present situation of the political and political activism in the literature, as politics are already profoundly enmeshed in HCI. The resulting topics provide an overview and can be used as a starting point for future research.

In the subcategory of HCI for political activism, there is focus on civil political participation, discourse and activism, highlighting the use of HCI as a tool for activism. Although users are an important and essential group of online political activism, this much can also be said for politicians. Studies focusing on a politician-based orientation and research have shed light on how they use SNS to gain popularity, engagement and interaction with their voters. One example being the study of Fatema et al. (2020), that describes the role of social media

channels and the relationship between politicians and citizens. Other research has focused on the

use of HCI tools in order to urge people to politically vote. As the scope of this paper focused

more on civil political activism, the topic of politicians and voting, alongside their usage of HCI

tools for politics is deemed a valuable addition to the current growing body of political activism

in the realm of HCI.

Although the scope of this paper focusses on the years 2005-2020, it would be valuable

for future studies to research HCI as a tool for political activism in the years 2020 and onwards.

With the sudden emerge of COVID-19 and its protests regarding government policies or the calls

to get vaccinated, social media has played, if possible, an even bigger role in political activism.

As many researchers have already started to outline the ever-changing landscape of social media

in times of the COVID-19 pandemic (Dalsgaard, 2020; Puri et al., 2021), the role of political

activism and HCI cannot be forgotten in this.

Aligning with the previously outlined potential future research direction, concerns

regarding political activism and technology are rising. The consequences of technology for

political activism are getting bigger and with more drastic consequences, as can be seen with the

increase in fake news believability, increasing privacy concerns and far-right movements

overstepping boundaries in democracy (Puri et al., 2021). Although this research, in hindsight,

has a bigger focus on social media interaction in HCI specifically, HCI is much broader and

elaborate that social media interactions and tools for SNS related political activism only. Future

research might shed light on different directions and topics in HCI and political activism.

Keyes et al. (2019) highlight the effects of creating politically correct designs and

technology, stating that by collaborating with a whole lot of different groups of users, the end

results will never be good enough for all groups. Although, methods and tools that are created to

be as inclusive and diverse as possible, are aiming to be politically correct for everyone, they almost always lack in impactful, socially changing solutions. Keyes et al. (2019) further propose the question to the HCI community: *"Which HCI future do researchers want to help build?"*. This questions also leave new questions marks when it comes to political activist approaches in HCI. Is there a chance for HCI, both its research and its tools, to ever be politically correct, and will it ever be good enough? Although this papers intention is not aimed at answering these questions, it is aligning with Keyes et al. (2019) proposed question: "which future do we want to help build?" as addressing the political does not end where the project does.

Limitations

Although this paper provides new insights and an overview into political activism in HCI, a few limitations must be addresses in order to guide future research. Firstly, as this is a Master's thesis, the research was completed by only one person. Therefore, it would be deemed an impossible task to encompass all literature regarding political activism or political activist approaches in HCI. This paper does not aim to report on all of the available literature out there as it was limited by resources for this.

As this research aligns with the political approach of the fourth wave and the by default political nature of the paper itself, it aims to encompass broader view of the political in HCI without interfering much in the political biases of the research itself. However, unintentionally, researcher's biases may have occurred in either the data sourcing process or the interpretation of the sources, biasing towards a perhaps more Western, politically left side point of view. Future studies might ensure new steps or methodology in ensuring the absence of biases.

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Appendices

Appendix I: Data collection of the included papers

COLL2 = Collaborative methods; FUTURE2 = Future of HCI research; CONC2 = concerns with activist approaches; CURR1 =

Current uses of HCI + political activism; FORMS1 = forms of political activism in HCI; INTER1 = intertwining personal and

political; LONG1 = long-term effects.

