3. The Digital Constellation as a Context for Deliberative Systems

The digital constellation is a theoretical concept that was first presented by Sebastian Berg, Niklas Rakowski and Thorsten Thiel (2020a). It refers, in a holistic manner, to societies that are characterised by the use of digital technologies. In other words, it provides a heuristic that allows one to analyse the interdependencies of digital technologies and society on different levels while avoiding monocausalistic inferences. It is explicitly designed to be accessible for the political sciences, and specifically for democratic theory. It is therefore a particularly useful tool for assessing deliberative processes in the digital realm and their role within the wider deliberative system.

The socio-technical dynamics of the digital constellation generally shape the deliberative systems that form in and operate under the conditions of this constellation. This is because deliberative systems are based on political communication and "a growing proportion of political communication uses digital means" (Parkinson 2012a: 1). It is not just that everyday political talk increasingly takes place in digital spheres; democratic innovations as well as empowered spaces are expanding into the digital realm, too (cf. Asenbaum 2020: 245–247; Chwalisz 2021: 171).[1] Meanwhile, digital technologies offer new means of communication and new spaces for interaction. So, digital technologies provide a communications medium of ever-growing importance.

Moreover, digital technologies provide the "horizon" of all practices and possibilities for action in the social world, since digital communication channels are fundamental reference points and resources (cf. Couldry/Hepp 2017: 15). More specifically, they represent a reference point for the possibilities of communication and organisation. Individuals who interact within the digital

1 See also chapter 4.2.

constellation are aware of the existence of digital technologies and the possibilities they provide. These individuals will adapt their actions in line with this knowledge. On the other hand, digital technologies are a resource. They provide access to information on societal issues and perspectives. Moreover, they can be used to organise discourse and social movements in the non-digital spheres of deliberative systems. Therefore, the properties and affordances of digital techniques also influence the wider deliberative system and ultimately feed into the decision-making. Additionally, digital technologies can themselves be the subject of societal discourse and political decision-making, as the growing number of legal attempts at regulation and media discourses indicate.

Consequently, a growing proportion of contemporary political communication – online as well as offline – is affected by the innumerable effects of digital technologies. At the same time, the conditions of the digital constellation tangibly restructure the public sphere. New spaces and arenas emerge; traditional media lose their centrality; social movements are facilitated. The public sphere represents a large and especially important part of deliberative systems. If such a large sphere is structurally influenced, this also affects the parts of a system beyond this sphere. The conditions of the digital constellation thus represent the context of any communication process within any of these deliberative systems.

The conditions of the digital constellation consequently have "transformative implications for the way democracy is understood and practised" (Ercan et al. 2019: 21). Yet the deliberative systems approach has thus far been slow to engage with the digital transformation and its implications. Scholars have frequently mentioned digital spaces as parts of deliberative systems (cf. Bächtiger/Parkinson 2019: 113; Curato et al. 2017: 29; Mansbridge et al. 2012: 10). However, they have thus far treated a communication process's "technical basis as an exogenous variable" (Feenberg 2017: 189) and disregarded the specific characteristics of digital communication. Other scholars have voiced their scepticism regarding the deliberative democratic potential of mediated and online communication (cf. Mansbridge et al. 2012: 21) or have outright denied any such potential (cf. Goodin 2008: 93). But most of the time, both deliberative theory in general and the deliberative systems approach in particular have addressed digital communication as a secondary topic.

Nonetheless, some studies have surfaced that are explicitly directed at the nexus of digitisation and deliberative democratic theory research – although not as many as one would expect for such prominent research fields – and the authors of these studies have approached the subject in diverse manners. Sev-

eral of the scholars have treated online communication processes merely as examples of deliberative processes in general.[2] Other scholars have studied individual processes in online spaces, measuring and comparing their deliberative qualities.[3] Still others have engaged with the specifics of online communication, such as platform design,[4] the theoretical and practical blind spots of algorithmic moderation (cf. Alnemr 2020), the theoretical conception and implications of disembodied communication (cf. Asenbaum 2021, 2020, 2023), the communication features of specific platforms (cf. Forestal 2020), the effects of anonymity, pseudonyms and real-name requirements on communication (cf. Moore et al. 2020; Strandberg/Grönlund 2018), the influence of interfaces on deliberative quality (cf. Peacock et al. 2019) or the factors that foster disrespect in online debates (cf. Sarmento/Mendonça 2016). Some scholars have concerned themselves with how to design platforms that promote high deliberative quality (cf. Alnemr 2020; Hartz-Karp/Sullivan 2020), and some have even sketched out online democratic innovations (cf. Gastil 2016). I will integrate the observations and conclusions of these more detailed and more narrowly focussed studies into my own analyses. Moreover, a number of researchers have addressed systemic aspects of online communication, but these accounts remain rather descriptive and address neither the specific properties and affordances that lead to the structures being accounted for nor the wider societal embeddedness of the digital communication processes being described.[5] All the studies have used different research approaches to address their respective topics. Many of them are based on empirical data,[6] while others mainly rely on theoretical conceptualisation (cf. Chambers 2020; Ercan et al. 2019; Wright 2012). Some studies review other studies on online communication, formulate

2 For example: Chambers (2020), Lawrence/Bates (2014), Maia et al. (2021), Parkinson et al. (2020 // 2022), Pedrini (2014), Stroud et al. (2015). My analyses later in the book will show, however, that communication processes on social media platforms have attributes that derive specifically from the platforms' digital architectures.

3 For example: Esau et al. (2017), Hendriks et al. (2016), Rishel (2011).

4 For example: Alnemr (2020), King (2018), Manosevitch (2020), Peacock et al. (2019), Strandberg/Grönlund (2018), Wright/Street (2007).

5 For example: Ercan et al. (2019), Lyons (2020), Parkinson et al. (2020 // 2022), Rossini et al. (2020), Rousiley (2018), Strandberg/Grönlund (2018), Vicari et al. (2020).

6 For example: Esau et al. (2021), Hendriks et al. (2016), Maia et al. (2021), Lawrence/Bates (2014), Parkinson et al. (2020 // 2022), Peacock et al. (2019), Pedrini (2014), Rishel (2011), Rossini et al. (2020), Sarmento/Mendonça (2016), Stroud et al. (2015), Vicari et al. (2020).

theoretical or methodological critiques of them or make proposals for future studies.[7] The quality of all these studies varies considerably. Almost all of them are strongest and most firmly grounded in only one research area, either deliberative theory, communication sciences, digitisation theory or digital methodology.

Few scholars have so much as touched upon a more holistic view that takes into account the implications of a digitised society for deliberative systems and communication processes across and beyond the divide between digital and physical spaces (cf. Asenbaum 2023; Chambers 2020; Wright et al. 2018). Consequently, what is needed is not only "a full-blown rethinking of the construction of everyday reality" (Couldry/Hepp 2017: 6), but also a full-blown rethinking of the construction and procedures within deliberative systems.[8] The concept of the digital constellation represents a first step in this direction. This concept captures the interwovenness of digital and non-digital spheres of (political) society, and it can be used as a tool to analyse the formation of political communication under digitised conditions. Therefore, I will present this concept in this chapter and use it in the subsequent ones to explore how the conditions of the digital constellation affect deliberative systems. I will thus widen the scope of the deliberative systems approach.

