# Democracy & Education

# **Blended Spaces**

Reimagining Civic Education in a Digital Era

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#### Abstract

While traditional civic education in the United States is inextricably linked to notions of a public sphere, this paper argues that the digital era requires a reimagining of this premise. The opaque nature of digital spaces makes it difficult for young people to understand how large of an audience they are interacting with and to what extent a conversation that may feel private is rebounding across public contexts. In this conceptual paper, we (1) use semiotic squares to present publicly private and privately public as two ways to reinterpret traditional presumptions about the role of "the public" in civic education and (2) present the implications of these blended spaces for civic education and civic learning. The paper asks, what does it mean to prepare young people for interaction in the "public" sphere within our classrooms today? By drawing on a vignette of teacher practice, we articulate what civic education could be for students around the world in the 21st century.

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HEN THE INTERNET became popularized a quarter of a century ago, much ado was made of its ability to connect us in new and innovative ways. Bill Gates (1999) suggested that the internet would become a town square of sorts for a global village, alluding to the ways it would broaden public spaces digitally. At the same time, during a presentation at the Internet World Trade Show in New York City, Eric Schmidt (CEO of Google from 2001 to 2011) claimed that the internet is "the largest experiment in anarchy that we've ever had." These competing notions of how the internet can be used foreshadowed the ways it would complicate how we interact socially and politically. Over time, we did indeed come together as a global community via the internet, but it has also caused the fracturing of democracy in profound ways (see Haidt, 2022). Gone are clear divisions between public actions and private ones, as the

internet publicizes private quibbles as public discourse. To complicate things, adults and young people alike are now fully immersed in digital spaces with little to no training or understanding of their complexities. This paper is an articulation of these challenges, as seen in the context and landscape of the United States, and how they might impact civic education and engagement in online and digital experiences globally.

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Fundamentally, the opaque nature of digital spaces makes it difficult for people to understand the impact (or lack thereof) of their posts and interactions on digital platforms. Young people don't always understand who they are interacting with and to what extent a conversation that may feel private is rebounding across public and global contexts. Truthfully, adults are not much better at assessing whether the internet is a public or private space, but that is largely because the distinction between what is public and private in online spaces is blending. In fact, given the readily available tools for surveilling and preserving online activity (i.e., forwarding screenshots of private information), even things that are kept in seemingly tight-knit and private spaces between individuals may eventually "leak" and become public. Considering that the boundaries of public and private civic life are no longer finite and are malleable by context, technological assets, and time, what does it mean for educators to prepare young people for interaction in "public" spaces? To answer this question, we reinterrogate existing relationships between civic education, civic life, and public spaces in this piece. As a distinction, we refer to public spheres as the place where democracy formally works-where laws and rules of governance are transparent and accountable to the people that are governed by them. We equate this with political participation such as traditional and institutional involvement in politics (i.e., voting, lobbying, etc.). Public spaces, however, are places where open association occurs among individuals and groups as a part of civil society, where people organize, deliberate, and debate in pursuit of common goals. We equate this with civic participation, which has more to do with collective action and community involvement that could (but may not) connect to traditional political acts in the public sphere. There is little doubt that the rise of social media in the digital age is impacting the public sphere in important ways (see Haidt, 2022, for an U.S. example), but in this paper, we focus on its implications for public spaces.

Traditional approaches to civic education in the United States typically begin with an assumption that education provides students with opportunities to engage in public spaces for the sake of the public sphere (i.e., civic engagement in support of political engagement) (e.g., Hess, 2009; Niemi & Junn, 1998; Parker, 2003). These assertions are built on the works of political theorists from Aristotle (1999) to Rawls (2005) to Habermas (1984), who imagine and describe a notion of the public where tenets of reason, equality, and justice are both foundational and aspirational-in other words, they are ambitious requisites that require continuous assemblage and maintenance. Much of the literature on U.S.-based civic education and democratic education focuses on how schooling can support the construction, conservation, or continuation of a public sphere through the bolstering of reason, equality, and justice in public spaces, of which the classroom (and schools by extension) is an example (e.g., Callan, 2004; Campbell, 2008; Costa, 2010; Galston, 2001; Hess & McAvoy, 2014; Parker, 1996).

However, some scholars have bemoaned such dedication to the preservation of utopian public spaces, since they can never truly exist in practice (e.g., Mouffe, 2000; Papacharissi, 2010). Whether because of human nature (e.g., Hobbes, 1994), the unequal distribution of resources (e.g., Callan, 1997), or inherent inequalities built into neo-liberal systems that elevate individualism (e.g., Mouffe, 2000), public spaces will never be as fair or as just as their facsimiles in a classroom (Lo, 2019). This begs the question, what, if not the preservation of a utopian public, should serve as civic education's theoretical starting point? In this conceptual piece, we (1) provide philosophical foundations for public, private, and blended spaces; (2) discuss how digital spaces challenge traditional notions of public spaces; and (3) present areas of future research for civic education in the digital era.

Even though much has been written about digital media literacy, defined as the ability to access, analyze, create, and use digital media (e.g., Kahne et al., 2012; Knobel & Lankshear, 2007) and digital citizenship, defined as the responsible use of technology (e.g., Garcia et al., 2021), civic education in the U.S. continues to struggle with the digitalization (or lack thereof) of civic learning. Specifically, (a) the field is still embedded within traditional conceptions of private and public spaces that does not always translate well into digital spaces (Kahne, Hodgin & Eidman-Aadahl, 2016; Papacharissi, 2010); (b) existing media literacy tools and strategies seem to be outpaced by the shifting digital landscape; and (c) schools and civic learning communities have yet to tackle or address myriad digitally related issues (e.g., privacy, surveillance, etc.) We hope this exploration in the U.S. context provides insights for how civic education can better evolve globally in the digital age.

#### **Private and Public Spaces**

The traditional public is seen as a space where varying perspectives can come to agree on a conception of justice or political issues impacting the whole of society based on reason (e.g., Rawls, 2005). By contrast, the private is a space where individuals go to contend with personal or social matters (e.g., Arendt, 1970). Deliberative scholars like Benhabib (1993) and Fraser (1993) have long argued that discussions about issues of justice in public (as a political act) are essential to the health of a democratic society. Similarly, civic education scholars in the U.S. have followed this line of reasoning to situate the deliberation of issues in public spaces as an integral part of learning how to participate in the public sphere (e.g., Fallace, 2016; Hess, 2009; Parker, 1996). However, others argue that private and public spaces have always been and continue to be blurred in a way that makes the distinction untenable (e.g., Arendt, 1958; Mouffe, 2000; Sennett, 1974). Specifically, feminist theorists have long argued what is personal is also political, that even fully private acts still have political and structural impacts on the public realm (Hirschmann & DiStefano, 1996).