Auteurs	Year	Title	Source	Type	Thematic tag	Methodology	DOI	Subcategory
Flanagan and Nissenbaum	2007	A Game Design Methodology to Incorporate Social Activist Themes	CHI 2007 Proceedings	Research paper	COLL2	Review + Design practices	https://doi.org/10.1145/1240624.1240654	2
Brigham and Introna	2007	Invoking politics and ethics in the design of information technology: undesigning the design	Ethics and Information Technology	Reserach paper	COLL2	Opinie	https://doi.org/10.1007/s10676-006-9131-1	2

Rönkkö et al.	2008	PD method and socio-political context of the development organization	PDC '08: Proceedings of the Tenth Anniversary Conference on Participatory Design 2008	Research paper	COLL2/FUTURE2	Overview	DOI not available	2
Saeed et al.	2009	Technologies within transnational social activist communities: an ethnographic study of the european social forum	C&T '09: Proceedings of the fourth international conference on Communities and technologies	Research paper	CURR1/FORMS1/INTER1	Review	https://doi.org/10.1145/1556460.1556474	1
Barker et al.	2009	Investigating political and demographic factors in crowd based interfaces	Proceedings of the 21st Annual Conference of the Australian Computer-Human Interaction Special Interest Group	Research paper	COLL2/	Case study	https://doi.org/10.1145/1738826.1738912	2
Nam	2010	New voices or old voices in political talk?	Proceedings of the 4th International Conference on Theory and Practice of Electronic Governance - ICEGOV '10	Reserach paper	CURR1/INTER1	Case study + review	https://doi.org/10.1145/1930321.1930386	1

Nam	2010	Who are political users of the Internet?: an empirical study of the democratic divide	dg.o '10: Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online	Research paper	CURR1/INTER1	Case study		1
Dourish	2010	HCI and environmental sustainability: the politics of design and the design of politics	Proceedings of the 8th ACM Conference on Designing Interactive Systems	Research paper	CONC2/FUTURE2	Review	https://doi.org/10.1145/1858171.1858173	2
Munson and Resnick	2010	Presenting diverse political opinions: how and how much	Proceedings of the SIGCHI Conference on Human Factors in Computing Systems	Research paper	CONC2	Case study	https://doi.org/10.1145/1753326.1753543	2
Kannabiran and Petersen	2010	Politics at the interface: a Foucauldian power analysis	NordiCHI '10: Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries	Short paper	COLL2/CONC2/FUTURE2	Review, opinie	https://doi.org/10.1145/1868914.1869007	2
Bardzell	2010	Feminist HCI: taking stock and outlining an agenda for design	CHI '10: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems	Research paper	COLL2/CONC2/FUTURE2	Review	https://doi.org/10.1145/1753326.1753521	2

DiSalo et al.	2010	Mapping the landscape of sustainable HCI	Proceedings of the 28th international conference on Human factors in computing systems - CHI '10	Research paper	COLL2/CONC2/FUTURE2	Review	DOI: 10.1145/1753326.1753625	2
Rotman et al.	2011	"From slacktivism to activism: Participatory culture in the age of social media"	DBLP	Conference paper	CURR1/FORMS1/LONG1	Case study	DOI: 10.1145/1979742.1979543	1
Skoric et al.	2011	Online Organization of an Offline Protest: From Social to Traditional Media and Back	44th Hawaii International Conference on System Sciences	Research article	CURR1	Case study / interview	DOI: 10.1109/HICSS.2011.330	1
Bardzell and Bardzell	2011	Towards a feminist HCI methodology: social science, feminism, and HCI	CHI '11: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems	Research paper	COLL2/CONC2/FUTURE2	Review + method	https://doi.org/10.1145/1978942.1979041	2
Lee and Hsieh	2013	Does slacktivism hurt activism?: The effects of moral balancing and consistency in online activism	SIGCHI Conference	Research paper / Conference paper	CURR1/FORMS1	Experiment	DOI: 10.1145/2470654.2470770	1
Wulf et al.	2013	On the ground' in Sidi Bouzid: investigating social media use during the tunisian revolution	CSCW '13: Proceedings of the 2013 conference on Computer supported cooperative work	Research paper	CURR1/INTER1	Case study	https://doi.org/10.1145/2441776.2441935	1