Moreover, I will demonstrate the interwovenness of digital and non-digital spheres of political society by presenting central aspects of how digital technologies in general affect the public sphere. As I have indicated throughout the previous chapter, the public sphere is considered a central part of deliberative systems by many scholars of the systems approach. At the same time, it is the part that has been especially affected by the properties and affordances of the digital constellation, as well as by the economic and social dynamics that drive the development and deployment of digital technologies, and it has experienced various structural changes. This digitally restructured public sphere provides the background for my analyses in the subsequent chapters. Though social media platforms play a significant role in the restructuring processes, I will here focus on the more general effects of digital media on the public sphere

7 For example: Holst/Moe (2021), Mendonça (2015), Rousiley (2018), Strandberg/Grönlund (2018), Wright et al. (2018).

8 Of course, communication is not the only mode of participatory practice affected by the digital transformation. Especially in view of the current trend to open up the deliberative systems approach in favour of democratic systems, a constriction of deliberative theory to the communicative level (cf. Antic 2017: 139) should be avoided.

before I zoom in on the more specific logics of social media platforms and their relevance for and impacts on deliberative systems.

3.1 The Digital Constellation

With their presentation of the digital constellation, Berg and colleagues "aim[…] to reflect on the conditions under which politics takes place in a society that is characterised by the use of digital technologies" (Berg et al. 2020b: 18). In other words, a society that habitually uses digital technologies to such a degree that it can be said to be characterised, shaped, distinguished and recognised by these habits can be described in terms of the digital constellation. This digital constellation is now the context in which Berg and colleagues propose to analyse how politics take place in these societies.

In their introduction of the digital constellation, Berg and colleagues emphasise that

> [t]he digital constellation is explicitly not to be understood as an elaborated research programme or even an independent theory. Rather, it serves as an epistemological guide that helps to structure theoretical reflection on the interrelationship between digitisation and political questions. (2022: 256)

This epistemological guide is designed to enable researchers to address questions such as: What technical factors have a formative significance for society and in what way? What opportunity structures are formed and consolidated by these technical factors? How do politics affect the technologies, their development and their social realisation? And what social or political practices prevail and become self-evident in light of this socio-technical environment? (cf. Berg et al. 2020b: 17–18). Thus, the concept "link[s] political science – especially political theory – with the discussion about digitisation and society" (ibid.: 6).[9] This political focus, in turn, makes the concept of the digital constellation compatible with the deliberative systems approach. I will proceed to conceptualise

9 Ideas regarding the latter discussion are drawn from theoretical and empirical research in sociology, political science and German legal studies. The concept has thus far been developed and discussed with a decided focal point on the German scientific community.

the digital constellation and to then demonstrate its compatibility with the deliberative systems approach.

One of the core ideas of the digital constellation is that the digital and the non-digital sphere are irreversibly interwoven in societies that operate and communicate under the conditions of the digital transformation. On the one hand, digital communication presupposes the physical world, since "things that are communicated [via digital means] involve real people who take up, occupy, share, and contest physical space" (Parkinson 2012a: 1). On the other hand, "the digital increasingly structures the contemporary world" (Berry 2014: 209).

This interwovenness affects both the individual and the societal level. On an individual level, "the ways in which we make sense of the world phenomenologically become necessarily entangled with the constraints, affordances and power-relations that are features of media as infrastructures for communication" (Couldry/Hepp 2017: 7). In this context, notions of a "new new media ontology" (Lash 2007) – where "we can no longer think of our lives as *mediated* by information and software", since these lives are "increasingly *constituted* by or *comprised* of" the latter (Beer 2009: 987, emph. added) – have been raised. "Even if we do things without directly using media, the horizon of our practices is a social world for which media [that is, tools of mediatisation] are fundamental reference-points and resources" (ibid.). This translates to the social level. The social world has been "changed in its dynamics and structure by the role that media continuously (indeed recursively) play in its construction" (Couldry/Hepp 2017: 15), and it "has significantly more complexity when its forms and patterns are, in part, sustained in and through media and their infrastructures" (ibid.). In this constellation, "[t]he human-machine bond shapes our common life together, our modes of social integration and communication" (Hofmann 2019a: 5), and "[e]ncounters between individuals and the technologies that connect them proliferate with a myriad of consequences" (Feenberg 2017: 9). Overall, the digital and the physical world have become irreversibly intertwined.

The concept of the digital constellation provides a holistic approach to the digital transformation. It "does not interpret digitisation as a domain phenomenon but as a comprehensive, multifaceted process in which society and technology interact dynamically and continuously in concrete ways" (Berg et al. 2020: 18). It commences from the perspective that society and digital technologies are interrelated:

> digitisation can only be adequately understood as a socio-technical transformation process in which every innovation, in its genesis, is linked to numerous technical and social premises and is in turn accompanied by a variety of social upheavals, which provide the starting point for further processes of development. (Schrape 2021a: 82, author's translation)

The argument that society and technology are interrelated has been directly or indirectly formulated by several authors (cf. Baecker 2018; Feenberg 2017; Nassehi 2019). To capture this interrelation in a term, Berg and colleagues "refer to the concept of constellation as it was applied in the tradition of the Frankfurt School", mainly referring to Adorno and Habermas (2022: 257).[10]

Berg and colleagues draw from those ideas the common assumption "that a transformed social constellation would put previously valid factors into a new relationship with each other, one which would be accompanied by a necessity to adapt analytical and normative patterns of thought" (Berg et al. 2020b: 19). The digital constellation therefore is the constellation transformed by digitisation, in the context of which "sedimentations of social practice and institutions previously assumed to be fixed are placed in new social relations, which necessitates the adaptation of analytical and normative patterns of thought" (Berg et al. 2022: 257). In order to investigate this new and evolving constellation in more detail, Berg and colleagues propose three levels of analysis: properties, affordances and social configurations.

The first level focusses on the *properties* of digital technologies.[11] Archivability, algorithmic processability and networkability are "particularly noteworthy" (Berg et al. 2020b: 19) examples of properties. Archivability – or, conveyed in tech language, storability – refers to the possibility of storing data that reflect the entire experienceable world in zeroes and ones (cf. Lenk 2016: 228). Both digital images of non-digital phenomena and digital data that have no non-digital counterparts can be stored using digital technologies (cf. Brumme 2020: 77–78). These data archives provide the basis for the algorithmic processing and the statistical analysis and comparison of these data (cf. Lenk 2016: 228). Thus, digital technologies can be interpreted as acting entities that can be tasked with nearly any kind of activity, including computation, simulation and

10 For a more detailed account, see Berg et al. (2020b: 19).

11 In a similar attempt to enable concrete descriptions and developments connected with digitisation, Brumme conceptualises "das Digitale" as a structure that can be understood as medium, storage and actant (cf. 2020: 77–78). These three characteristics resemble the properties of the digital constellation as it is defined by Berg et al. (2020b).

navigation (cf. Brumme 2020: 78). Lastly, networkability refers to the mediating qualities of digital technologies. It arose with the emergence of the internet, which resulted in an explosion of world-wide communication between humans and humans, between humans and machines and between machines and machines (cf. Lenk 2016: 228). The capacities for storage, connection and processing are "ever-expanding" (Rieder 2020: 35) and represent "abstract properties [that] form a constant that can take on different forms in connection with action practices and contexts" (Berg et al. 2020b: 20). The mediating qualities of digital technologies give a structural, network-like character to the digital constellation that enables, forges and stabilises connections throughout society (cf. Brumme 2020: 78). Storability, processability and networkability form the foundation for any other properties of digital technologies, for example, for the possibilities that social media platforms provide for users to connect and interact with each other (see chapters 4 and 5).

