

From 'the' Public Sphere to a Network of Publics: Towards an Empirically Founded Model of Contemporary Public Communication Spaces

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Abstract

'The' public sphere is now irretrievably fractured into a multiplicity of online and offline, larger and smaller, more or less public spaces that frequently (and often serendipitously) overlap and intersect with one another. This diverse array of what have been described variously as public spheres, public spherules, platform publics, issue publics, or personal publics nonetheless serves many of the same functions that were postulated for the public sphere itself. However, while the communicative structures, functions, and dynamics of many such spaces have been studied in isolation, we still lack a more comprehensive model that connects such case studies in pursuit of an overarching perspective. This article sets out a fundamental toolkit for the development of such an empirically founded model of the contemporary spaces for public communication. It identifies the crucial conceptual building blocks and empirical approaches that may be combined to produce genuinely new insights into how the network of such spaces is structured, and in turn structures our everyday experience of public communication.

Keywords

public sphere, public spherules, issue publics, personal publics, digital media, social media

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Introduction

The idea of a unified public sphere, sustained by the efforts of mainstream media outlets that enable the staging of rational public debate by political elites in front of a mass audience, no longer appears to capture the reality of public communication in contemporary communication spaces, at domestic and transnational levels (Webster, 2013; Fraser, 2007). While it is possible to argue that the concept was in fact never more than a 'convenient fantasy' (Hartley & Green, 2006: 347), at the very least it seems clear that 'the' public sphere is now irretrievably fractured into a multiplicity of online and offline, larger and smaller, more or less public spaces that frequently (and often serendipitously) overlap and intersect with one another: as Dahlgren puts it, "the term 'public sphere' is most often used in the singular form, but sociological realism points to the plural" (2005: 158). This diverse array of what have been described variously as public spheres, public spherules, platform publics, issue publics, personal publics (e.g. Dahlgren, 2009; Cunningham, 2001; Habermas, 2006; Schmidt, 2014; Papacharissi, 2010), and with a wide range of other terms and concepts, nonetheless serves many of the same functions that were postulated for the public sphere itself: it enables the rapid if uneven dissemination of information and formation of personal and public opinion, and sustains a myriad of spaces for discussion and argument at varying levels of publicness, insight, and civility; and at the same time it also provides

avenues for the continued exploration and transgression of the limits of public debate, offering ready opportunities for the spread of mis- and disinformation and the amplification of antagonism, propaganda, and hate speech. However, while the communicative structures, functions, and dynamics of many such spaces have been examined, analysed, and mapped, at smaller and larger scales and using quantitative, qualitative, and (most fruitfully) mixed methods, we still lack a more comprehensive model that connects such case studies in pursuit of an overarching perspective.

The project of developing such a more sophisticated, adaptive model of contemporary communication spaces as a vast network of distinct publics is interdisciplinary by necessity. It must draw on conventional political and mass communication theory, but combine this with the advances made over the past twenty years by disciplines such as Internet studies that have focussed on the empirical study of public, semi-public, and private communication especially in emerging and evolving online environments; it must allow itself to be informed and enhanced, but not overwhelmed, by the large-scale observational opportunities enabled by the “computational turn” (Berry, 2012) towards ‘big social data’, and the innovative mixed-methods empirical analytics approaches it offers; it must bridge the gap between the traditional, normative emphasis on rational deliberation and the overwhelming evidence for the critical importance of affect in everyday communication and decision-making (Iyengar *et al.*, 2012); and it must recognise the critical role that (online and offline) platform providers and their human and algorithmic processes play in affecting and channelling communication processes, while avoiding simplistic techno-determinist explanations – such as ‘echo chambers’ or ‘filter bubbles’ (Bruns, 2019) – in favour of considerably more complex techno-social perspectives.

The extent of this challenge is perhaps best illustrated by the fact that ‘orthodox’, Habermasian public sphere theory has largely failed to engage with such research altogether. As a case in point, in his latest ruminations on a *further* structural transformation of the political public sphere, which centrally purport to consider the role of online and social media in public communication, Habermas himself fails to reference even a single Internet scholar, and chooses instead to limit himself to “informed assumptions” (“informierte Vermutungen”; Habermas 2021: 491) about processes of opinion formation within this changing contemporary mediasphere. Somewhat predictably, this results in a rather schematic distinction between mass and social media that fails to recognise that mass media are

now themselves key actors in social media spaces, and that social media have been normalised as tools of journalistic practice at least since the mid-2000s (Singer, 2005; Bruns, 2018); in rigid distinctions between public and private communication that would have benefitted substantially from engagement with Zizi Papacharissi's seminal work in *A Private Sphere* on "environments that are both *privately public* and *publicly private*" (2010: 142; emphasis in original); and in the credulous acceptance of the now largely debunked 'echo chamber'/'filter bubble' hypothesis (Zuiderveen Borgesius et al., 2016; Bruns, 2019). Since the turn of the millennium, Internet research on these and related matters has matured and diversified so thoroughly that it is no longer necessary to rely on 'informed assumptions' about communication and deliberation processes in online and social media.

But the point of this article is not to provide yet another critique of orthodox public sphere theory, or to position the empiricism of mixed-methods Internet research that draws in part on digital trace data as somehow superior to the normative work of democratic theory in its various guises. There is no need for Jürgen Habermas to become an Internet researcher any more than there is a need for empirical communication researchers to become theoreticians of democracy; rather, what is urgently needed are more interdisciplinary and iterative approaches that facilitate a dialogue between the two perspectives. In true abductive manner (cf. Dixon, 2012), our 'informed assumptions' must be tested against the empirical evidence; hypotheses must be constructed, tested, revised, and tested again; and through this continuous interplay between practical observation and theoretical interpretation there is a hope that a structural model of 'the' public sphere, or more likely of the network of communicative interconnections between the diverse, different, more or less public, more or less overlapping, more or less hierarchical, more or less dynamic spaces for contemporary public communication will emerge.