Bastos et al.	2013	Tweeting across hashtags: overlapping users and the importance of language, topics, and politics	HT '13: Proceedings of the 24th ACM Conference on Hypertext and Social Media	Research paper	CURR1/FORMS1	Case study and analysis	https://doi.org/10.1145/2481492.2481510	1
Dimond et al.	2013	Hollaback!: the role of storytelling online in a social movement organization	Proceedings of the 2013 conference on Computer supported cooperative work - CSCW '13	Research paper	COLL2/FUTURE2	Case study	https://doi.org/10.1145/2441776.2441831	2
Grevet et al.	2014	Managing political differences in social media	Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing	Research paper	CURR1/LONG1	Survey + interview	https://doi.org/10.1145/2531602.2531676	1
Sandoval-Almazan and Gil-Garcia	2014	Towards cyberactivism 2.0? Understanding the use of social media and other information technologies for political activism and social movements	Government Information Quarterly	Research paper	CURR1/FORMS1	Review + method	http://dx.doi.org/10.1016/j.giq.2013.10.016	1
Crivellaro et al.	2014	A pool of dreams: facebook, politics and the emergence of a social movement	Proceedings of the SIGCHI Conference on Human Factors in Computing System	Reserach paper	CONC2	Content analysis / review	https://doi.org/10.1145/2556288.2557100	2
Clarke et al.	2014	Socially engaged arts practice in HCI	CHI '14 Extended Abstracts on Human Factors in Computing Systems	Short paper	COLL2/CONC2	Review, opinie	https://doi.org/10.1145/2559206.2559227	2

Knowles et al.	2014	Rethinking plan A for sustainable HCI	Proceedings of the SIGCHI Conference on Human Factors in Computing Systems	Research paper	COLL2/CONC2	Review + method	DOI: 10.1145/2556288.2557311	2
Soares and Joia	2015	The Influence of Social Media on Social Movements: An Exploratory Conceptual Model	Electronic Participation	Research article / review	CURR1/FORMS1	Review	DOI: 10.1007/978-3-319-22500-5_3	1
Huang et al.	2015	How Activists Are Both Born and Made: An Analysis of Users on Change.org	Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems	Research paper	INTER1	Analysis + interview	http://dx.doi.org/10.1145/2702123.2702559	1
Semaan et al.	2015	Designing Political Deliberation Environments to Support Interactions in the Public Sphere	CHI '15: Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems	Research paper	CURR1/LONG1	New tool	https://doi.org/10.1145/2702123.2702403	1
Brooker et al.	2015	Debating Poverty Porn on Twitter: Social Media as a Place for Everyday Socio-Political Talk	Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems	Research paper	CURR1/INTER1	Case study	https://dl.acm.org/doi/10.1145/2702123.2702291	1
Ekbia and Nardi	2015	The political economy of computing: the elephant in the HCI room	Interaction	Research paper	COLL2/CONC2/FUTURE2	Opinie	https://doi.org/10.1145/2832117	2

Masiero and Prakash	2015	The politics of anti-poverty artefacts: lessons from the computerization of the food security system in Karnataka	Proceedings of the Seventh International Conference on Information and Communication Technologies and Development	Research paper	CONC2	Case study + review	https://doi.org/10.1145/2737856.2738011	2
Obrenovic	2015	Design as a political activity: borrowing from classical political theories	Interactions	Column	COLL2	Opinie	https://doi.org/10.1145/2832903	2
Balestrini et al.	2015	Civically engaged HCI: tensions between novelty and social impact	British HCI '15: Proceedings of the 2015 British HCI Conference	Column	COLL2/CONC2	Review, opinie	https://doi.org/10.1145/2783446.2783590	2
Mahoney et al.	2016	Constructing the Visual Online Political Self: An Analysis of Instagram Use by the Scottish Electorate	Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems	Research paper	CURR1/FORMS1/INTER1	Analysis	DOI: http://dx.doi.org/10.1145/2858036.2858160	1
Gorkovenko and Taylor	2016	Politics at Home: Second Screen Behaviours and Motivations During TV Debates	NordiCHI '16: Proceedings of the 9th Nordic Conference on Human-Computer Interaction	Research paper	INTER1	Case study	https://doi.org/10.1145/2971485.2971514	1
Margetts	2016	Understanding Political Turbulence: The Data Science of Politics	Proceedings of the 8th ACM Conference on Web Science		CURR1/LONG1	Case study	DOI: http://dx.doi.org/10.1145/2908131.2908136	1