The second level of analysis addresses the *affordances* realised in practice.[12] Berg and colleagues conceptualise affordances as "collectively established forms of action that result from the perceived spaces of possibility for digital technologies" (Berg et al. 2020b: 20). Behind this definition lies "the consideration that technology does not determine social structures but provides structures that make practices available" (ibid.). More specifically, these structures "shape the possibilities for using specific technologies in the perception of social actors" (Berg et al. 2022: 257–258). The afforded modes of action include both the "proper" use of the technology and the resistant appropriation (cf. ibid.: 258). Affordances therefore resemble "a multifaceted relationship structure between a technical artefact and its user, which, in a concrete situation, enables or limits potential outcomes" (Berg et al. 2020b: 20). By connecting technology and social practices in this way, affordances make themselves accessible for political thought:

12 Affordances are the issue of a very large field of research, and they could even be understood to constitute their own sub-discipline. Having been proposed in 1960 by Gibson (2015), the concept of affordance has been used in many contexts and many disciplines. Works that are central to research concerning human-computer interaction include Hutchby (2001), Norman (2002) and Evans et al. (2017). An overview over the manifold use of the concept has been given by Heras-Escribano (2019). Due to the complexity of this field of research, I will limit my remarks to what is explicitly addressed by Berg and colleagues regarding the second level of the analysis of the digital constellation. They base their conception of affordances on Hutchby (2001), Latour (2007a), Dahlberg (2011), Evans et al. (2017) and Deseriis (2020).

> While the affordances of a technology always refer to concrete situations and depend on the subjectively perceived context that exists in that situation, the description of affordances realised in practice is, however, in political science terms, extended to a generalisation of the affordances that were realised in a similar way under similar conditions and from which path dependencies that can be reflected on for society as a whole result. (ibid.)

Thus, Berg and colleagues arrive at their proposal to analyse the affordances of technologies in the digital constellation and come to "a generalised statement about collectively established forms of action that result from the perceived spaces of possibility for digital technologies" (ibid.). An example of such a generalisation is many-to-many communication (cf. ibid.), a conceptualisation of communication shaped by interaction processes between a large number of participants and content moderation techniques that, in turn, have been made possible by the storability, processability and networkability of digital technologies: communication can be stored as data points that are then processed and ordered according to specific criteria; users can specify these criteria in queries when they access the data via the network, and further data processing facilitates the prioritisation of data for each query. Such affordances also shape the communication processes within deliberative systems that operate within the digital constellation.

The third level of analysis concentrates on *social configurations* or political transformations. These (re)configurations result from the socio-technical change processes that are interlinked with the other two levels (cf. ibid.: 20). "Technical characteristics and political dynamics are then firmly linked in the process of adaptation and produce relatively stable socio-structural phenomena" (ibid.). A prominent example of social configurations given by Berg and colleagues (ibid.) is the platform economy as an advertising-influenced infrastructure of interaction. Another societal configuration can be seen in the public sphere that has been structurally transformed under the conditions of the digital constellation.[13] These structural transformations are based on the digital infrastructures that enable the connections between individuals. The infrastructures have historically been built upon the basis of the World Wide Web, and they have been somewhat stabilised in their path dependency – meaning that they would be very different in appearance and function if

13 In chapter 3.2, I will elaborate on the various aspects of the digitally transformed public sphere.

they were to be built from scratch today. Nonetheless, they are constantly developing, as new codes are written, new devices are invented, new use cases emerge and new affordances develop. Hence, the material characteristics and the protocols of these infrastructures are not the only aspects shaping the digitally transformed public sphere as a phenomenon; the usage habits and conventions of all players involved also play a formative role and are indeed themselves heavily path-dependent.[14]

In sum, the concept of the digital constellation provides a holistic approach to the digital transformation. It captures the dynamic and continuous effects of digital technologies throughout society, while it emphasises the interwovenness of digital and non-digital spheres. The three levels of analysis enable scholars to explore the societal and political implications of the digital transformation in more detail. In the subsequent chapters, I will use the concept of the digital constellation to analyse the effects of digital technologies – specifically social media platforms – on deliberative systems.

3.2 The Restructured Public Sphere

As I have already indicated, many scholars of the deliberative systems approach regard the public sphere – or public space, as it is often termed in the deliberative systems approach – as central to the system. These scholars "place citizens and their narratives at the heart of the model" (Bächtiger/Parkinson 2019: 17), while democratic institutions, and especially the parliament, become less prominent (cf. Gaus 2016: 517). The public sphere therefore represents a vital part of any deliberative system it is part of, and a structural transformation of such a sphere consequently affects the systemic processes.

Moreover, the public sphere is especially affected by the digital transformation. Consequently, the digital transformation has more than once[15] been dis-

14 The concept of "networked publics" presented by danah boyd (2011) seems similar on first sight and might be considered a societal configuration of the digital constellation as well. However, the concept appears narrower than what I understand as the digitally restructured public sphere, as it seems to still be focussed on interactions in the digital realm. Deliberative systems themselves are not configurations of the digital constellation, since they are by definition issue-dependent and therefore temporally limited to the decision-making process.

15 Cf. Eisenegger et al. (2021), Imhof (2011), Muldoon 2022: 141–142), Seeliger/Sevignani (2021c), Seeliger/Villa Braslavsky (2022).

cussed as the inducer of a new structural transformation of the public sphere – not least by Jürgen Habermas (2020, 2021) himself, who had first coined the term of a "structural transformation of the public sphere" (Habermas 1993). As I indicated in chapter 2, Habermas is one of the authors whose works provide a foundation for the systems approach. He recently described the contribution that political communication in the public sphere makes to the whole democratic process as one that is essential but limited – essential because the public sphere is the only sphere of truly inclusive political opinion- and will-formation, and limited because the public sphere's scarcity of collectively binding individual decisions (cf. Habermas 2022: 150–151). But how do Habermas and, based on his works, deliberative systems scholars conceptualise the public sphere?

In an earlier work, Habermas depicted the public sphere as "a network for communicating information and points of view (i.e., opinions expressing affirmative or negative attitudes)"; he added that "the streams of communication are, in the process, filtered and synthesized in such a way that they coalesce into bundles of topically specified *public* opinions" and that the public sphere "is tailored to the *general comprehensibility* of everyday communicative practice" (Habermas 1996: 360, orig. emph.)[16] The communication structures of the public sphere are anchored in the individual's lifeworld by the "more or less spontaneously emergent associations, organizations, and movements" (ibid.: 366–367). These are "attuned to how societal problems resonate in the private life spheres, [and they] distill and transmit such reactions in amplified form to the public sphere" (ibid.: 367). In its structure, the public sphere

> represents a highly complex network that branches out into a multitude of overlapping […] arenas. Functional specifications, thematic foci, policy fields, and so forth, provide the points of reference for a substantive differentiation of public spheres […]. Moreover, the public sphere is differentiated into levels according to the density of communication [and] organizational complexity […]. Despite these manifold differentiations, however, all the partial publics constituted by ordinary language remain porous to one another. (ibid.: 373–374)

16 The study of public opinion, in fact, is a field of research in its own right, and it has been for a long time (cf. Minar 1960). Newer, very comprehensive works on public opinion that include many thoughts on how to introduce digitisation research into the subject have been presented by Slavko Splichal (1999, 2022).