This article sets out a fundamental toolkit for the development of such an empirically founded model of public communication spaces. Drawing on a broad and interdisciplinary selection of the literature that is most central to this task, it identifies a number of crucial conceptual building blocks and empirical approaches that may be combined to support a research agenda that produces genuinely new insights into how contemporary public communication is structured, and in turn structures our everyday experiences; these tools range from classic models such as the two-step flow of information (Katz, 1957), and its contemporary adaptation as a multi-step flow (e.g. Pfetsch *et al.*, 2018), to recent

contributions such as Papacharissi's description of 'affective publics' (2014), and from Oldenburg & Brissett's 'third places' (1982) in offline contexts to Marwick & boyd's 'context collapse' in online environments (2011). Where possible, the toolkit also matches conceptual ideas, such as Habermas's 'issue publics' (2006), with corresponding methodologies, such as the cross-platform 'issue mapping' approach (Burgess & Matamoros-Fernández, 2016).

Taking an approach that is substantially informed by network perspectives, and recognising networks of communication both *between* publics and *within* publics, the primary objects of analysis in this approach can be understood as the nodes (human and other participants) and edges (messages and other media objects exchanged between them) in the network. Both are necessary but not sufficient for a public to exist: as Warner notes, a public "comes into being only in relation to texts and their circulation", but equally "exists [only] by virtue of being addressed" (2002: 50); it is created by "the reflexive circulation of discourse" (2002: 62). This circulation need not – indeed cannot – include only those participants who were explicitly addressed in earlier messages; others may be exposed and drawn into the discourse even if they were not intentionally addressed by it. In the discussion that follows, then, let us keep in mind this inseparability of participants and posts, of publics and communication, which is especially evident in the online context where users only become visible to others by virtue of their communicative acts: the study of publics is only possible by paying attention to this circulation of discourse between their members.

While this article takes a strongly empirical approach that outlines the building blocks of contemporary public communication and highlights a number of the key methodological approaches that may be used to investigate how they operate in practice, available space does not allow us to also address the equally important question of the underlying factors that shape how these building blocks function. Such factors include the institutional, commercial, and technological interests and imperatives that affect the provision and operation of communication platforms; the legal and regulatory frameworks that guide provider and user activities; and the personal and collective attitudes and aptitudes that determine how users' appropriate and co-create platform affordances. The focus here, then, is centrally on approaches that enable us to better understand *what* patterns and practices of communication occur across the various layers of contemporary public spaces, and how they are

interwoven with each other; a further extension of this analysis should then also investigate *why* these patterns and practices occur in these ways against the backdrop of these specific social, operational, and regulatory contexts.

The Building Blocks

Let us begin with the smallest possible unit of communicative formation above the level of the individual. Using an inclusive definition that deliberately ignores Habermasian objections about the sharp distinctions between public and private communication in democratic theory (cf. Habermas, 2021), these formations can be already described as 'publics', and further distinguished into different *types* of publics with their own structures and dynamics. Depending on these attributes, some such publics may then also be described as 'groups' or 'communities', for instance.

Personal Publics

The simplest form of interaction between an individual and others is dyadic: separate one-to-one acts of communication with one or more others. These may take place in private spaces that are entirely invisible to others (e.g. via direct messaging), in semi-private environments with restricted visibility (e.g. dyadic interactions within a group on WhatsApp), or in a more public setting where threads of conversation (e.g. through @replies on Twitter or comments on Facebook) can be observed by others even if they are not actively involved in the conversation itself. It is also possible for these exchanges to move from dyadic to more multisided modes and back again, and to move between less and more private settings, as additional participants are brought into the conversation or side conversations split from the main thread.

[FIG. 1 HERE]

Excluding entirely private one-on-one conversations, the sum of all such exchanges surrounding the individual is their personal public (cf. Schmidt, 2011; 2014). Expanding on Schmidt's definition, which centres mostly on the *information* individuals may encounter in their personal publics, we might define the *members* of this public as the individual themselves, as well as their most frequent interlocutors

(with particular emphasis on two-way interaction). Such personal publics (cf. fig. 1), then, can be determined at least in principle for each of the specific communication platforms used by the individual by observing their communicative patterns: their follower/followee networks on Twitter; their friends networks on Facebook; their networks of everyday face-to-face contact; as well as the extent to which such networks are actually activated through @mentions, comments, and interpersonal chat. The individual's *overall* personal public, finally, is the sum total of all of their *platform-specific* personal publics, and the presence of interlocutors with whom the individual communicates across multiple platforms demonstrates that from the perspective of the individual these platforms may be regarded simply as the constitutive components of a hybrid, interconnected communicative environment.