At the same time, typically recognizable differences between situations, like different rules for home versus school, are conflated in a digitalized world (e.g., online schooling in a COVID context). This means that traditional situationism (Goffman, 1959, 1986) is changing within the digital context to create new situations where there are fewer established rules (boyd, 2014), which further muddles people's judgements about what is private or public in a digital world. Rather than making these distinctions clearer, we argue that civic education needs to recast these distinctions as blends to help young people better manage their experiences in digital spaces. Blended spaces (as seen and described below by positions 5 and 6 in a semiotic square) more accurately reflects the relationship that exists between public and the private spaces in a digitalized world (Arendt, 1970; boyd, 2010; Papacharissi, 2010). By better articulating these blended spaces, we set up a theoretical foundation for a need to address digital learning situations in innovative ways.

# Public v. Private through Semiotics

One way to imagine a blended space that consists of both public and private spaces is through the use of a semiotic square (Greimas, 1977). Greimas developed the semiotic square to unpack structures within semantics and grammar that lead to deeper understanding of language (Felluga, 2015). A semiotic square clarifies the meaning and relationship of two concepts that seem dichotomous and mutually exclusive even when they are related, which in turn can help create deeper understanding of both concepts and how they might coexist in symbiosis (Greimas, 1989). The advent of the internet and social media has augmented both "privately public" (i.e., public acts that are done without disclosing one's identity) and "publicly private" (i.e., private behaviors that are publicly linked to individuals) spaces (Papacharissi, 2010, p. 73). The relationships of these blended digital spaces to the traditional private versus public dichotomy can be seen through the analytics of a semiotic square as positions 5 and 6 respectively (see Figure 1).

# Semiotic Positions Explored

In the Figure 1, position 7 correlates to the traditional public space. As a public and not private space, position 7 (traditional public) can be imagined as a town hall meeting on changing the speed limit of a particular street in a community, where community members come to openly discuss an issue that impacts public well-being. An artifact that can be categorized under position 7 includes newspapers that publicize information pertinent to public issues or publicly available information that is pertinent to the well-being of a community (e.g., public service announcements).

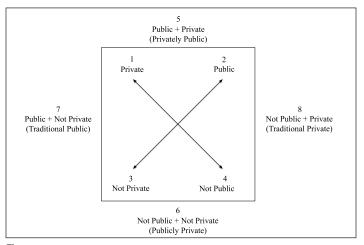


Figure 1 Semiotic Square on Private versus Public

By contrast, position 8 (traditional private—or private and not public) can be imagined as a family dinner in a home, where private individuals act within a private space that is outside of the public eye. Similarly, a personal—unpublished—diary can be categorized as an artifact that sits within position 8. The major distinction between position 7 and 8 are the intent and audience of the space and artifact, with position 7 symbolizing acts by known individuals intended for open consumption, while position 8 signifies acts by individuals unknown to the public and intended for hidden consumption. This dichotomous distinction between private and public can be quite intuitive in an analog world (e.g., Goffman, 1959) and serves as the foundation for theories on the public sphere (e.g., Habermas, 1984; Rawls, 2005). Nevertheless, the advent of the digital mode blurs the distinction between these two contrasts.

# **Privately Public**

Within the semiotic square seen in Figure 1, positions 5 and 6 represent blended spaces that more accurately describe digital configurations of intention and consumption. Position 5 indicates a space/action that is both public and private (or privately public). Privately public can be defined as spaces or actions where an unknown individual is able to influence public sentiment or well-being. Privately public acts are anonymous posts that go viral or anonymous comments on a public post. These are both public and private because the content impacts communal well-being in a public sense, and yet the creator of that content stays hidden or private (e.g., 4chan, reddit, etc.).

# **Publicly Private**

By extension, position 6 embodies a space/action that is neither public nor private (or publicly private). Publicly private is defined as private behaviors that are publicly linked to individuals. Publicly private acts are identifiable actions that are widely distributed publicly, whether the actor intended it to be public or not. The most well-known example of position 6 is likely tabloids, where the private lives of well-known individuals are publicized for all to see. Increasingly, all actions on social media and the internet are subject to becoming publicly private since privacy on the internet can be elusive and continuous to be a challenge.

We do not claim that digitalization created positions 5 and 6 (i.e., the circulation of pamphlets throughout history can be seen as existing in position 5, since the writers often remained anonymous for a time, and tabloids have been in existence since before the discovery of electricity). However, digitalization has augmented the impact and occurrence of positions 5 and 6 exponentially because of easy and speedy access to information. As such, our civic lives and existence are now more inundated with information that exists within positions 5 and 6 than they did in an analog world. This proliferation requires thoughtful consideration of new norms for interacting in an increasingly complex and digitalized civic world. Before showcasing a kind of civic education that can help young people navigate these blended digital spaces, it becomes necessary to show how the digital turn in civic education creates challenges for old paradigms.

# The Digital Turn in Civic Education and Its Challenges

Digital tools and platforms have long been touted as potential new public spaces (Kreide, 2016; Mahlouly, 2013) and have become a natural part of civic life for youth (and adults). Scholars have also noted that digital spaces expand opportunities for a set of practices referred to as participatory politics (Kahne et al., 2014). When youth are engaged in participatory politics, they often tap into their social networks and are not guided by deference to traditional elites or institutions (Jenkins et al., 2016), which further blurs the boundaries of public versus private spaces. For example, youth learn about issues via their peers' online postings and comments (something that is privately public); they start or join online groups to address political issues (something that can be public or privately public); they engage in dialogue with their peers via social networking platforms (both privately or publicly private); they produce, remix, and circulate compelling content (publicly private); and they work to mobilize their social networks to support a cause (public, privately public, or publicly private).

The fluidity with which youth weave in and out of these blended spaces provides them with flexibility to engage both civically and politically (Soep, 2014), but it also poses challenges to how civic education can support students in navigating the complexity of the information flow in our media ecosystem. Not unlike biologists studying ecosystems and the interplay of organisms and their environments, young people (and adults) could benefit from approaching the digital landscape as a "complex media ecosystem with its own emergent behaviors that only become visible when studied from a perspective broader than considering a single medium in isolation" (Zuckerman, 2021, p. 1). The blended nature of public and private spaces is an important component of the media ecosystem.