The public sphere, with its network of more institutionalised discourses, represents the core of civil society (cf. ibid.: 367). Together, civil society and the public sphere generate impulses for the decision-making in the political centre (cf. ibid.: 442). Moreover, they need to have the capabilities to "ferret out, identify, and effectively thematize latent problems of social integration (which require political solutions)" and to find "sufficient occasion to […] introduce [these problems] via parliamentary (or judicial) sluices into the political system in a way that *disrupts* the latter's routines" (ibid.: 358).

The deliberative systems approach's conception of the public sphere, or public space, is often explicitly based on Habermas's conception, or it is at least quite similar to his conception. In two of the first publications on deliberative systems, Dryzek (2009: 1382–1383) leans on Habermas in conceptualising public space. He contrasts public space with empowered space (cf. ibid.: 1385), and he describes the former as "ideally hosting free-ranging and wide-ranging communication, with no barriers limiting who can communicate, and few legal restrictions on what they can say" (Dryzek 2010: 11). Public space "thereby featur[es] a diversity of viewpoints" (Dryzek 2009: 1385). Similarly, Simone Chambers portrays the public as deliberating in "a decentred, plural complex set of overlapping conversations taking place in multiple and divergent settings", the outcomes of which are "political opinions about what is to be done" (2012: 64). Moreover, Parkinson (2012a) distinguishes between a formal and an informal public sphere, with the latter resembling Habermas's civil society. Specific actors have to make each of these parts aware of the narratives circulating within the other part (cf. ibid.: 37). Discussing the legislature in deliberative systems, Simon Beste (2016) likewise leans on Habermas. He stresses the importance of "the permeation and infusion of input from the public sphere into the legislature", since "the legitimacy of the institutionalised core of the political system depends on its responsiveness towards the demands of the public sphere in order to maintain a critical level of legitimacy" (ibid.: 298).[17] And, finally, Milstein emphasises the public sphere's role as "a crucial resource for monitoring power" (2021: 12).

> Precisely because the public sphere is relatively "formless," it has a unique ability to afford the greater reflexivity and communicative freedom necessary for the mobilization of demands, issues, awareness, and "counterknowl-

17 For a similar argument, see Chambers (2012: 64–65).

> edge" that may escape more formally institutionalized parts of the deliberative system. (ibid.)

The conceptualisation of the public sphere, or public space, within the deliberative systems approach thus appears to be very similar to – if not explicitly based on – Habermas's concepts of civil society and the public sphere. It therefore appears legitimate to apply the idea of a structural transformation of the public sphere to the respective parts within deliberative systems, as well, and thus connect these theoretical concepts.

This conception of the public sphere can now be connected with digitisation research. More specifically, a theoretical connection can be established between the structural transformations of the public sphere and the digital transformation as portrayed in digitisation research.[18] In *The Structural Transformation of the Public Sphere* (1993), Habermas describes various consecutive transformation processes that have changed the public sphere over time. Since the publication of this work, another structural transformation of the public sphere has occurred, according to Seeliger and Sevignani (2022: 6) and Habermas (2022: 145) himself. One of the driving factors of this last transformation is the rise of digital technologies.[19] Habermas attributes a "revolutionary

18 Although doing so appears to be rather obvious, thus far only German academia seems to have considered this line of thought, most importantly by means of two collections whose respective angles of approach differ. First, Eisenegger et al. (2021) edited a collection of articles authored mostly by scholars of the communication sciences. These articles make use of the Habermasian term "structural transformation" and integrate it into the terminology and methodology of media and communication studies – a very interesting approach, but not particularly compatible with my own theoretical framework. In the same year, Seeliger/Sevignani (2021b) published their collection of articles by authors from sociology and political science. The authors in this collection include Jürgen Habermas himself, as well as Thorsten Thiel, who, in another capacity, co-conceptualised the "digital constellation", as presented above (cf. Berg et al 2020b). I will primarily base my descriptions of the digital transformation of the public sphere on the latter collection.

19 When analysing transformation processes in his original work from 1993, Habermas uses different frames of reference, one of which pertains to technical distribution media and their impact on communicative action within the public sphere (cf. Seeliger/Sevignani 2022: 6). In the analysis of this new structural transformation of the public sphere, the media- and technology-related frame of reference address the effects of digitisation (cf. Seeliger/Sevignani 2021b). It is the frame in which the ambivalence of this newest structural transformation becomes most apparent (cf. Seeliger/Sevignani 2021c: 33) and the frame that is most relevant to my own analyses. In the following, I

character" to the emergence of the new, digital media and describes them as a turning point in the history of media that is comparable to the introduction of the printing press (ibid.: 158). The social world is "changed in its dynamics and structure by the role that media continuously (indeed recursively) play in its construction" (Couldry/Hepp 2017: 15), for our daily communication is now composed of a weave of face-to-face and mediated communication (cf. ibid.: 16). Consequently, the complexity of communication increases; "the networking of actors is more complex, processes of self-organisation are facilitated by improved observability and enforced by the rising heterogeneity of public actors" (Waldherr 2017: 541, author's translation).

There are different aspects of digitisation that shape the structural transformation of the public sphere and increase the complexity of the social world – many of which have been presented by Seeliger and Sevignani (2021c: 31). I will devote the remainder of this chapter to delving a little deeper into these aspects. I will thus set the scene for my analyses of communication processes on social media platforms – pointing out the conditions under which users communicate in digital public spaces and how these communication processes are embedded within wider societal processes, even beyond deliberative systems. A large share of these communication processes is mediated through social media platforms. Therefore, even though these platforms are not the focus of this chapter, they will be mentioned repeatedly. Yet, deliberative systems and public spheres under the conditions of the digital constellation reach far beyond the communication on social media platforms. Understanding their inherent dynamics is fundamental to understanding the role and influence of social media platforms, with their specific relevance, logics, architectures and structures.

For the various aspects of the digital transformation of the public sphere that I want to address, I will draw from, and add to, Seeliger and Sevignani's differentiation.[20] I will present these aspects in the analytical framework of the digital constellation, while adding and adjusting some facets; I will also comment on the concept of the digital constellation from a deliberative systems perspective. Nonetheless, I will avoid writing a treatise on everything that has

will focus on this frame of reference and describe how the introduction of digital technologies affects the fundamental structures of the public sphere.

20 I will not recount all the aspects they present but will focus on those that are relevant for my argument regarding deliberative systems.

ever been said about digitisation and its influence on the public sphere. Instead, I will present merely a brief overview of the most relevant aspects of the digital transformation of the public sphere, thereby connecting my own thoughts on deliberative systems with those from adjoining research fields, while focussing on the public sphere.[21] Throughout the remainder of this book, I will repeatedly refer back to the points I make here.

First, public spheres under the conditions of the digital constellation become *geographically unbounded*. In scientific literature as well as more journalistic works, one commonly finds the notion that digital communication makes geographical distances obsolete and therefore facilitates political communication.