Booten	2016	Hashtag drift: Tracing the evolving uses of political hashtags over time	Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems	Research paper	CURR1/FORMS1	Case study	DOI: 10.1145/2858036.2858398	1
Dombrowski et al.	2016	Social Justice-Oriented Interaction Design: Outlining Key Design Strategies and Commitments	Proceedings of the 2016 ACM Conference on Designing Interactive Systems	Research paper	COLL2/FUTURE2	Review + theory	https://doi.org/10.1145/2901790.2901861	2
Clarke et al.	2016	Situated Encounters with Socially Engaged Art in Community-based Design	DIS '16: Proceedings of the 2016 ACM Conference on Designing Interactive Systems	Research article	COLL2/CONC2	Case study, Review, opinie	https://doi.org/10.1145/2901790.2901882	2
Marsden and Haag	2016	Stereotypes and Politics: Reflections on Personas	CHI '16: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems	Research paper	CONC2/FUTURE2	Review + interview	https://doi.org/10.1145/2858036.2858151	2
Ekbia and Nardi	2016	Social Inequality and HCI: The View from Political Economy	CHI '16: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems	Research paper	COLL2/CONC2	Review + opinie	https://doi.org/10.1145/2858036.2858343	2

Stewart et al.	2017	Drawing the Lines of Contention: Networked Frame Contests Within #BlackLivesMatter Discourse	Proceedings of the ACM on Human-Computer Interaction	Research paper	CURR1	Case study		1
Kim and Chen	2017	Social Media and Online Political Participation of Citizens		Reserach paper	CURR1/INTER1	Review		1
Wang and Mark	2017	Engaging with Political and Social Issues on Facebook in College Life	Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing	Research paper	CURR1/INTER1	Case study + interview	https://doi.org/10.1145/2998181.2998295	1
Zaber et al/	2017	A Study of Hashtag Activism for Raising Awareness about Riverbank Erosion in Bangladesh	Proceedings of LIMITS '17	Research paper	CURR1/FORMS1	Case study	http://dx.doi.org/10.1145/3080556.3080557	1
Simpson	2018	Integrated & Alone: The Use of Hashtags in Twitter Social Activism	ACM Conference on Computer Supported Cooperative Work and Social Computing	Conference paper	FORMS1		https://doi.org/10.1145/3272973.3274089	1
Irannejad Bisafar et al.,	2018	Social Computing-Driven Activism in Youth Empowerment Organizations: Challenges and Opportunities	CHI '18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems	Research paper	CURR1/FORMS1/INTER1	Case study + review	https://doi.org/10.1145/3173574.3173757	1

Li et al.	2018	Slacktivists or Activists?: Identity Work in the Virtual Disability March	Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems	Research paper	CURR1/FORMS1/INTER1	Case study / interview	https://doi.org/10.1145/3173574.3173799	1
Penney	2018	Young People as Political Influencers on Social Media: Skepticism and Network Thinking	SMSociety '18: Proceedings of the 9th International Conference on Social Media and Society	Short paper	INTER1	Focus group	https://doi.org/10.1145/3217804.3217944	1
Soares et al.	2018	Influencers in Polarized Political Networks on Twitter	SMSociety '18: Proceedings of the 9th International Conference on Social Media and Society	Research paper	CURR1/INTER1	Analysis	https://doi.org/10.1145/3217804.3217909	1
Garimella et al.	2018	Political Discourse on Social Media: Echo Chambers, Gatekeepers, and the Price of Bipartisanship	WWW '18: Proceedings of the 2018 World Wide Web Conference	Research paper	CURR1/LONG1	Analysis	https://doi.org/10.1145/3178876.3186139	1
Jost et al.	2018	How Social Media Facilitates Political Protest: Information, Motivation, and Social Networks	Advances in Political Psychology	Research paper	CURR1/FORMS1/LONG1	Review	doi: 10.1111/pops.12478	1
Pihkala and Karasti	2018	Politics of mattering in the practices of participatory design	PDC '18: Proceedings of the 15th Participatory Design Conference: Short Papers, Situated Actions, Workshops and Tutorial	Short paper	COLL2/CONC2	Review, opinie	https://doi.org/10.1145/3210604.3210616	2