# Challenges of the Digital Turn

These increased opportunities for engagement in blended spaces also include an array of challenges. For instance, recent studies show that adults and young people struggle a great deal to distinguish between real and fake information (Wineburg & McGrew, 2016; Kahne & Bowyer, 2017). In addition, there is greater exposure to like-minded people and information in these blended spaces and less contact with divergent perspectives, causing an "echo chamber" of ideas (Prior, 2013; Sunstein, 2007), which reinforces private notions over public ones. Even when there is exposure to divergent views, the tone and content of online dialogue is often fraught with conflict and division. Because norms for public behavior don't always apply in digital spaces, it is likely that students are not prepared to tackle conflicts in these blended spaces. A U.S. national survey found that social media users in 2020 were more likely to negatively describe political discourse on online platforms than in 2016, and seven out of ten find them "stressful and frustrating" (Anderson & Auxier, 2020). Furthermore, as we describe next, undetected surveillance of both public and private behaviors in the U.S. and across the world are increasingly possible since online spaces can easily be tracked and traced (Shresthova, 2013).

While the field of civic education recognizes the opportunities and challenges for democratic participation in the digital age (Ito et al., 2015; Kahne, Hodgin & Eidman-Aadahl, 2016; Levine, 2008; Stoddard, 2014), existing ways of addressing civic education in digital spaces are not expansive enough to sufficiently address the needs of this complex and blended landscape. Even as schoolbased best practices (e.g., learning about government and democracy, discussing current events and controversial issues, etc. [Gibson & Levine, 2003; Gould, et al., 2011]) work to support youth development of both civic capacities and commitments (Campbell, 2019), they do not always address how blended spaces can complicate youth civic and political engagement.

# Limits of Media Literacy

Media literacy instruction is often regarded as one way to help young people navigate information and understand audiences in the digital age. However, knowing how to access, analyze, and create digital media may not be enough to successfully engage in blended spaces. With rising concerns over the prevalence of misinformation and fake news, determining the accuracy and credibility of online information has understandably taken center stage in calls for media literacy (Mason et al., 2018). Additionally, instead of just learning the mechanics of how to create content, young people need to reflect on the role they play in producing and circulating media and online information that others consume. Middaugh (2018) recommended supporting youth to develop habits and norms that will support an "ethic of sharing" (p. 50). This is especially true when digital spaces serve as a privately public (position 5 in the semiotic square) arena, where individuals can create and share information publicly without divulging their identities or undergo any public scrutiny. This means young people need to develop a deeper sense of how and why individuals and groups interact in these spaces and the role individuals (and corporations) play in the broader media landscape.

At the same time, media literacy also needs to take seriously the civic and political dimensions of information and communication, and more specifically the blended realities of our digital landscape. One way to bring about this integration is to move beyond a process-oriented approach to a values-oriented approach that incorporates "civic intentionality" and democratic principles, such as bringing people together to engage in productive deliberation, collectively solve social problems, and work toward the common good (Mihailidis, 2018). Some scholars have even framed this intersection between media literacy and civic education as "civic media literacy" to highlight the media literacy skills necessary for informed and effective participation in civic life (Mihailidis, 2018; Middaugh, 2018).

# **Privacy Considerations**

As mentioned, the blurring of private and public spaces brings about issues of privacy and surveillance in digital platforms. Like a Foucauldian panopticon rendered digitally, seemingly private exchanges amongst a group may be exposed to public scrutiny in a new publicly private (position 6 in the semiotic square) space inadvertently, retroactively, and maliciously. Furthermore, students seem overly trusting of these overreaches (Crocco et al., 2020). From screenshots of private conversations to databases insecurely preserved online, understanding our role in public life today means being prepared for a civic life that requires proactivity and awareness of surveillance in these blended spaces. This may mean developing tools for obfuscating mass surveillance (e.g., Brunton & Nissenbaum, 2015) or adjusting the kinds of language or actions that are deemed publicly appropriate, even if those are not how an individual intends to act. As content is flagged online for violating proprietary policies, copyright warnings, and other digital restrictions, this surveillance may also lead to an algorithmic suppression of voice and participation in blended spaces. These types of surveillance are much harder to detect and combat than traditional types of public surveillance (i.e., Closed Caption Television [CCTV]), and students are either unaware or do not understand the ramifications of being "watched" in these blended spaces. These are challenges that existing civic education frameworks focused solely on a separation between traditional public and private spaces do not adequately address.

Moreover, current social media tools present a false sense of digital content being fleeting. Snapchat messages and Instagram stories, for example, are temporally constructed so that they "disappear" after a given set of time to create a temporal privately public space (position 5 in the semiotic square). These social practices and platform designs present an illusion of ephemerality on behalf of users. However, the surveillance and preservation of user-generated content is a fundamental way that these tools characterize who individuals are, construct targeted advertising, and invite people to reveal more information on the promise that it is only for a short period of time and to a limited audience (Brunton & Nissenbaum, 2015).

From evidence that media companies both preserve and track online data (Xu et al., 2016) to human-driven efforts of preserving data for political (Triesman, 2019), social, and personal use, there are no effective means for removing online information once it has been deposited into the internet. Companies then create algorithms from this big data (Yaqoob, et al., 2016) that determine, shape, and influence what and how we consume (Lagrée et al., 2019; Nguyen et al., 2016). Moreover, these algorithms are increasingly influencing everything from the financial sector (Karppi & Crawford, 2015) to collective action (Milan, 2015). In short, our lives are not only being tracked online, but are also being guided by this information via sophisticated algorithms. Soep (2012) described a "digital afterlife" in which user-created media are "reinterpreted, remixed and sometimes distorted by users and emerge into a recontextualized form" (p. 94). In this sense, private information can be used to influence public action-further blending the intention and consumption of information in these blended spaces. In educational contexts, these concerns are usually framed around student safety and function as cautionary tales for students to be careful with the curation of their digital identities (i.e., make things more private), but such instructional approaches avoid broader lessons that help students consider ways platforms mediate everyday social and civic life (Garcia & de Roock, 2021; Garcia & Nichols, 2021)

## Spaces Across the Digital/Analog Domain

Related to the significance of surveillance in a blended space is that such spaces are not (and never have been) solely pertinent to digital spaces. The surveillance of analog interactions (such as traffic cameras) mirrors the digital footprints that are found in the online muck of comments, likes, and digital ephemera that are constantly trafficked by individuals. The private and public blurring that we describe above also intersects with the blurring of digital and analog existences. Though the shift in where and how civic spaces operate makes clear the need for new online learning contexts, approaches, and pedagogies in schools, these tools also fundamentally alter the situations of physical interactions, meetings, and "real-world" advocacy. This is especially clear in light of social and political interactions around the world throughout the COVID-19 pandemic. These boundaries—between public and private and between digital and analog-are porous and continually shift over time. Therefore, teaching for contemporary civic interaction means considering the deliberate nature of living simultaneously in digital and analog domains functioning as blended spaces.