> Indeed, one of the strengths of Internet technologies for politics is the way they remove the physical constraints of forming publics over vast geographical distances, or between administrative boundaries. Not having to meet face-to-face means that people can participate in […] controversies without the burden of being physically present. (Hendriks et al. 2016: 1121; cf. also Strandberg et al. 2019: 45)

The worldwide use of social media platforms increases the potential for global discussion of issues and transnational alliances (cf. Laux/Schmitt 2017: 517). But these platforms also represent "a stage upon which local communities are seeking to reshape and influence place-based controversies", as Hendriks and colleagues (2016: 1120) have found when analysing the communication processes on Facebook in the context of a local, controversial coal seam gas project in Australia. Indeed, geographically close ties have been proven to be overrepresented on Twitter, with long-distance ties simultaneously being underrepresented (cf. Takhteyev et al. 2012: 76–77).[22] Nonetheless, participants can use social media platforms to convey and organise communication processes of any scale (cf. Strandberg et al. 2019: 45). Communication can

21 For example, an attempt to define the public sphere in a comprehensive manner would open yet another large field of political theory. The same goes for reconstructing the argumentation of *The Structural Transformation of the Public Sphere*. I will therefore limit my explanation to what is absolutely necessary for my own argument.

22 This is the case even though the platform's users are distributed across the world and its architecture of one-way followership encourages weaker ties between the users, allowing for less dependence on local proximity or in-person contact than other platforms (cf. Gruzd et al. 2011: 1296).

become detached from the physical context; "[l]ocal politics, the politics of proximal communities, can in that way be meshed with global governance, connecting us with others who share our concerns, who are affected by similar problems, regardless of where they are" (Jungherr et al. 2020: 213). From a deliberative systems perspective, this increases inclusivity, since any person who has functioning and unfiltered internet access can in principle participate, independently of geographical distances and other physical constraints. Public spheres and the deliberative systems containing them are therefore not limited to a country – at least at the level of the civil society and public sphere – even though the actual decision-making takes place separately in the various national legislative bodies.[23]

The second important aspect of how digitisation shapes the structural transformation of the public sphere was presented by Seeliger and Sevignani (2021c: 30–32); it regards the *many-to-many communication* and the consequent *decentralisation* of the public sphere. This aspect requires that I elaborate on some points I already made when introducing the digital constellation and to lay the groundwork for subsequent aspects. As I indicated above, the many-to-many communication afforded in the digital constellation provides the possibility of "multifaceted communicative connection [that is] open to networking that facilitates the spontaneous exchange of possible contents between potentially many users" (Habermas 2022: 159). Other deliberative theorists have noticed this shift as well:

> Technologically, a fundamental difference between the mass media and the digital era is the shift from broadcast (one-to-many) to networked (many-to-many) communication, with effectively zero marginal costs of information and communication. The digital infrastructure of the public sphere is defined by this distinctive flow of information in which there are many more providers and distributers of content; people thus enjoy vastly greater choice among kinds and providers of information; and particular content can be directed (or targeted) by providers, advertisers, social media platform companies, or other actors to particular users or groups of users. (Cohen/Fung 2021: 36)

All these actors and users "encounter each other as participants in communicative exchanges on spontaneously chosen topics who are in principle equal and

23 Habermas attributes "ambivalent explosive power" to this tension between transnational public spheres and nationally limited legislation (2021: 493).

self-responsible" (Habermas 2022: 159). This aligns with deliberative systems scholars' idea of informal political talk within private and public spaces.

Many-to-many communication transforms the roles of all participants from traditional media audience members to potential authors (cf. Habermas 2022: 166; Ritzi 2021: 307). While this transformation is based on the properties of storability, processability and networkability, it only emerges because people actually use these technologies and develop their own procedures and habits in using them. For example, internet users find ways to use social media platforms to comment on news items that have been published by traditional media actors; these ways are gradually institutionalised within the user communities, while platforms try to facilitate them by adapting their infrastructures. In consequence, more actors have access to public communication, and "any topic or statement can in principle participate in the game of public relevance; gaps and errors in mass media reporting can be identified and spread more immediately than before" (Schrape 2021b: 14–15). A large part of the content is published on social media platforms, which makes the latter an important sphere of public discourse.

The communications of all the users who are promoted to authors lead to a restructuring of the public sphere, a decentralisation of communicative channels.[24] Whereas traditional mass media and their professional staff used to be the dominant contributors to public communication, in the digital constellation anybody can potentially contribute content that has immense outreach. Additionally, many deliberative sites are transformed and new sites emerge (cf. Waldherr 2017: 538). A large number of informal deliberative sites within the public sphere have been transferred into the digital realm and are thereby restructured to fit the requirements of digital communication. Other sites are becoming hybrid; a digital sphere is emerging that supplements and partly mirrors the face-to-face interaction. Still other sites are genuinely new spaces that are enabled solely by the properties and affordances of digital technologies and that have no clear offline counterpart (cf. Forestal 2021: 3). These sites usually are of large scale, with international participants, and are global in scope (cf. Ercan et al. 2019: 21).

From a deliberative systems point of view, this decentralisation affects the respective parts of the system in terms of both network and sequence. Networks presumably become more fine-grained, with more connections per site or individual and fewer hubs that have a considerably higher-than-

24 Habermas (2022: 166) even diagnoses an "unstructured public sphere".

average number of connections. The sequences of the system will all include ongoing informal communication that is accessible by political decision-makers and therefore potentially introducible into the decision up until the very last moment.

In many-to-many communication, the transmission of contents is less controlled via journalistic codes of conduct and legal regulations due to the lack of professional sluices (cf. Habermas 2021: 494). Simultaneously, additional moderation techniques have been introduced by new actors, such as social media companies. Combined, these processes lead to a supposed *fragmentation of the public sphere*. The dominant digital moderation techniques generate personalised outputs for each of the users.[25] Consequently, content is presented and consumed not according to its societal relevance but rather with reference to the user's individual patterns of interaction and preference. Gatekeeping and agenda-setting for the consumption of specific contents are largely relegated to the domain of algorithmic systems (cf. Seeliger/Sevignani 2021c: 30; Maschewski/Nosthoff 2021: 338–339). There are many scholars who have published on the perceived problems with this tendency (most prominently, Pariser 2011; Sunstein 2002, 2017), and the notions from these works have become widely referenced by journalists and politicians. Consequently, there has been a huge societal and academic discussion about how these moderation techniques can be controlled and adapted in the least problematic way (with regard to democratic norms of all shades) and about who should be entrusted with the task of controlling and adapting. Put very briefly, scholars have identified a loss of a common frame of reference among citizens and a fragmentation of the public sphere, and they have delivered various empirical proofs and normative assessments of this diagnosis (see chapter 5.2). From a deliberative systems perspective, however, the differentiation and homogenisation of sites and site clusters is not necessarily a problem as long as these sites are adequately connected to the wider system. I will repeatedly return to and elaborate on the effects of content moderation techniques on societal discourse – from a deliberative systems perspective – throughout the remainder of this book.[26]

A third aspect of how digital technologies shape the structural transformation of the public sphere concerns the *acquisition, analysis and utilisation of user data* (cf. Seeliger/Sevignani 2021c: 31). These processes have become

25 I will elaborate on these techniques in chapter 4.1.

26 See, in particular, chapter 5.2.2 and chapter 6.1 through 6.3.

widespread customs among providers of internet services, including the platform companies that supply large parts of the digital communication infrastructure. Information is both collected and stored as data points, which may be analysed to identify patterns.[27] The possibility of collecting, storing and processing data has resulted in an ever-growing number of affordances and ideas on how these data may be used for different purposes. In turn, ever more kinds of data are being collected and processed, and ever more techniques are being developed to do so. Information on communication, consumption, movement, health, recreational activities and any other kind of quantifiable data is being collected, stored, processed and traded in order to turn a profit – thus far, mainly by selling ads.[28] Information has thus become a resource in the sense that it is "an input into [a] decision-making, production, or bureaucratic process" (Braman 2009: 12).