In practice, the empirical observation of such personal publics by researchers is complicated by their existence at the boundary of private and public communication. On a social media platform like Twitter, where some 95% of all accounts are globally public, the communicative activities of such accounts as well as the structures of their networks can be readily captured and analysed (including through computational means by using the platform's Application Programming Interface, or API); on Facebook, where most accounts are accessible only to accepted 'friends' of the individual, to do so usually requires the individual to admit the researcher into that circle of 'friends', and comparable API functionality for computational data gathering no longer exists. Some studies therefore ask users to access and download their Facebook interaction histories and provide these in full or in edited form to the researcher as a "data donation" (cf. Breuer et al., 2022), while other, more qualitative approaches employ the scrollbar method (Robards & Lincoln, 2017) and similar procedures to sit down with an interview subject, scroll back through their Facebook history, and ask questions about the interactions within their personal public that this review reveals. Similarly, studies of face-to-face personal publics might employ diary or interview approaches to explore day-to-day patterns of engagement. Especially these more privacy-sensitive and qualitative approaches must usually remain comparatively impressionistic, of course, and are unlikely to scale up to provide more comprehensive perspectives on the personal publics of a larger range of individuals. In addition to directly observing the patterns of interaction within a personal public, however, such qualitative studies may also explore the individual's *perception* of their personal public. As Litt & Hargittai (2016: 2) have shown, this "imagined audience

may not always align with the actual audience" (or personal public), and communicative processes within personal publics are thus almost certainly also shaped by the public personas that the individual and their interlocutors intend to portray.

Personal publics are bounded on one side by those forms of truly private, dyadic communication between individuals which Habermasians and non-Habermasians alike would agree are no longer 'public' by even the most inclusive of definitions. In a social media context, such entirely private exchanges may be found for example in direct messaging functions, but as noted it is important in this context to distinguish between the communicative and technological definitions of 'private messaging': as the direct messaging functions of platforms like Twitter and Facebook, and even more so private messaging applications like WhatsApp, also support messaging between sometimes very large numbers of participants, it may be possible for them to sustain personal publics as well as truly *private* conversations. Indeed, then, personal publics are bounded on the other side by forms of communication that no longer constitute an ego-network around the individual as the primary fulcrum: where networks of communicative actors engage with each other around a shared issue or interest, they must be regarded instead as issue publics or interest publics.

Issue Publics, Interest Publics, Communities of Interest

In a 2006 article, Habermas speculates about the impact of public discourse on the formation of "issue publics" (2006: 422). We might define these as groups of communicators coming together around a shared, specific issue, event, topic, or theme of interest, often perhaps for a limited amount of time and triggered by a specific development in the world – a natural disaster, a political scandal, a public controversy, an entertainment event, and so on. Empirically, such issue publics may be detected in digital trace data by their use of specific communicative markers: the key terms and phrases relating to the issue; the names of individuals, organisations, and locations that are central to the issue; and in some contexts (now well beyond Twitter, where they were first popularised) also the hashtags that are created as widely visible signifiers for specific issues and debates. Indeed, the hashtag in its modern form was first adopted as a mechanism for bundling and coordinating conversations about an acute, event-based issue: the 2007 San Diego wildfires (Halavais, 2014).

Aided substantially by API functionality (especially in the Twitter API) that particularly privileges data gathering based on keywords, hashtags, and similar in-text features, the methodological frameworks for studying such issue publics in social media have advanced rapidly over the past decade. Central here is the social media issue mapping approach (Marres, 2015; Burgess & Matamoros-Fernández, 2016), which itself builds on earlier issue mapping frameworks for the broader Web (Rogers & Marres, 2000). This current iteration of issue mapping tends to begin with a focus on a single social media platform, from which researchers gather posts containing the selected key terms and phrases. Further, the initial dataset of trace data matching a given set of key terms may also need to be expanded by capturing social media posts that the posts in that dataset respond to, or that in turn respond to the posts in the dataset – in other words, by capturing entire online conversations rather than isolated posts. As in face-to-face exchanges, not all utterances in a conversation are likely to include the selected key terms; some may simply state 'I agree' or 'That's not right' but nonetheless represent integral parts of an ongoing conversation. To expand the dataset in this way – a form of 'conversation snowballing' from the initial data – is far from trivial: many platform APIs provide only rudimentary functionality for doing so, and many studies that purport to analyse the social media conversations about an issue therefore only present a subset of the full discussion (Burgess & Bruns, 2015).

[FIG. 2 HERE]

To reveal a genuine issue *public* (as opposed merely to a collection of participants who are all using similar language but remain unaware of one another), the dataset must then likely be scoured for evidence of mutual awareness and engagement, which may be defined differently depending on the specific platform's affordances; *inter alia*, such evidence may include direct responses or content on-sharing between accounts, follower or friend relationships between accounts, use of the same hashtags or other discursive markers, participation in selected groups, frequency and reciprocity of participation, etc. (cf. fig. 2). Such requirements can be enforced more or less strictly, and point to the fact that issue publics and other communicative formations online cannot usually be defined as strict in- or out-groups, but exhibit varying degrees of central or peripheral membership. Where exactly lines may be

meaningfully drawn between a core community of participants, a broader group of interested followers, and an even larger crowd of occasional onlookers is likely to be issue- and context-specific (cf. Bruns & Stieglitz, 2012).

In addition to thus exploring a single-platform issue public, the issue mapping approach commonly also traces the circulation of media objects that are introduced to the platform from other sources: links to news reports and other external materials, embedded images (including memes) and videos, hashtags and other references to issue publics on other platforms, etc. This represents another form of snowballing that begins to capture the communicative context around the platform-specific issue public, and may reveal the existence of related and potentially overlapping issue publics on other platforms, both in social media and in other online and even offline contexts. Further, from a diachronic perspective, the analysis of such digital trace data may also reveal how the platform-specific issue public is influenced by and in turn influences related discussions taking place on other platforms, by showing when and how media objects from elsewhere are introduced into the on-platform debate and how the debate itself is in turn reflected in other spaces. In recent years, such approaches have been fruitfully applied to studies of major issues ranging from #gamergate (Burgess & Matamoros-Fernández, 2016) through climate change (Williams et al., 2014) to COVID-19 conspiracy theories (Bruns et al., 2020) and beyond, as well as to a myriad of much smaller-scale case studies.