### Reimagining Digital Civic Learning in a Blended World: A Vignette

To showcase how the fluidity of these blended spaces can impact a learning environment, we present a vignette inspired by the reflections of Carmen, a teacher who was part of an educating for democracy initiative in a northern Californian urban school district in the U.S. (see data in Hodgin, 2022). Even though the context is in the U.S., the vignette suggests how teachers around the world might be able to incorporate digital technologies in their classrooms while attending to the blending of spaces as seen in positions 5 and 6 of the semiotic square. Specific adaptations, suggestions, and challenges are interspersed throughout the vignette to create a detailed thought experiment on robust civic education in a digital age:

A ninth-grade English language arts teacher, Carmen wanted to cultivate a broader, more authentic audience for her students' writing. Typical of many teachers, she initially had students post "public" (a simulacrum of position 7 in the semiotic square) essays about their community to a Google site and then comment on one another's posts. However, the public nature of the audience only expanded to the next class period of students, limiting the scope of an audience that could authentically be reached digitally.

Then Carmen realized that digital tools provide a significant opportunity for her students to develop a broader genuine public voice (position 7 in the semiotic square). She started using an academic networking and multimedia publishing platform, called Youth Voices, that expanded their audience by connecting her students with other students across the U.S. through online exchanges focused on issues and ideas they are passionate about. Youth Voices was developed by National Writing Project teachers in 2003 to bring students together online to share writing and engage in conversation. Around 30 middle schools and high schools across the United States participated in the site. At the time of publication, the site contained over 15,000 posts and 18,000 comments by young people. Teachers set up a group on the site for their school and through that page students develop an account tied to their school email and carefully constructed bios using their first name and last initial. Students could read and comment on posts written by other young people in a range of communities across the country. While the site was open for anyone to view, it preserved some decorum of a traditional public space (position 7) since students could not upload a post or comment on one unless they had an account set up by a teacher or an administrator of the site.

In many ways, this traditional public space made sense for a learning environment; the commenting norms on the site were very intentional and scaffolded-some teachers drew on suggested sentence starters for posts and others taught students about commenting as a genre so that conversational exchanges were respectful and thoughtful-so it was rare to receive anonymous trolling or hateful or upsetting comments (as seen in position 5 above) even if someone disagreed with a perspective. Carmen really valued this platform as it enabled her students to express their perspectives on issues that mattered to them in an online space, engage in dialogic exchanges with peers from a range of communities, and navigate an online audience and community that they didn't know in real life. While these features align with the benefits of introducing students to traditional public discourse norms and spaces (e.g., Delli Carpini et al., 2004), the site did not accurately represent what actually happens in online spaces.

After some time, Carmen wanted her students to be able to reach beyond the partially protected space of this academic platform and experience the full scope of the digital arena (i.e., expand outside of position 7 and into positions 5 and 6). Students were completing a project where they took on the role of a journalist and raised awareness about an issue in their community that was important to them by elevating people, places, and stories that should not be silenced. Students researched the issue, investigated the root causes, explored existing efforts and related organizations, and finally developed an action plan aimed at raising awareness and mobilizing others to get involved. Students focused on topics such as gun violence, immigration, and living undocumented in the U.S., the lack of funding for public schools, gentrification, littering and air pollution, and homelessness in the community. The sanctioned school platform created constraints on what students would be able to achieve, so Carmen elected to use Instagram as the platform that would allow her students to express their voice fully. However, this release into the full digital arena meant students would be subjected to the blending of spaces (e.g., the trolls of position 5, the potential irreverence of position 6). To help combat some of these pitfalls, students spent time comparing the norms and conversational moves on Instagram versus the academic platform they had used previously. This can help students become more flexible with differing norms and break out of thinking about public norms in a rigid way. Once they posted on Instagram, students supported each other as they navigated thorny comments and feedback from being in a privately public space where anyone can say anything with little to no consequences. Students also helped one another figure out how to get more

followers to ensure their posts didn't become immaterial in a fast-paced, ever-shifting platform.

In one instance that exemplified the challenges of navigating a privately public space (position 5), two students received several negative comments, including one user who trolled their feed by reiterating unproductive and disrespectful comments. Because they practiced for this exact eventuality by writing posts where they respectfully disagreed with someone on the sheltered academic platform, the students were able to craft thoughtful and evidence-based responses and not shy away from the exchange. To keep productive dialog running in these blended spaces where people can attack without consequence (privately public: position 5) or distract with irrelevant information (publicly private: position 6), Carmen would often tell her students to think about how to disagree or redirect without shutting the door. By engaging in a class discussion about whether and how to respond to negative comments, Carmen supported her students to be strategic and identify whether there was a possibility for dialogue across disagreement or whether the negative comments even warranted a response. Through such authentic experiences, students developed new skills and had opportunities to practice navigating online dialogue across political differences as well as "the full complexity of rampantly conflicting information and impassioned positions found outside school" (Chinn et al., 2020, p. 55).

#### **Civic Learning in Blended Digital Spaces**

Beyond the tropes of media literacy and digital protection, the vignette presents some ideas for how best to think about the blending of public and private spaces when incorporating digital tools in civic education. At the same time, it also illuminates some challenges for leveraging digital tools within fully blended spaces. In the next section, we outline ways to better deal with positions 5 and 6 in digital civic learning.