This resource is exploited by different actors for different purposes. Firstly, this kind of data use is the central source of profits, especially for social media platforms. In fact, the design of these platforms "directly reflects the epistemic needs of the data scientists whose analytic operations are key to their commercial model: to target information to groups of friends, to track shares and likes in the aggregate" (Marres 2018: 435). By controlling large datasets and selling such predictions based on these data, social media platforms wield power over clients, competitors and users (cf. Cohen 2017; Pistor 2020; Zuboff 2019). Secondly, data are collected and used by state executives in order to exert power, for example, in performing administrative or executive tasks.[29] Thirdly, representational bodies such as political parties analyse user data in order to identify the preferences of their constituents. These data include not only demo-

27 These patterned data – and data about patterns – add context and structure to the information, as Braman (2009: 15) explains: "Information from this perspective has a past and a future, is affected by motive and other environmental and causal factors, and itself has effects".

28 In chapter 4.1, I will elaborate on how social media platforms collect and process data.

29 Foucault reasons, in fact, that governments and political actors always had to rely on public opinion research and statistical analyses to some degree: "Government […] entails more than just implementing general principles of reason, wisdom, and prudence. Knowledge is necessary; concrete, precise, and measured knowledge as to the state's strength. The art of governing, characteristic of reason of state, is intimately bound up with the development of what was then called either political statistics, or arithmetic; that is, the knowledge of different states' respective forces. Such knowledge was indispensable for correct government" (1979: 245–246).

graphics but also the contents and engagement data of the users. In this way, "casual speech acts have turned into formalized inscriptions" (Couldry/Hepp 2017: 15), and "[c]ommunications networks have gradually been transformed into sensing networks, organized around always-on mobile devices that collect and transmit highly granular streams of structured information via proprietary interfaces and protocols to powerful, proprietary machine learning systems" (Cohen 2017: 143).

This has consequences for democratic representation:

> increasingly, a notion of democracy is being articulated in which the reading of singularised preferences, rather than the civic expression of opinion through active participation, is being interpreted as a democratic principle […]. The idea of representation as an active and reciprocal process […] is therefore withdrawn […]. The identification of preferences comes to occupy the place once occupied by political contestation […]: representation without the public sphere. (Staab/Thiel 2022: 140)

Thus, the analysis of data that are generated in the course of society's use of digital technologies is adding to – if not supplanting – public opinion research. Michel Dormal (2021) has presented the implications of this process. On the one hand, data on the opinions of users of digital technologies can be retrieved without actively approaching the users and, therefore, seemingly without influencing the observed objects (cf. ibid.: 17). Of course, this perspective omits the many other ways users and data are being influenced.[30] On the other hand, configurative processes seem to be weakened by this new, datafied form of public opinion research (cf. ibid.: 17–18). These configurative processes include the development of relations, the transformation of constellations, formative action and active participation (cf. ibid.: 10). Moreover, algorithmic systems analysing the data on individuals are perceived as knowing more about individuals' motivations than the individuals themselves, which affects how individuals enter into formative processes in the first place (cf. ibid.: 18).

In a similar way, data on digital communication are gradually supplanting opinion polling in news coverage. "Social media posts and quantified metrics are interpreted by journalists as measures of public opinion, which impact coverage of candidate qualities and qualifications and assessments of a campaign's fortunes and competitiveness – both of which shape public attitudes

30 I will address these ways throughout the rest of this book.

and behaviours, including voting" (McGregor 2019: 1081). The public sphere is still present in this scenario – embodied by the mass media. However, it portrays communications and engagement metrics on digital social media platforms as emergent representations of public opinion, despite the fact that the participants on these platforms are not even representative of the public at large.[31]

From a deliberative systems point of view, this seems problematic. For instance, as Goodin describes, the mechanical collection and counting of information without deliberation misses additional information that can thus help assess the authenticity of the information and that can only be gathered in actual discourse: "Sometimes the extra information concerns the reliability of our informants [and other] times the extra information concerns the proper interpretation of the information that others are conveying to us" (2008: 104–105). Furthermore, "[o]nce we abstract the world into numbers and data, we remove existing narratives and new stories are then told with the data" (Beer 2020). Yet with these additional pieces of information provided in discourse, participants can adjust for known biases of a speaker; they can avoid a collective solution that is too cautious, because all contributors have individually underrepresented or undersold their real opinion; they can avoid unnecessary decisions built upon actions of others without knowing the reasons for those actions; and they can promote action by laying open reasons for it (cf. Goodin 2008: 95–104). "In short: pooling information discursively yields extra information, and that extra information proves crucial to reaching the right conclusions" (ibid.: 104–105).[32]

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31 Observations and thoughts about such datafied versions of representation have also been presented, for example, by Splichal (2022), Vogl (2021b) and Zuboff (2019).

32 Goodin argues, moreover, that "[a]ggregation is fine for facts, but deliberation is required when values come into play. In so far as facts and beliefs about facts are concerned, simply adding up the votes will usually yield the right results; people ordinarily ought rationally to alter their own beliefs as to the facts of the matter accordingly, once the votes are in. But where values are also involved, the grounds for respecting mere aggregations of votes collapse. More reflective and deliberative processes, taking account of reasons rather than merely counting people's own bottom-line votes, are then required" (2003: 227). While I agree that values can only be negotiated discursively, I do caution against the notion of aggregation being fine for facts. The public debate and the academic debate on "fake news" and disinformation strategies have likewise made it blatantly obvious that facts are contextual and interpretable and must be subject to discourse – though this notion is much older.

Moreover, the configurative processes Dormal describes are central to the forms of communication envisaged by deliberative theorists. Inferring public opinion[33] from collected and processed data on expressions of individual, singularised opinions technically "emulates" the processes of group constellation and mobilisation, rhetoric address and symbolic framing (cf. Dormal 2021: 18). It foregoes the formative processes of the development of relations, the transformation of constellations, formative action and active participation. It foregoes the actual deliberations within the sites, the transmissions, the "sluicing"; it disregards the characteristics of the various sites, their connections, their division of labour. Issues and perspectives are not fed into the system by groups of participants that weigh the various arguments in an ideally reasonable manner. They are introduced not through the aggregated demands of diverse interest groups but through the patterns and irregularities in datasets (cf. Ulbricht et al. 2018). Thus, issues and perspectives that would never have been brought up if not for data science might be addressed (cf. Dormal 2021: 17). This provokes the question of whether issues and perspectives are being presented by groups and individuals that are potentially subject to decisions, or whether they are indirectly selected by data scientists who design the algorithmic systems that, in turn, analyse the datasets (cf. Ulbricht et al. 2018).[34] Algorithms would produce the groups to be represented; configurative processes would recede to specialised second order arenas, such as algorithmic audits, that negotiate the guidelines of algorithmic representation (cf. Dormal 2021: 17–18). From a deliberative systems perspective, such procedures are problematic, since deliberative systems, by definition, must be based on communication and therefore possess at least the potential for deliberative qualities.