In addition to such single-platform issue mapping efforts, it is also possible to apply this process to multiple platforms at the same time, of course, with the explicit aim of examining the interrelationships between the partial issue publics that exist on each. This approach, which may be more properly described as controversy mapping – in its post-Latourian, digital methods-centric reformulation by Venturini & Munk (2021) –, thus constructs an overarching, more complex, platform-independent issue public whose constitutive components may be more or less consistently interwoven by shared membership (as individual participants are active on more than one platform) or the circulation of media objects across these platforms. Indeed, as the appearance of hashtags and memes at protest marches and elsewhere shows, such expanded issue mapping approaches need not stop at the boundaries of the digital domain, although of course they will then require alternative and potentially considerably less scaleable methods. Online, too, much as we have seen for personal publics, issue mapping approaches are limited

by what communicative activities the various platforms enable researchers to readily observe, and this is a key reason for the comparative overrepresentation of Twitter-centric studies in both issue mapping and more general social media research. But while researchers ought to be mindful of how this divergent visibility of issue publics in their own analysis is related to platform data access settings, they should also recognise that those same “digital settings” also “participate in issue formation” for the members of issue publics themselves, as Marres notes (2015: 676): for them, too, hashtagged discussions on Twitter may be more visible and accessible than topical pages on Facebook or invitation-only groups on WhatsApp, and this will affect the inter-platform dynamics of issue publics.

Finally, if such issue publics persist for extended periods of time, beyond the acute events or issues that may have give rise to the initial formation of these publics, we may consider them to have become *interest* publics and, indeed, communities of interest – with the greater level of individual commitment and organisational structuration that these labels imply. Even more so than transient issue publics, such more permanent interest communities will be centred around a core of long-term participants who may take on specific roles and functions within the community, a group of regulars who participate less but nonetheless remain committed to ongoing engagement, and a crowd of occasional visitors who join in and drop out again as they choose (cf. Bruns & Stieglitz, 2012). Issue and controversy mapping approaches can still be utilised to study such longer-term formations, and may in fact find it easier to identify them as such communities are also likely to develop more distinctly recognisable names, language, and conventions over time. This is the case for instance for long-term online communities like the Australian community of rural agriculturalists and environmentalists AgChatOz, which has evolved from a regular, hashtag-facilitated #agchatoz Twitter meet-up (Burgess et al., 2015) to a multi-platform interest community with a presence on Twitter, Facebook, LinkedIn, podcast platforms, and in trade publications.

The transition from issue public through interest public to community of interest is necessarily fluid, and several qualitative and quantitative criteria – duration, dynamics, and periodicity of activity; development of a shared language; emergence of community structures – may be used to distinguish between different stages in this evolution. The application of these criteria in empirical analysis might also vary with the themes and topics being addressed by such issue and interest publics, of course, or

with the platforms of communication and their typical patterns of interaction: community structures may take longer to emerge on a comparatively ephemeral platform like Twitter, for instance, compared to spaces that track and recognise user participation history more explicitly (e.g. by defining different contributor categories or awarding greater community administration rights to seasoned participants). This does not invalidate the distinction between issue and interest publics, but means that it is context-specific rather than categorical.

Public Spherules and Public Spheres

If personal publics and issue publics constitute two of the fundamental building blocks of empirically observable interpersonal and public communication, then, can and do they contribute also to a greater whole? Here, the notion of public spherules or, more properly, public spherules might be useful. Observing the arrival of Web 2.0 in the late 1990s, Gitlin (1998: 173), with considerably pessimistic overtones, envisaged such public spherules as what remained after “the public sphere, in falling, has shattered into a scatter of globules, like mercury”, while Cunningham, responding to Gitlin, offered a more optimistic perspective by suggesting that such spherules “display in microcosm elements we would expect to find in ‘the’ public sphere” and “may constitute valid and indeed dynamic counter-examples to a discourse of decline and fragmentation” (2001: 134). But rather than perpetuating a top-down perspective that sees such spherules as what remains after an all-encompassing unified public sphere that (as per Hartley & Green) may never have been more than a “convenient fantasy” has withered away, let us instead explore from the bottom up how the more elemental building blocks that we have already encountered might recombine to form more complex structures within the contemporary public communication environment.

We have already seen that the various platform-specific issue publics that digital methods enable us to identify are likely to intersect and combine to form an overarching issue public that transcends individual platforms. But in addition to this vertical interconnection between platform-specific issue publics on identical or very similar issues or interests, which AgChatOz with its spaces across multiple platforms demonstrates, there is also the potential for a further horizontal interconnection between distinct but thematically related issue publics. This may be illustrated, for instance, by the way that the various issue publics formed around cases of police brutality against people of colour in the United

States (and beyond), from the Ferguson protests following the shooting of Michael Brown in 2014 (Jackson & Foucault Welles, 2016) to the global protests after the police murder of George Floyd in Minneapolis in 2020, have gradually merged into a broader Black Lives Matter movement with its own associated communicative spaces. As Freelon et al. (2016) show, new allegations of brutality and discrimination against people of colour may again result in the formation of short-term issue publics centred on the specifics of each case, but such issue publics now also clearly articulate themselves within the broader Black Lives Matter context, by incorporating its language and iconography (including the acronym BLM and hashtag #BLM, even on platforms and in offline contexts where hashtags have no immediate operational function) and appealing to recognised leading participants in the overall Black Lives Matter discussion.