The first conundrum of utilizing digital tools in civic classrooms is, how public should the assignments/tasks be? On the one hand, there is the potential for tasks to be rather insular and not really public at all (i.e., the Google site version of the assignment in the vignette). This would defeat the purpose of having students engage with digital spaces to become more practiced at navigating blended spaces. On the other hand, there is the potential for student posts to go viral (i.e., be fully public, privately public, and publicly private all at the same time), which can venture beyond the control of the teacher and even the student. This loss of control can go against prevailing wisdom about lesson planning and curriculum design. However, Carmen's scaffolded approach offers a potential middle ground for teachers hoping to engage students in more digital civic learning. By getting her students acclimated to posting and commenting on a protected academic platform that behaves much more like the traditional public space with norms and guidelines (position 7), her students are given the opportunity to flex and practice their digital posting muscles in a simulacrum (Baudrillard, 1995) of the digital sphere. The academic platform acts as a simulated space and can be particularly helpful for students who may not want to be perceived as being overly political or have not yet decided on their political voice (Lo, 2017a).

Carmen also asked her students to explore a range of comments and exchanges on the site in order to identify different conversational moves or tactics that were meaningful and productive and led to further dialogue, which served as practice for eventual engagements in positions 5 and 6. When her students received comments where the reader challenged the students' perspective, Carmen encouraged her students to read their profile to understand their background and how that might influence their perspective. Understandably, this would be more difficult to do if the posters were completely anonymous, but it is still a good practice in humanizing the other when dealing with them in blended spaces. On one occasion, Carmen's student wrote about youth gangs in her city. Another student on the site responded with disbelief that young people actually joined gangs. Carmen coached her student to read the commenter's profile to learn more about their life experiences before responding (i.e., engaging in the publicly private arena: position 6) and why they might have the perspective they do. After learning that the student was from a rural state in the central part of the U.S. (i.e., private information shared publicly: position 6), Carmen's student crafted a response that shared more evidence and compelled the commenter to increase their awareness about the issue. By guiding students through the ins and outs of online communication (intentionally engaging both with positions 5 and 6), Carmen was able to help students build the kind of knowledge, skills, and capacities needed for less protected and predictable spaces.

This scaffolded release from an academic platform to a social media platform (or from traditionally public to fully blended spaces) can help students hone their voice. However, it doesn't necessarily help students deal with certain unintended consequences of the internet, like soliciting unwanted trolls, going viral, or not gaining traction. Since students and teachers have no control over what gets seen by whom on the internet, Carmen's move to have students practice how to combat internet trolls, create evidence-based posts, and disagree in respectful ways is crucial for digital civic learning. Students' ability to negotiate emotive reasoning and agonistic deliberation (Mouffe, 1999; Lo, 2017b) can help them develop skills and acumen for addressing tricky digital situations. At the same time, the longevity of internet posts serves as an important reminder to both teachers and students that prudence is a virtue when it comes to posting and commenting on internet threads, even if the post may seem private at the time.

Another key consideration about youth participation in digital civic spaces focuses on how much of an individual's personal identity should be tied up in this public presentation. Deciding to use a platform like Instagram opens questions for teachers, students, and their broader familial networks about how identifiable an individual could or should be in these spaces. On the one hand, recent data makes clear that the majority of students are already on these social media platforms (Auxier & Anderson, 2021). On the other hand, linking these existing profiles to academic tasks is a jarring request that may be out of sync with students' presentation of their own identities and interests. Some teachers have created class or school-specific accounts on social media profiles to create a broad swatch of students that might "take on" an account temporarily to share ideas publicly, momentarily skirting the publicly private issue. Additionally, some teachers may encourage students to create multiple online identities that express various aspects of their identities (i.e., social/ personal in one account and civic/political in another). From the kinds of language students employ (such as using standard English or emojis), to the avatar a student uses to present themselves, to the kind of content that an account curates, online identity is clearly much more than an individual's "name." These are likely considerations that students need to make and explore on a regular basis, such as maintaining private finsta accounts or recognizing catfishing when online accounts—humorously or maliciously—present themselves as someone they are not.

Just as Goffman reminded us more than half a century ago (1959), students present their identities in varied contexts, for varied audiences, and through different performative decisions. Considering how students bracket different aspects of their identities for different people (e.g., James, 2016), educators need to help students discern and develop short-term and long-term goals around their identities and engagement in online civic spaces. These explorations require a nuance that extends beyond the fear of unflattering comments or images persisting as part of a student's "digital afterlife" (Soep, 2012). Pedagogical tools for supporting these decisions and weighing the affordances of these choices are immediate needs in schools today.

Ultimately, beyond just media literacy and digital protection, teachers are tasked with helping students understand their digital personas, identities, choices, and audiences when it comes to digital civic learning in these blended spaces. Some scaffolded release can help with this; by first getting students used to a "protected" academic platforms (e.g., Edublogs, Flipgrid, Edmodo, etc.), teachers can help students prepare for civic engagement on open platforms (e.g., Twitter, Instagram, etc.). The transition between simulacra and reality gives students an opportunity to try out their political personas and to practice conducting productive digital dialogue. At the same time, teachers ought to encourage students to practice writing comments, responding to posts, attending to trolls, and normalizing disagreements while fostering civility. However, all of this would require the development of more robust simulated digital dimensions for civic learning that accounts for the blending of public and private spaces and identities.

#### Implications

As Carmen's classroom example suggests, there are no easy answers for how the blended spaces of civic education today should be traversed or explored. Much of the contemporary framing for online civic education in the U.S. has focused on surface-level interpretations of young people as feeble victims falling prey to the dangers that lurk on the internet (Crocco et al., 2020). However, coming to terms with the hybridity of blended civic spaces requires moving beyond this toothless vision of student capacity for learning and change. Rather, what might it take for schools and for teachers to see students as civic agents that can meaningfully navigate and lead within online environments? Perhaps students can help set norms, like ones that exist for traditionally public spaces, for blended spaces that are currently missing or inadequate. How do our pedagogical expectations shift in light of the blended contexts of school settings? As Carmen's classroom and the myriad similar challenges faced in schools today suggest, our approaches to teaching must go beyond digital safety and digital information analysis. We must work to enable young people to enact complex digital literacy practices that sustain civic action. The semiotic square is just one tool that can help us describe, parse, and analyze the complexity of what it means to engage in the digital space for now, but that space is also constantly shifting.

We must consider what responsible and effective digital civic engagement should look like given the complex and ever-changing terrain of blended spaces. This includes considering how to engage in online civic deliberation given the unpredictability of antagonistic exchanges, how to circulate information to known and unknown audiences, and how to get involved and take action around societal issues. Although there are a host of challenges, there are also unique opportunities in the fluidity of blended spaces. We have the potential to amplify the civic possibilities of blended spaces to further promote collective participation in democracy and the common good.