Here, a related aspect of how digital techniques shape the public sphere can be added: the *merging of public and private*. Firstly, public discourse is conducted largely on platforms provided by private companies, and therefore it must answer not only to state law, but also to the rules and codes of the host

33 Saying this, of course, requires setting aside the fact that something like a unified public opinion that can be inferred by any means might not actually exist.

34 Arguably, the filtering and selection of issues and perspectives from a data pool is a behavioural pattern that can also be attributed to political professionals selecting the perspectives they cite according to their political agenda. However, neither data scientists nor the algorithmic systems are identified as political actors with political intentions, and their selections might therefore be construed as neutral and apolitical, even though they are not (cf. Risse 2023: 94–97).

platform.[35] Secondly, "[u]tterances previously expressed offhandedly are now released into a public domain where they can have far-reaching and long-lasting effects" (van Dijck 2013: 7; similarly, Moore 2018: 184). Again, social media platforms are the primary infrastructures in this regard. Considering that these data may be interpreted as a proxy for public opinion and that everyday talk can thus be taken as a vote, the formalisation of formerly private, informal remarks reaches yet another level. Thirdly, some political actors use their digital, far-reaching public channels to flood the public sphere with private messages and actively undermine any public debate and opinion formation. "Failure to adopt the appropriate standards of public speech that should accompany contributions to public problem solving is part of a political strategy aimed precisely at undermining the democratic function of the public sphere" (Chambers 2023: 66). Fourthly, state institutions process and even publish information on the private lives of individual citizens in large datasets to gain information on "the public"; they do this in pursuit of economic, state-executive or political purposes, as I described with regard to the third aspect. Lastly, and in a similar fashion, public and private merge on the content level of these discussions. "The nature of political talk in everyday online communities dedicated to lifestyle issues, topics and needs (e.g. TV/Films, parenting, personal finance) tend[s] to be deeply rooted in the personal" (Wright et al. 2018: 79). In consequence, "the structural transformation of the public sphere simultaneously transpires to be a structural transformation of the private sphere – while the public is being privatised, the private is being publicised" (Seeliger/Sevignani 2021c: 31, author's translation). Again, these merging processes re-

35 The relation between social media platforms and the public sphere is subject to discussion. Some scholars argue that "[c]ommercial social media do not constitute a public sphere and a participatory web" (Fuchs 2014, cited in Feenberg 2017: 90). It might be more to the point to dub them "semi-public platforms" (Muldoon 2022: 141). For they are "public spaces of political communication that utilise privately owned and controlled forums in which companies set the digital architecture, format and rules for communication" (ibid.). Thus, "they are neither public nor private in the traditional sense of these terms", but "form a new hybrid space" (ibid.). With regard to deliberative systems, the actual label of social media platforms does not signify much. Their characteristics and logics that influence communication processes within and across sites, as I describe them throughout this book, are of much more importance. In chapter 6.1, I will specifically elaborate on the effects of legislation and regulation on deliberative systems.

sult from the interplay between technical and societal developments, between properties, affordances and configurations.

Deliberative systems scholars have also addressed the merging of public and private. In one of the first works on deliberative systems, for example, Mansbridge (1999) discusses the question of where to draw the line between what is private and what is of public interest. "What the public ought to discuss is contested and essentially contestable" (ibid.: 211). Generally, she supports the notion that "some matters, hitherto thought too intimate for the public to discuss, or of so little importance that they did not need to be discussed by the public [are] matters on which the collective, the public, ought to deliberate" (ibid.). Moreover, the expressions used when talking about private experiences and sentiments, such as emotions or humour, appear to "foster a communicative environment that was about learning rather than winning or convincing", thus promoting "solidarity rather than polarization among participants" (Graham 2009: 168).[36] Therefore, from a deliberative point of view, the tendency of online communication to merge politics with private matters seems potentially conducive to deliberative quality and systems.

Another aspect that Seeliger and Sevignani (2021c: 32) present with regard to digitisation's impact on the public sphere is the reconfiguration and changing role of *journalism and traditional media*.[37] Habermas ascribes them a twofold role within the public sphere. On the one hand, he sees traditional mass media playing a mediating role within society:

> In view of the complexity of society, the media are the intermediary which, in the diversity of perspectives of social situations and cultural forms of life, whittle out an intersubjectively shared core from among the competing interpretations of the world and validate it as generally *rationally accepted*. […] [W]ith their daily stream of new information and interpretations, the media constantly confirm, correct and supplement the blurred everyday image of a *world that is presumed to be objective*, and which virtually *all contemporaries* as-

36 I will come to the role of rhetoric in chapter 6.1.

37 Traditional media are yet another subject to which an entire research field is devoted. In the deliberative systems approach, too, they are often listed as important actors. Therefore, I have introduced them as a context for deliberative systems operating under the conditions of the digital constellation. Throughout the remainder of this book, they will nonetheless remain a side topic, and I will focus on the communication processes between individuals.

> sume is also accepted by everyone else as "normal" or valid. (Habermas 2022: 163, orig. emph.)

On the other hand, and by the same means, the media are meant to support the evolution of rivalling public opinions that adhere to the standards of deliberative politics (cf. Habermas 2022: 157). The "*public communication* steered by *mass media* is the only domain in which the noise of voices can condense into relevant and effective public opinions" (ibid., orig. emph.). The mass media are equipped with professional staff able to assume the role of gatekeeper for public communication (cf. ibid.). Though these have arguably never been perfect, they "nevertheless ensured some minimum standards of epistemic quality and political responsibility" (Chambers 2023: 63).

With the transition of print to online media, the form of distribution changes; the outreach increases depending on the engagement that can be generated (cf. Seeliger/Sevignani 2021c: 32). Consequently, segments of customers, advertisements and even journalism itself are being restructured once more, employment practices in the news industry change and news coverage experiences another shift in focus, from entertaining to engaging the audience and thereby generating ad revenue (cf. ibid.). In other words, the social configurations around traditional media are changing in the digital constellation.

Simultaneously, social media companies still acknowledge the value of the standards guiding professional journalistic outputs. For example, after the 2015 terrorist attack in Nice, YouTube rewrote and retrained its algorithmic systems to promote the contents of traditional media on certain issues in order to avoid misinformation and borderline content (cf. Roose 2020a). Traditional media are perceived as more reliable due to their professional staff's capability and responsibility to condense the constant stream of information into relevant and effective public opinions (cf. Habermas 2022: 157). This role was acknowledged by YouTube, too, and there are many similar examples on other platforms. Therefore,

> it is by now empirically evident that the ongoing digital transformation is not accompanied by a general loss of relevance of journalistic services, mass media, or mass-received content in itself, and that despite increased connectivity, fundamental social selection thresholds remain in public communication, which are challenging to overcome (Schrape 2021b: 6).

Hence, journalism and traditional mass media retain an important position within the public sphere, even though they adapted in several aspects to the logics of the digital constellation, and even though their importance has decreased relative to the increasing number of other major actors in public communication.