[FIG. 3 HERE]

This alignment and incorporation of related issue publics into a broader discursive network, then, might be understood as the formation of a public spherule (cf. fig. 3). The structure that emerges here is distinct from issue publics in that it is no longer centred around one specific issue or event, but addresses a more general topic or theme; potentially, this also results in greater longevity, and in a considerably larger participant base. This, in turn, also renders the totality of discursive activity within a public spherule less knowable for individual participants (and, indeed, for researchers): at the practical level, for instance, while it might still have been possible for an individual Twitter user to follow the #ferguson hashtag in the aftermath of Michael Brown's death, or for an individual Facebook user to monitor updates in a number of Ferguson-related pages or groups, even with the best of intentions it would be impossible to observe *all* of the discursive activity within the #BLM or #BlackLivesMatter hashtags, or the vast number of BLM-related spaces on other platforms. (Indeed, for this reason such public spherules may also spawn new issue publics addressing the overall theme of the spherule for a specific event in its timeline or for more limited subset of the userbase, as defined by shared geography of other attributes – such as #BLMNYC for New York City.)

Instead, through a combination of the discursive activity of the participants in such issue publics and public spherules themselves, and of the algorithmic evaluation of such activity that the various social media platforms have implemented, within such overall spherules a selection of contributions and contributors are gradually “crowdsourced to prominence”, as Meraz & Papacharissi (2013: 145) put it: by consistently contributing in apparently productive ways, and being recognised as such by other participants, they gain visibility and influence within the broader conversation. This does not mean that all such contributions and contributors are well-intentioned and discursively valuable by any ‘objective’ standard of productive deliberation that may be imagined, however: the crowd’s inherent prejudices or the active manipulation of crowd dynamics by bad-faith actors may also lead to polarising, populist, and other problematic contributors rising to positions of influence; similarly, especially given the larger number and greater diversity of participants that the construction of public spherules from multiple issue publics implies, the contributions and contributors that emerge as influential within a public spherule may well represent a wide array of contradictory positions, and public spherules and their discourses may thus turn out to be significantly more controversial, antagonistic, and even dysfunctional than the individual issue publics upon which they build.

Empirically, since they are constituted by the commingling of individual issue publics, the study of such public spherules could thus be approached similarly by the combination of multiple case studies of individual issue publics; at the level of a single platform, this might be illustrated for instance by Williams et al. (2015)’s study of multiple Twitter hashtags relating to climate change, from the climate-denialist #climaterealists to the science-affirming #globalwarming. Individually, these hashtags may capture issue publics with different perspectives towards climate change, but taken together they (and others that were not selected for the study) represent that subset of a wider, trans-platform public spherule on climate change that happens to be present on Twitter. This multilayer perspective also resolves the curious observation of *both* “open forums and echo chambers” that Williams et al. (2015) made in their data, in fact: individual hashtag publics may well have been highly homophilous in their networks and homogenous in their views, but overlaps in participants and content between them mean that the overarching public spherule must nonetheless turn out to be heterophilous and heterogeneous.

In addition to the collation of the individual issue mapping studies centred on the various issue publics that contribute to a public spherule, then, the more important challenge in researching public spherules in themselves is to develop an understanding of how these issue publics relate to and intersect with each other. At the level of their discursive content, this may extend the snowballing focus on media objects that we have already encountered in issue mapping approaches by exploring very explicitly whether and how information flows between these different issue publics: do media objects from outside sources circulate similarly across all the issue publics constituting a public spherule, or are there bottlenecks and blockages? But also, do messages that originate in one issue public make their way (through retweeting, on-sharing, and other similar dissemination mechanisms) into others?

Similarly, at the level of their participants, it is possible to explore the extent to which the various issue publics that contribute to a public spherule share a userbase (that is, whether participants contribute to more than one issue public), as well as to map the networks between their respective userbases (that is, whether, even if users contribute actively only to one issue public, they are followers of or friends with the users who contribute to another, and therefore likely at least to see those contributions to, if not the full range of activities within, the other issue public). Williams et al. (2015), for example, hint at this approach in their study of climate change hashtags by mapping the Twitter follower networks *within* each hashtag, but sadly not *across* them: by extending their work towards such mapping across publics, it would have been possible to capture a glimpse of the shape of a broader public spherule about climate change (at least on Twitter) beyond these individual discursive spaces.

One of the central questions for the empirical approach sketched out here for the study of the interface between interest publics and public spherules should therefore be whether the network of publics it reveals shows an evenly multi-centric and pluralistic structure or is characterised by one or a few major spaces fringed by several much smaller spaces, and how these are distributed across platforms. It is possible, if perhaps somewhat unlikely for most sufficiently complex topics, that this analysis reveals one issue or interest public to be so expansive and dominant in a given field that the interest public and public spherule map onto each other almost exactly; if so, the two may be collapsed into one single concept. The significant dearth of empirical studies that examine patterns of public communication, ideally across platforms, above the level of individual issue or interest publics makes

it impossible to predict how frequently such a centripetal collapse may occur in practice; however, it is likely to be inhibited by the centrifugal tendency for contemporary public communication even on the same topic to fracture across multiple online and offline platforms, and to develop divergent dynamics as a result of the interplay between the specific participant communities and platform affordances found there. At any rate, the very question of whether there is a meaningful distinction between interest publics and public spherules points to the need for more empirical work that draws on the concepts and approaches outlined here.