If the traditional public is fraught with challenges and online spaces bring their own host of complexities, then how can we reimagine a new fabric of blended spaces that bring people together to engage in dialogue across differences and solve common problems? By exercising our "civic imagination" youth (and adults) can imagine an alternative to the current conditions (Baiocchi, et al., 2013; Jenkins et al., 2020). Furthermore, in a blended online landscape, youth must develop "digital civic imagination." Evans (2015) described digital civic imagination as "the capacity to imagine strategic uses of technology to address social and political issues from digital tools typically used for personal and social purposes" (para. 5). In this regard, youth not only learn digital literacy skills but also reimagine how to achieve civic aims using digital tools and platforms in a blended landscape. In addition, we can support young people to cultivate what Mihailidis (2018) called "civic intentionality" (including agency, caring, critical consciousness, persistence, and emancipation) as well as an "ethic of sharing" (Middaugh, 2018) alongside media literacy knowledge and skills. Clearly, developing skills and strategies to navigate online spaces is not sufficient to meet the civic and political demands we face, such as deep divisions and increasing distrust. Instead, we must intertwine media literacy education, civic education, and a recognition of the contours of publicly private and privately public spaces.

#### Conclusion

It feels improbable that the digital spaces afforded by the internet have become ubiquitous in such a short time, since the first browser was introduced to the public on April 30, 1993. Even as varied internet access continues to create inequitable experiences throughout communities, it is slowly becoming a commonplace public good and necessity in the 21st century (Romm & Zakrzewski, 2021). Yet with this proliferation comes growing challenges for communities and society writ large. As more and more people engage digitally, schools (and civic education specifically) need to help young people develop keen awareness and acumen for navigating the blending between public and private spaces and identities within the digital world. More than an articulation of prescriptions, this paper presented a collection of ideas and questions around what it means to conduct future research on civic education in the digital era.

Using the U.S. context as an example, we encourage colleagues and researchers around the world to study how civic educators can/should instruct, facilitate, and create scaffolded learning experiences in these blended (positions 5 and 6) spaces. This may require the field to focus less on digitizing analog tools and more on helping students become aware and thoughtful about intended/ unintended audiences and consequences of digital spaces (e.g., privacy, false information, etc.). It may also require the field to consider new civic practices (or adaptation of old practices) for these spaces, such as how to practice civic dialog (a public act) when participants are anonymous entities (in private spaces). Specifically, rather than building (fire) walls of protection against digital pitfalls, schools might consider learning from Carmen's example and help students develop resilience in dealing with novel challenges and issues in these blended spaces as students learn to engage digitally. Moreover, the field will need to refine ways to train and support teachers to recognize the complexities of these spaces and how to navigate them with their students.

Above all, there is a need for the field to think and teach about digital civic platforms and spaces differently. Rather than treating digital spaces as an extension or differentiated modality of traditional civic spaces, we must recognize online civic spaces as unique entities that blend our notions of the public and private. Instead of thinking about digital spaces as tools, we need to think about digital spaces as new area for exploration and engagement. By articulating digital spaces as its own avenue of civic education, the field could begin to ask questions like, how do we want students to show up in an online space? What parts of our identities do we publicize/compartmentalize in digital civic spaces? What are the norms of digital civic spaces? How do we participate online and remain civically authentic? These are questions that transcend national and cultural boundaries.

While teaching young people to interact in person and engage in face-to-face discussion and deliberation continue to be best civic practices, past approaches to teaching for interaction in a public space do not always translate well into digital spaces. Acts of antidemocratic movements across the world, ongoing violence against marginalized peoples, and a technocratic response to education amidst a global pandemic all illustrate that the wheres and hows of civic action have shifted, even if approaches to teaching for civic education have not. With online software tracking student attention in virtual environments and with surveillance tools and social media posts being used to track participants of protests, the civic existence today is a constant blend of private and public spaces. These new contexts require a profound civic interrogation of the past and a reimagination of how pedagogies for civic learning respond to these new blended modes of interaction. We hope our colleagues will join us in continuing this conversation and line of research.

#### References

- Anderson, M., & Auxier, B. (2020, August). 55% of U.S. social media users say they are "worn out" by political posts and discussions. Pew Research Center. https://www .pewresearch.org/fact-tank/2020/08/19/55-of-u-s-social-media-users-say-they -are-worn-out-by-political-posts-and-discussions/.
- Arendt, H. (1958). The crisis in education. Partisan Review, 25(4), 493-513.
- Arendt, H. (1970). On violence. Harcourt, Brace & World.
- Aristotle. (1999). Nicomachean ethics (T. Irwin, Trans.). Hackett Pub. Co.
- Auxier, B. & Anderson, M. (2021). Social media use in 2021. Pew Research Center. Retrieved from https://www.pewresearch.org/internet/2021/04/07/social-media -use-in-2021/.
- Baiocchi, G., Bennett, E. A., Cordner, A., Klein, P., & Savell, S. (2014). Civic imagination: Making a difference in American political life. Routledge.
- Baudrillard, J. (1995). Simulacra and simulation (The body, in theory: Histories of cultural materialism) (S. F. Glaser, Trans.; 1st ed., 17th printing ed.). University of Michigan Press.
- Benhabib, S. (1993). Models of public space: Hannah Arendt, the liberal tradition, and Jürgen Habermas. In C. J. Calhoun (Ed.), *Habermas and the public sphere* (pp. 73–98). MIT Press.
- boyd, d. (2010). Social network sites as networked publics: Affordances, dynamics, and implications. In Z. Papacharissi (Ed.), *Networked self: Identity, community, and culture on social network sites* (pp. 39–58). Routledge.
- boyd, d. (2014). It's complicated: The social lives of networked teens. Yale University Press.
- Brunton, F., & Nissenbaum, H. F. (2015). *Obfuscation: A user's guide for privacy and protest*. MIT Press.
- Callan, E. (1997). *Creating citizens: Political education and liberal democracy*. Oxford University Press. https://doi.org/10.1093/0198292589.001.0001.
- Callan, E. (2004). Citizenship and education. *Annual Review of Political Science*, 7(1), 71–90. https://doi.org/10.1146/annurev.polisci.7.012003.104924.
- Campbell, D. E. (2008). Voice in the classroom: How an open classroom climate fosters political engagement among adolescents. *Political Behavior*, 30(4), 437–454. JSTOR.
- Campbell, D. E. (2019). What social scientists have learned about civic education: A review of the literature. *Peabody Journal of Education*, *94*(1), 32–47. https://doi.org/10.1080/0161956X.2019.1553601.
- Chinn, C. A., Barzilai, S., & Duncan, R. G. (2021). Education for a "post-truth" world: New directions for research and practice. *Educational Researcher*, *50*(1), 51–60. https://doi.org/10.3102/0013189X20940683.
- Costa, V. (2010). Rawls, citizenship, and education (1st ed.). Routledge.
- Crocco, M. S., Segall, A., Halvorsen, A.-L., Stamm, A., & Jacobsen, R. (2020). "It's not like they're selling your data to dangerous people": Internet privacy, teens, and (non-) controversial public issues. *The Journal of Social Studies Research*, 44(1), 21–33. https://doi.org/10.1016/j.jssr.2019.09.004.
- Delli Carpini, M. X. D., Cook, F. L., & Jacobs, L. R. (2004). Public deliberation, discursive participation, and citizen engagement: A review of the empirical literature. *Annual Review of Political Science*, 7(1), 315–344. https://doi.org/10.1146/annurev.polisci.7.121003.091630.
- Evans, C. (2015, March 26). *The nuts and bolts of digital civic imagination*. Connected Learning Alliance. https://clalliance.org/blog/the-nuts-and-bolts-of-digital-civic -imagination/.
- Fallace, T. D. (2016). The origins of classroom deliberation: Democratic education in the shadow of totalitarianism, 1938–1960. *Harvard Educational Review*, *86*(4), 506–526. https://doi.org/10.17763/1943-5045-86.4.506.