Lidtner et al.	2018	Design and Intervention in the Age of "No Alternative"	Proceedings of the ACM on Human-Computer Interaction	Research paper	COLL2/CONC2/FUTURE2	Review	https://doi.org/10.1145/3274378	2
Baker and Karasti	2018	Data care and its politics: designing for local collective data management as a neglected thing	PDC '18: Proceedings of the 15th Participatory Design Conference	Research paper	CONC2		https://doi.org/10.1145/3210586.3210587	2
Lindtner et al.	2018	Design and Intervention in the Age of "No Alternative"	Proceedings of the ACM on Human-Computer Interaction	Research paper	COLL2/CONC2/FUTURE2	Review + opinie	https://dl.acm.org/doi/10.1145/3274378	2
Michie et al.	2018	From her story, to our story: Digital storytelling as public engagement around abortion rights advocacy in ireland	Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems	Research paper	CURR1/LONG1 COLL2/CONC2/FUTURE2	Case study	https://doi.org/10.1145/3173574.3173931	1. 2
Pierre	2019	Putting the "Move" in Social Movements: Assessing the Role of Kama Muta in Online Activism	Information in Contemporary Society	Research article	CURR1	content analysis	https://doi.org/10.1007/978-3-030-15742-5_35	1
Rho and Mazmanian	2019	Hashtag Burnout? A Control Experiment Investigating How Political Hashtags Shape Reactions to News Content	Proceedings of the ACM on Human-Computer Interaction	Research paper	CURR1/FORMS1	Experiment	https://doi.org/10.1145/3359299	1

Rho	2019	Quality of Democratic Discourse in the Age of Political Hashtags and Social Media News Consumption	Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing	Research paper	CURR1/FORMS1	Analysis	https://doi.org/10.1145/3311957.3361852	1
Gorkovenko and Taylor	2019	Audience and Expert Perspectives on Second Screen Engagement with Political Debates	Proceedings of the 2019 ACM International Conference on Interactive Experiences for TV and Online Video	Research paper	INTER1	Interview + design method	https://doi.org/10.1145/3317697.3323352	1
Usher et al.	2019	The Political Power of Twitter	WI '19: IEEE/WIC/ACM International Conference on Web Intelligence	Research paper	CURR1/FORMS1	Case study	https://doi.org/10.1145/3350546.3352541	1
Asad	2019	Prefigurative Design as a Method for Research Justice	Proceedings of the ACM on Human-Computer Interaction	Research paper	COLL2FUTURE2	Review + opinie	https://doi.org/10.1145/3359302	2
Matos et al.	2019	Youth, Politics & Civic Participation: the 'Manifesto Machine'	Proceedings of the 9th International Conference on Communities & Technologies - Transforming Communities	Research paper	COLL2/CONC2/FUTURE2	Workshop / review		2