If, as suggested in the introduction, we approach the study of public spherules – and indeed, of contemporary communication spaces overall – in an abductive manner that iterates between empirical exploration, initial hypotheses, further empirical confirmation, and further theory building, then an appropriate if potentially time- and resource-intensive approach to the identification and analysis of public spherules is to bring together more and more case studies of issue publics and examine their interconnections at the content and contributor level. What is likely to emerge from this is a transpublic network structure of more or less closely aligned issue publics that may cluster together in a variety of ways: Williams et al. (2015) might have observed, in the first place, clusters of hashtags that accept the scientific reality of anthropogenic climate change, and clusters that continue to deny it, and in combination these could then be regarded as low-level mini-sphericules representing scientific and denialist viewpoints; at the same time, however, these would still have been likely to form an overall public spherule representing the climate change debate as such.

If we were to add further, ever more loosely related issue publics to the analysis, that public spherule on climate change might itself represent a cluster of interests within a higher-level spherule on environmental policy, within an even higher spherule on transnational political or economic frameworks. Much as with issue publics, however, these relationships are not simply hierarchical, following the “Russian doll” metaphor of spheres within spheres within spheres that John Hartley has proposed (1999: 217-8), but multiple: the public spherule on climate change might be situated within a higher-level environmental spherule just as much as within a higher-level science spherule. This, too, is a feature of the horizontally as well as vertically networked structure of these communicative formations: rather than being categorically inside or outside a higher-level space, and fully containing

all the lower-level spaces that contribute to them, as the physical metaphor of the Russian doll implies, these spaces have a stronger or weaker affinity with all the other spaces above and below them.

Finally, then, this approach even makes it possible to empirically explore the structure of public spherules – or perhaps even public spheres, in the plural – without any pre-conceived selection of issues, topics, or themes. If we had access to a substantial number of studies of issue publics on any topic, we could collate them to examine their respective affinities, draw on network mapping approaches to explore how they cluster together, and from a thematic exploration of these clusters identify several potential public spherules and their relationships with each other. While this is admittedly likely to be highly labour-intensive and methodologically challenging, it is in essence what – at least at the level of individual platforms and countries – Kelly and Etling (2008) have done for the Iranian blogosphere and Bruns et al. (2017) have done for the Australian Twittersphere: by analysing the hyperlink or follower/followee interconnections between individual nodes in the network, and evaluating the content patterns within the clusters that emerged, they produced comprehensive network maps that clearly indicated both the themes that specific areas in each network focussed on, and the overlaps and affinities that existed between these different areas. In the Australian Twittersphere, for instance, what we might call public spherules around politics, the news, and activism were all closely connected with each other, while they shared considerably less affinity with public spherules around popular entertainment and teen culture. In a further complication and extension of such approaches, it would then also be preferable not to assign each issue public, or each participant, simply to one cluster within the network, but rather to assess their relative affinity with each identified cluster, in order to recognise the multiple interests commonly pursued by any one individual, as well as the diverse participant base of each issue public (cf. Münch, 2019).

This bigger perspective also suggests the existence of a level above that of the public spherule that is sometimes described as *a*, but not *the*, public sphere; portmanteaux like 'blogosphere' and 'Twittersphere' both hint at this idea as well. Studies attempting to capture the full communicative structure of a given platform produce what we might call a platform-specific public sphere (or indeed, as they are often also limited to a particular geographic region, a platform- *and* country-specific public sphere). Similarly, it is at least possible to imagine approaches that seek to examine public spheres that

exist across multiple platforms but are defined and delimited by another distinct attribute: this might lead, for instance, to a mapping of the (Australian) Indigenous public sphere that updates the mass media-centric study by Hartley & McKee (2000) for the social media age. Any such truly comprehensive, large-scale, and multi-platform efforts are likely to be prohibitively complex and resource-intensive, however, and are also severely hampered yet again by the substantial barriers to access to digital trace data that the various online and social media platforms have implemented. They may therefore only be possible through collaborations with platform providers, which are themselves rare especially at the scale that would be required here, and even then may produce only occasional snapshots of communicative structures that remain in constant flux.

Structures, Interconnections, and Flows

Having identified and defined these principal building blocks of the contemporary communicative environment that has flourished in place of 'the' public sphere, we might next ask how they are structured, and what any observations of divergences in these structures, which may result from a systematic comparison of multiple such spaces, reveals about their different dynamics; whether and how they are interconnected, both horizontally (as spaces of the same type overlap with each other) and vertically (as lower-level spaces are contained within higher-level spaces at least in part), and how this may affect the potential for communication across these spaces; and finally also how, in day-to-day practice, this potential for communicative flows within and across these spaces is realised, and whether this privileges the dissemination of particular forms and types of ideas and information over others.

Importantly, the structures and patterns of communication (or non-communication) that this analysis will reveal are also likely to point to the more fundamental conditions that shape participation in public communication processes: these include for instance the socioeconomic aspects that determine whether and to what extent specific individuals and groups are able to access and invest time and energy into their participation in particular spaces; the cognitive aspects that affect their development of the general and specific media and technological literacies required for processing and producing content; or the structural aspects that socially or algorithmically privilege the production and circulation of content from certain individuals and groups over others. The analysis approaches outlined here, and the

empirical artefacts they produce, should never simply be taken at face value as unproblematic representations of objective truth, therefore, but must also be examined for the gaps and absences they may reveal.