Felluga, D. F. (2015). Critical theory: The key concepts. Routledge.

- Fraser, N. (1993). Rethinking the public sphere: A contribution to the critique of actually existing democracy. In C. J. Calhoun (Ed.), *Habermas and the public sphere* (pp. 109–142).
- Galston, W. A. (2001). Political knowledge, political engagement, and civic education. *Annual Review of Political Science*, 4(1), 217–234. https://doi.org/10.1146/annurev .polisci.4.1.217.
- Garcia, A., & de Roock, R. S. (2021). Civic dimensions of critical digital literacies: Towards an abolitionist lens. *Pedagogies: An International Journal*, *16*(2), 187–201.
- Garcia, A., McGrew, S., Mirra, N., Tynes, B., & Kahne, J. (2021). Rethinking digital citizenship: Learning about media, literacy, and race in turbulent times. In Lee, C. D., White, G., & Dong, D. (Eds.) Educating for Civic Reasoning and Discourse (pp. 319–352). National Academy of Education.
- Garcia, A., & Nichols, T. P. (2021). Digital platforms aren't mere tools—They're complex environments. *Phi Delta Kappan*, 102(6), 14–19.
- Gates, B. (1999). Business @ the speed of thought: Succeeding in the digital economy. Grand Central Publishing.
- Gibson, C., & Levine, P. (2003). The civic mission of schools. The Carnegie Corporation of New York and the Center for Information and Research on Civic Learning. https:// www.carnegie.org/publications/the-civic-mission-of-schools/.
- Goffman, E. (1959). The presentation of self in everyday life (1 ed.). Anchor.
- Goffman, E. (1986). *Frame analysis: An essay on the organization of experience*. Northeastern.
- Gould, J. (Ed.). (2011). *Guardian of democracy: Civic mission of schools*. The Leonore Annenberg Institute for Civics of the Annenberg Public Policy Center at the University of Pennsylvania. https://www.carnegie.org/publications/guardian-of -democracy-the-civic-mission-of-schools/.
- Greimas, A. J. (1977). Elements of a Narrative Grammar (C. Porter, Trans.). *Diacritics*, 7(1), 23–40. https://doi.org/10.2307/464872.
- Greimas, A. J. (1989). On meaning. In P. Perron & F. Collins (Eds.), New literary history (Vol. 20, pp. 539–550). The Johns Hopkins University Press. https://www.jstor.org/ stable/469352.
- Habermas, J. (1984). The structural transformation of the public sphere: An inquiry into a category of bourgeois society. MIT Press.
- Haidt, J. (2022, April 11). Why the past 10 years of American life have been uniquely stupid. *The Atlantic*. https://www.theatlantic.com/magazine/archive/2022/05/ social-media-democracy-trust-babel/629369/.
- Hess, D. E. (2009). Controversy in the classroom: The democratic power of discussion. Routledge.
- Hess, D. E., & McAvoy, P. (2014). *The political classroom: Evidence and ethics in democratic education* (1 ed.). Routledge.
- Hirschmann, N. J., & DiStefano, C. (1996). *Revisioning the political: Feminist reconstructions of traditional concepts in western political theory*. Routledge.
- Hobbes, T. (1994). Leviathan: With selected variants from the Latin edition of 1668 (E. Curley, Ed.; Underlined Notations edition). Hackett Publishing Company.
- Hodgin, E. (2022). Talking politics online: Educating for online civic and political dialogue. In J. Lo (Ed.), *Making discussions work: Methods for quality dialogue in the social studies*. Teachers College Press.
- Ito, M., Soep, E., Kligler-Vilenchik, N., Shresthova, S., Gamber-Thompson, L., & Zimmerman A. (2015). Learning connected civics: Narratives, practices, infrastructures. *Curriculum Inquiry*, (45)1, 10–29.
- James, C. (2016). Disconnected: Youth, new media, and the ethics gap. MIT Press.
- Jenkins, H., Peters-Lazaro, G., & Shresthova, S. (2020). Popular culture and the civic imagination: Case studies of creative social change. NYU Press.
- Jenkins, H., Shresthova, S., Gamber-Thompson, L., Kligler-Vilenchik, N., & Zimmerman, A. (2016). *By any media necessary: The new youth activism*. NYU Press.