From a deliberative systems point of view, the relative loss in consequence of traditional media is another example of what has been addressed above as the decrease of hubs within deliberative systems, and this would imply that news coverage has a smaller impact on the systemic deliberative process. However, empirically, traditional media are still the nodes with the largest outreach – even in pure online communication (cf., e.g., Larsson 2019).

The last aspect I want to address here are the new potentials arising for *social movement* (cf. Cohen/Fung 2021: 25).[38] Many-to-many communication affords increased opportunities for coordinating collective action, lowering information costs (cf. ibid.: 39) and widening the frame of reference of public communication and of political power (cf. Seeliger/Sevignani 2021c: 30). Thus,

> [m]assively intermediated, platform-based media infrastructures have reshaped the ways that narratives about reality, value, and reputation are crafted, circulated, and contested. Platforms enhance the ability to form groups and share information among members, to harness the wisdom of crowds, and to coalesce in passionate, powerful mobs, but they also magnify the dark side of each of these forms of collective action. (Cohen 2017: 148)

Social movements use digital channels in various ways. On the one hand, political actors use digital channels internally for mobilisation and coordination. "Digital technologies enable activists to mount large protests more easily than in the mass-media public sphere, when that sort of collective action required efforts to build interpersonal trust and organizational infrastructure" (Cohen/Fung 2021: 39). On the other hand, political debates can be framed and influenced via digital media (cf. Seeliger/Sevignani 2021c: 32). There have been many examples of social movements that have been seeded and promoted via digital communication, leading to cultural shifts in thinking as well as solid political subversion, with the Arab Spring, MeToo, BlackLivesMatter and Fridays for Future being among the most prominent of them. Such debates can develop momentum in the digital sphere, whose speed and intensity often massively

38 The study of social movements is yet another field of research in its own right.

surpass that of the traditional mass media (cf. ibid.). On the basis of platforms and their properties, new forms of collective action emerged and new affordances developed: "new forms of collective meaning-making, such as memes and flash mobs; new infrastructures for facilitating both traditional charitable giving and other types of 'pay-it-forward' generosity" (Cohen 2017: 149).

At the same time, the increased use of digital communication channels formed and reformed these channels. Social movements set up their own digital channels, thereby providing different means for communication and organisation; moreover, they use the dominant social media platforms to further their cause. The platform companies, on the other hand, repeatedly adjusted their services to the social results of these movements and to their own changing norms. For example, Facebook first acknowledged the importance of its platform as infrastructure for movements such as the Arab Spring, but then tried to retreat from this role when problematic movements, such as the storming of the US Capitol on January 6, 2021, also used these infrastructures (cf. Lima 2021a; Newton 2022b). Nonetheless, digital channels remain central infrastructures for social movements.

However, the political sustainability of digitally induced and organised social movements has been questioned from a deliberative theory point of view:

> information is not persuasion, mobilization is not organization, and knowing where people are gathering is not communicative power. […] [E]asy mobilization can be counterproductive for building communicative power. Activists in the digitally mediated public sphere can achieve a short-term end (mass protest) without building the political, civic, and relational infrastructure that sustains collective action over the long term. (Cohen/Fung 2021: 39)

Thus, social mobilization might be easier, but in many cases it is short-term, since it lacks democratic fundaments and infrastructures. Moreover, as "on the internet virtually all the relevant space is privately owned public space[,] […] [a]ccess to such space is bought with consent to surveillance" (Müller 2019: 213). This, in turn, empowers the "corporations owning the spaces where protest is taking place" (ibid.) to keep order and thus influence the movements themselves. In the deliberative systems approach, social movements are consistently

mentioned as important deliberative sites or events.[39] An increase in the numbers and impact of social movements will thus be profitable for the deliberative system as a whole, as long as these new sites are adequately connected to the wider system.[40]

In sum, the latest structural transformation of the public sphere is an ongoing and ever-evolving process.[41] There are several aspects of this transformation that are relevant for deliberative systems and that help set the scene for my later analyses. Firstly, digital technologies afford the geographical unbounding of public spheres, since communication can occur instantly over long distances. Secondly, many-to-many communication has afforded a change of actor roles within the public sphere, with passive audience members becoming potential active authors. Algorithms, especially those personalising content selection for the respective user, are used to sort the enormous amount of communication, which results in decentralisation and fragmentation of the public sphere. Thirdly, the properties of digital technologies enable the acquisition, analysis and utilisation of user data by different actors for different purposes. Fourthly, in the digital constellation, the public and the private tend to merge in different ways. Fifthly, the role and incentives of journalists and traditional media shift. While still holding an important position in the public sphere, traditional media adapt their contents and presentation to the engagement-centred logics of digital technologies and dissemination channels, and their role within society keeps shifting. Lastly, social movements are facilitated by the rise of digital technologies, in terms of initiation, organisation and momentum. All in all, the digital transformation is no sudden change of the world, but a sociotechnical transformation process "in which every innovation is, in its genesis, coupled to numerous technical and social premises, and comes with various societal convulsions that provide the basis for further developments" (Schrape 2021a: 82). It both introduces new societal phenomena and amplifies existing ones.

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39 Among others: Bächtiger/Parkinson (2019: 90), Dryzek (2009: 1385), Ercan et al. (2017: 202), Hendriks (2016: 57), Mansbridge (1999: 213), Mansbridge et al. (2912: 10), Smith (2016: 154).

40 In chapter 5.2.2, I will come back to the effects of digital technologies and logics on social movements.

41 Of course, digitisation, with its new technologies and its effects on political economy, is not the only explanans for this transformation. Other specific societal constellations have also promoted it (cf. Seeliger/Sevignani 2022: 12).

The digital transformation of the public sphere has different implications for deliberative systems. The public sphere represents a large and especially important part of most deliberative systems. At the same time, it has been affected by the properties and affordances of the digital constellation and has experienced various structural changes. All kinds of political interaction adjust to the new possibilities and necessities of the digital transformation; and these adjustments, in turn, bring about new technological and social developments. Moreover, a structural influence on such an important part as the public sphere affects the parts of a system beyond public spaces. The public sphere is an important focal point of politics, and policies may be proposed and decided upon in consideration of what is perceived as the public opinion or the public's wishes.[42] Simultaneously, digital technologies – including those used for social media platforms – structure all kinds of digital communications. The effects of digital technologies go beyond the effects of social media platforms. They set the background for how individuals communicate under the conditions of the digital constellation, how they perceive their possibilities and how the data generated via social media platforms can be and are being used, beyond the communication processes on these platforms, in political processes. However, social media platforms serve as a central infrastructure for communication processes. They influence how interactions take place, and they even influence what contents can be communicated and to whom, if and how the contents are being stored, if they are publicly accessible and to whom exactly and so on. Contents and data that emerge from these communication processes may be transmitted to other deliberative sites, both digital and non-digital ones, within the public sphere and beyond. Throughout the remainder of this book, I will therefore zoom in on the more specific logics of social media platforms and focus on their relevance for and impacts on deliberative systems.

42 These perceptions can be generated and received, for example, through the regular connections within deliberative systems, including the social movements facilitated in the digital constellation. They can also be gathered by means of data mining. Both influences have nearly opposite effects in the assessment of a system's deliberative qualities and the legitimacy of its decision-making, as I described above.