Keyes et al.	2019	Human-Computer Insurrection: Notes on an Anarchist HCI	Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems	Research paper	COLL2/CONC2/FUTURE2	Review + method	https://doi.org/10.1145/3290605.3300569	2
Rho and Mazmanian	2020	Political Hashtags & the Lost Art of Democratic Discourse	Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems	Research paper	CURR1/FORMS1/INTER1/LONG1	Experiment	Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems	1
Mueller et al.	2020	Demographic Representation and Collective Storytelling in the Me Too Twitter Hashtag Activism Movement	Proceedings of the ACM on Human-Computer Interaction	Research paper	CURR1/FORMS1/INTER1	Content Analysis	https://doi.org/10.1145/3449181	1
Siddarth and Pal	2020	Engaging the Crowd: Social Movement Building via Online Bystander Mobilization	Proceedings of the 2020 International Conference on Information and Communication Technologies and Development	Research paper	CURR1/INTER1	Case study + interview	https://doi.org/10.1145/3392561.3394633	1
Irannejad Bisafar et al.	2020	Supporting Youth Activists' Strategic Use of Social Media: A Qualitative Investigation of Design Opportunities	Proceedings of the ACM on Human-Computer Interaction	Research paper	CURR1/FORMS1	Case study / interview	https://doi.org/10.1145/3415180	1

Ogbonnaya-Ogburu et al.	2020	Critical Race Theory for HCI	CHI '20: Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems	Research paper	COLL2/CONC2/FUTURE2	Review + method	https://doi.org/10.1145/3313831.3376392	2
Moore	2020	Towards a more representative politics in the ethics of computer science	Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency	Research paper	COLL2/CONC2	Review, opinie	https://doi.org/10.1145/3351095.3372854	2
Lerner et al.	2020	Privacy and Activism in the Transgender Community	Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems	Research paper	COLL2/CONC2/FUTURE2		https://doi.org/10.1145/3313831.3376339	2
D'Ignazio et al.	2020	"The Personal is Political": Hackathons as Feminist Consciousness Raising	Proceedings of the ACM on Human-Computer Interaction	Research paper	COLL2//FUTURE2	Case study + interview	https://doi.org/10.1145/3415221	2
Cheek	2020	Political technical communication and ideographic communication design in a pre-digital congressional campaign	Communication Design Quarterly	Research paper	COLL2	Review, opinie	https://doi.org/10.1145/3431932.3431933	2
Almeida et al	2020	Introduction to the Special Issue on HCI and the Body: Reimagining Women's Health	ACM Transactions on Computer-Human Interaction	Special Issue	COLL2/CONC2/FUTURE2	Review, opinie	https://doi.org/10.1145/3406091	2

Krafft	2020	An Action-Oriented AI Policy Toolkit for Technology Audits by Community Advocates and Activists	FAccT '21: Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency	Research paper	COLL2/CONC2/FUTURE2	Method and review	https://doi.org/10.1145/3442188.3445938	2
Gautam and Tatar	2020	p for political: Participation Without Agency Is Not Enough	PDC '20: Proceedings of the 16th Participatory Design Conference 2020	Research paper	CONC2/FUTURE2	Case study	https://doi.org/10.1145/3384772.3385142	2
Strohmayer et al.	2020	"We come together as one...and hope for solidarity to live on": On Designing Technologies for Activism and the Commemoration of Lost Lives	DIS '20: Proceedings of the 2020 ACM Designing Interactive Systems Conference	Research paper	COLL2/CONC2/FUTURE2	Case study + review	https://doi.org/10.1145/3357236.3395452	2
Choi et al.	2020	Moving for the Movement: Applying Viewpoints and Composition Techniques to the Design of Online Social Justice Campaigns	DIS '20: Proceedings of the 2020 ACM Designing Interactive Systems Conference	Research paper	COLL2	Review	https://doi.org/10.1145/3357236.3395435	2
Jeon et al.	2020	ChamberBreaker: Mitigating Echo Chamber Effects and Supporting Information Hygiene through a Gamified Inoculation System	Proceedings of the ACM on Human-Computer Interaction	Research paper	CURR1/LONG1	Case study	https://doi.org/10.1145/3479859	1

Tadic et al.	2018	CyberActivist: Tool for raising awareness on privacy and security of social media use for activists	Lecture Notes in Computer Science	Researcph	LONG1	Case study	https://doi.org/10.1007/978-3-319-91521-0_36	1