Personal Publics

As the name implies, personal publics are by definition ego-centric; presented as a basic network map, they will inevitably show a star-shaped structure. However, as noted before the various personal publics that a given individual might have accumulated on their different platforms (face-to-face, email, Facebook, Twitter, LinkedIn, etc.) are likely to vary substantially, and a systematic comparison of these networks and their observable use can reveal the user's communicative repertoire on each platform. Such observational, trace data approaches can be further combined with qualitative interviews and related methods that, as Litt and Hargittai (2016) have shown, examine individuals' imagined audiences on each platform, or, using the scrollbar method pioneered by Robards and Lincoln (2017), explore users' motivations for why they use their different platforms in these specific ways. Such methods are not limited to the study of personal publics only, however: they can also reveal the rational and affective dimensions of why and how participants engage in higher-level issue publics, public spherules, and public spheres, of course.

Once we advance towards the study of multiple individuals' personal publics, then – in addition to comparing such structures and practices across these personal publics – it also becomes possible to trace their interconnections. This situates these only initially ego-centric spaces within a wider network which, far from only enabling “pointless babble”, as an early Twitter study claimed (Pear Analytics, 2009), may *inter alia* support users' “ambient awareness” of current events (Hermida, 2010), their “serendipitous news discovery” (Purcell et al., 2010), their maintenance of social ties through “phatic” engagement (Bruns & Moon, 2019), and their “affective” engagement (Papacharissi, 2014) within social and societal circles. The fact *that* the network of personal publics that exists on social media platforms supports such purposes is by now well accepted: building on survey data from the Reuters Institute for the Study of Journalism's annual *Digital News Report*, for instance, Fletcher & Nielsen (2018) show that social media users on average tend to encounter a larger and more diverse range of news sources than non-users, and even Habermas acknowledges the role of such interpersonal online

communication in the “wild flows of messages” at the periphery of the public sphere (2006: 415). Importantly, however, our present approach moves this network of personal publics from the unruly periphery of ‘the’ public sphere to the very foundation upon which the contemporary network of publics builds.

Further, then, the point of the research that examines this network of personal publics cannot be simply to show that it exists, but to systematically examine just how it is structured, and exactly what (‘wild’, or more orderly) flows of messages it enables. This implies a focus on both connections and content: firstly, how and through whom are individual personal publics connected with each other, and does this point to the existence of key groups or individuals who serve as critical connectors between diverse personal publics? The study of such actors has a long history even in the comparatively brief two decades that Internet studies has existed as a field: Zuckerman, for instance, identified what he described as “bridgebloggers” connecting divergent parts of the blogosphere in 2008; more recently, Abidin has emerged as the pre-eminent authority in the area of influencer studies (2018). A focus on these individuals, and their role as critical hubs in the network, can reveal their relative power over information flows – are there many such bridges between clusters in the network, or only a few? do they pass on a diverse range of information, or do they act as gatewatchers (Bruns, 2018) with particular ideological or other biases? – and thus also points, secondly, to the need to study the informational and affective content being exchanged amongst this network of personal publics, and especially perhaps by and through these most influential individuals.

If such studies were to find highly homogeneous content circulating within largely insulated networks of personal publics centred around shared identity or ideology, this might lend support to the controversial idea of ‘echo chambers’ or ‘filter bubbles’ (Sunstein, 2017; Pariser, 2011) at this foundational level of the network of publics – and indeed an early study of networks amongst US political bloggers in 2004 claimed to have observed a “mild echo chamber” of Democratic and Republican blogs, respectively, even though it also showed substantial interconnections between both clusters (Adamic & Glance, 2005) –, but the overwhelming weight of evidence now points in the opposite direction (cf. Bruns, 2019). In reality, most networks of personal publics are likely to exhibit strong signs of “context collapse” (Marwick & boyd, 2011), as personal publics are accumulated from

a range of social contacts (family, friends, acquaintances, colleagues, celebrities, institutions, etc.) rather than on the basis of narrow ideological criteria. The connections and content within such networks are thus almost inevitably heterogeneous, and this is what enables the (often beneficial) serendipity of information flows.

This does not deny the fact that large-scale maps of networks of personal publics – as represented, ultimately, also by the comprehensive maps of national blogospheres and Twitterspheres that Kelly & Etling (2008) and Bruns et al. (2017) have produced – show evidence of considerable clustering around shared interests and identities: contexts might collapse, but they are not *entirely* random. In network analysis, clustering is a sign of *comparatively* greater affinity with some parts of the network than with others; it does not necessarily imply *complete* disconnection from all parts of the network. A valuable tool for the evaluation of this important distinction, indeed, is Krackhardt & Stern's (1988) E-I Index, which for any cluster within a network produces a value from +1 (all network connections are to partners outside of the cluster – i.e. the cluster is in fact not a cluster at all) to -1 (all network connections are to partners within the cluster – i.e. the cluster is entirely isolated from the rest of the network). In social networks, this could also be calculated individually for all possible forms of 'connection' that the communication platform affords (following, friending, commenting, liking, sharing, etc.), with possibly diverging results; indeed, Bruns (2017) does so for the Australian Twittersphere, and finds that the overall network (which is in effect constructed from the personal publics – the follower/followee relationships – of all accounts within it) remains thoroughly interconnected even in spite of clear evidence of clustering tendencies.

Issue Publics, Interest Publics, Communities of Interest

If the study of personal publics and the networks between them commences almost inevitably with gathering data on the connections and content of a selection, however defined, of individual personal publics, then the study of issue publics and related structures begins instead by defining the issue and observing its discussion wherever it may occur, as we have seen. Such issue mapping or controversy mapping approaches usually define a set of key terms and phrases, and for social media-centric studies tend to use the platform APIs and related functionality to gather any posts that contain such terms. On Twitter, simplistic approaches (or those that are explicitly interested in the role of this particular

coordinating discursive mechanism) might select *only* a topical hashtag – but the narrower such selection mechanisms are, the more otherwise relevant content they will miss out on.