- Kahne, J., & Bowyer, B. (2017). Educating for democracy in a partisan age: Confronting the challenges of motivated reasoning and misinformation. *American Educational Research Journal*, 54(1), 3–34.
- Kahne, J., Hodgin, E., & Eidman-Aadahl, E. (2016). Redesigning civic education for the digital age: Participatory politics and the pursuit of democratic engagement. Theory and Research in Social Education, 44(1), 1–35.
- Kahne, J., Lee, N-J., & Feezell, J. T. (2012). Digital media literacy education and online civic and political participation. *International Journal of Communication*, 6, 1–24.
- Kahne, J., Middaugh, E., & Allen, D. (2014). *Youth, new media, and the rise of participatory politics* [YPP Working Paper No. 1]. http://ypp.dmlcentral.net/sites/default/ files/ publications/ YPP\_WorkinPapers\_Papero1\_8.24.17.pdf.
- Karppi, T., & Crawford, K. (2016). Social media, financial algorithms and the hack crash. Theory, Culture & Society, 33(1), 73–92. https://doi.org/10.1177/0263276415583139.
- Knobel, M., & Lankshear, C. (2007). A new literacies sampler. Peter Lang.
- Kreide, R. (2016). Digital spaces, public places and communicative power: In defense of deliberative democracy. *Philosophy & Social Criticism*, 42(4–5), 476–486. https:// doi.org/10.1177/0191453715623831.
- Lagrée, P., Cappé, O., Cautis, B., & Maniu, S. (2018). Algorithms for online influencer marketing. ACM Transactions on Knowledge Discovery from Data, 13(1), 1–30. https://doi.org/10.1145/3274670.
- Levine, P. (2008). A public voice for youth: The audience problem in digital media and civic education. In W. L. Bennett (Ed.) *Civic life online: Learning how digital media can engage youth* (pp. 119–138). MIT Press.
- Lo, J. C. (2019). Bridging a polarizing divide: Election simulation in an AP government course. *The Social Studies*, 109(6), 281–293. https://doi.org/10.1080/00377996.2018.1521781.
- Lo, J. C. (2017a). Adolescents developing civic identities: Sociocultural perspectives on simulations and role-play in a civic classroom. *Theory & Research in Social Education*, 45(2), 189–217. https://doi.org/10.1080/00933104.2016.1220877.
- Lo, J. C. (2017b). Empowering young people through conflict and conciliation: Attending to the political and agonism in democratic education. *Democracy and Education*, 25(1), Article 2.
- Mahlouly, D. (2013). Rethinking the public sphere in a digital environment: Similarities between the eighteenth and the twenty-first centuries. *ESharp*, 20. https://kclpure .kcl.ac.uk/portal/en/publications/rethinking-the-public-sphere-in-a-digital -environment(3ac8d4c8-59c4-45b2-aicd-19ed42844464)/export.html.
- Martens, H., & Hobbs, R. (2015). How media literacy supports civic engagement in the digital age. *Journal of Communication*, 23, 120–137.
- Mason, L. E., Krutka, D., & Stoddard, J. (2018). Media literacy, democracy, and the challenge of fake news. *Journal of Media Literacy Education*, 10(2), 1–10. https://digitalcommons.uri.edu/jmle/vol10/iss2/1/.
- Middaugh, E. (2018). Civic media literacy in a transmedia world: Balancing personal experience, factual accuracy and emotional appeal as media consumers and circulators. *Journal of Media Literacy Education*, 10(2), 33–52. https:// digitalcommons.uri.edu/jmle/vol10/iss2/3/.
- Mihailidis, P. (2018). Civic media literacies: re-Imagining engagement for civic intentionality. *Learning, Media and Technology*, 43(2), 152–164, https://doi.org/10.1080/17439884.2018.1428623.
- Milan, S. (2015). When algorithms shape collective action: Social media and the dynamics of cloud protesting. Social Media + Society, 1(2). https://doi.org/10.1177/ 2056305115622481.

Mouffe, C. (2000). The democratic paradox. Verso.

- Niemi, R. G., & Junn, J. (1998). *Civic education what makes students learn*. Yale University Press.
- Nguyen, H. T., Thai, M. T., & Dinh, T. N. (2016). Stop-and-stare: Optimal sampling algorithms for viral marketing in billion-scale networks. *Proceedings of the 2016 International Conference on Management of Data*, 695–710. https://doi.org/10.1145/ 2882903.2915207.
- Papacharissi, Z. (2010). A private sphere: Democracy in a digital age. Polity.
- Parker, W. C. (1996). Educating the democratic mind. State University of New York Press.
- Parker, W. C. (2003). *Teaching democracy: Unity and diversity in public life*. Teachers College Press.
- Prior, M. (2013). Media and political polarization. *Annual Review of Political Science*, 16, 101–127. https://doi.org/10.1146/annurev-polisci-100711-135242.
- Rawls, J. (2005). *Political liberalism: Expanded edition* (2nd ed.). Columbia University Press.
- Romm, T., & Zakrzewski, C. (2021, August 5). Senate infrastructure bill sets stage for massive effort to make broadband more available and affordable. *Washington Post*. https://www.washingtonpost.com/technology/2021/08/05/senate-infrastructure -bill-sets-stage-massive-effort-make-broadband-more-available-affordable/.
- Sennett, R. (1974). The fall of public man. W. W. Norton & Company.
- Shresthova, S. (2013). Between storytelling and surveillance: American Muslim youth negotiate culture, politics and participation. [YPP Working Paper]. https://ypp .dmlcentral.net/publications/161.html.
- Soep, E. (2012). The digital afterlife of youth-made media: Implications for media literacy education. *Comunicar*, 19(38), 93–100. https://doi.org/10.3916/C38-2012-02-10.
- Soep, E. (2014). Participatory politics: Next-generation tactics to remake public spheres. MIT Press.
- Stoddard, J. (2014). The need for media education in democratic education. *Democracy & Education*, 22(1), 1–9.
- Sunstein, C. R. (2007). Republic.com 2.0. Princeton University Press.
- Triesman, R. (2019). As President Trump tweets and deletes, the historical record takes shape. National Public Radio. https://www.npr.org/2019/10/25/772325133/as -president-trump-tweets-and-deletes-the-historical-record-takes-shape.
- Wineburg, S., & McGrew, S. (2016, November 1). Why students can't Google their way to the truth. *Education Week*. Retrieved from https://www.edweek.org/ew/articles/ 2016/11/02/why-students-cant-google-their-way-to.html.
- Xu, B., Chang, P., Welker, C. L., Bazarova, N. N., & Cosley, D. (2016). Automatic archiving versus default deletion: What snapchat tells us about ephemerality in design.
  Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing, 1662–1675.
- Yaqoob, I., Hashem, I. A. T., Gani, A., Mokhtar, S., Ahmed, E., Anuar, N. B., & Vasilakos, A. V. (2016). Big data: From beginning to future. *International Journal of Information Management*, 36(6, Part B), 1231–1247. https://doi.org/10.1016/j .ijinfomgt.2016.07.009.
- Zuckerman, E. (2021) Why study media ecosystems? *Information, Communication & Society*, 24(10), 1495–1513, https://doi.org/10.1080/1369118X.2021.1942513.