The datasets gathered through issue mapping or controversy mapping, then, are already likely to show considerable internal structuration: as the study by Williams et al. (2015) shows, for instance, even individual hashtags on Twitter can contain discursive structures that involve multiple groups of participants involved in antagonistic struggles with each other, and larger datasets that stretch across multiple such spaces, and even multiple platforms – Twitter hashtags, Facebook pages, WhatsApp groups – certainly will. This means that the network analysis approaches outlined for the study of networks *between* personal publics also apply to the study of networks *within* issue publics, and will reveal what interest-, identity-, or ideology-centric clusters may exist here and how they intersect and interact with each other. In light of this inherent heterogeneity of most issue publics the qualitative or quantitative, manual or computational analysis of the content circulating within the different clusters in such issue publics will also make a critical contribution, of course: we have already highlighted the focus on the circulation of media objects within the debate that is a central element of the issue mapping approach.

Tracing such media objects (URLs, images, videos, memes), or indeed more generic expressions of particular views and perspectives, across an issue public places such work within a long historical trajectory of research that is often tied back to Katz & Lazarsfeld's seminal study of the two-step flow of opinion formation within professional circles in mid-1950s small-town America (Katz & Lazarsfeld, 1955; Katz, 1957). Such flows were perhaps never necessarily restricted to only *two* steps, however, and today the idea of a *multi-step* flow is well established (e.g. Pfetsch et al., 2018); issue mapping studies, then, can document both how such extended flows operate in practice, what actors are involved in animating them, and whether they still flow primarily from mainstream media through opinion leaders to the general public, sometimes also in the opposite direction, or more laterally amongst a diverse community of participants.

Further, as issue mapping and especially controversy mapping approaches are not necessarily limited to focussing on a specific space on a particular platform, they may trace such information and opinion flows across a range of spaces, understood here as defined by platform affordances and their

operationalisation by users. Amongst these might be those spaces (hashtags, pages, groups) that were explicitly set up to discuss the issues at hand (e.g. Black Lives Matter hashtags and groups), but potentially also others where such discussion occurs incidentally in the context of other interests (e.g. as sports communities discuss the meaning of taking a knee before matches). The latter constitutes an example of what Oldenburg & Brissett (1982) described as “third places” and what Wright et al. (2016) translated to the digital environment as “third spaces” – and the approaches outlined here can thus also make a valuable contribution to our understanding of the role that such *a priori* apolitical spaces play in the formation and operation of issue publics.

Of particular interest in this context, then, is also whether the discursive practices in these spaces are significantly and consistently divergent from others in the issue public that are more inherently political. Esau et al. (2019), for instance, build on Fraser (1990) by proposing distinguishing criteria for ‘strong’ and ‘weak’ publics online, and suggest that the latter may employ more personal and emotional language compared to the more rational and goal-oriented discussions within the former. This would position ‘weak’ publics – which we might expect to find more often in ‘third spaces’ – as examples of the “affective publics” that Papacharissi (2014) describes, too. But rather than dismissing these as ‘weak’ because their discursive culture is less rational and more affective, as conventional democratic theory might do, the approach sketched out here allows for a more empirical, less predetermined evaluation of their importance. Finally, as we have seen elsewhere, this evaluation would also be usefully informed by additional qualitative engagement at least with a sample of the participants in such spaces, in order to capture their own perspectives on the role that such third spaces play for them.

Public Spherules and Public Spheres

If the various issue publics on related but not identical topics align to form broader thematic public spherules, as suggested above, then this also points to the methods for studying this higher-level communicative formation: by collating and combining an ever broader range of studies of such individual issue publics. Much as we have already seen it in our discussion of the study of multiple personal publics, then, the primary interest here shifts from the internal structure and dynamics of these individual issue publics to the interconnections and interactions between them. Yet again, we may ask whether all such publics are created equal, or whether some (by virtue of their more generic focus, for

example) serve as important connectors between others, and thereby also enable information and opinion to flow predominantly in specific directions. Bruns et al. (2022) provide a glimpse of this, even if their study does not approach the full breadth envisioned here: examining a network of issue publics that are defined by their common practice of sharing problematic news content on Facebook, they identify communities centred around cryptocurrencies and alternative medicine as the connective tissue that links otherwise diametrically opposed issue publics on the far right and far left of US politics.

Advancing further beyond such thematic public spherules and towards (plural) public spheres as defined by shared identity or technological basis, then, the networks of personal publics and issue publics – in other words, the totality of the elementary building blocks at personal, semi-public, and public levels – must be combined to generate an even more comprehensive picture. As noted, studies such as Kelly & Etling (2008) for the Iranian blogosphere or Bruns et al. (2017) for the Australian Twittersphere approach this by essentially systematically combining all of the personal publics for their respective countries and platforms to produce a full network, and by identifying potential overarching issue publics from the evidently thematically driven clusters of particularly strongly connected communities of participants that emerge within these networks; Bruns & Moon (2018) extend this further by uncovering evidence of potential longer-term issue publics from one randomly chosen full day of Twitter activity within their Australian Twittersphere, and mapping this activity onto the Twittersphere follower/followee connection network itself.

But these rare and isolated studies also point to the substantial practical difficulties that emerge when attempting to scale up the approaches and methods that are now available for the study of the lower-level building blocks of the contemporary network of publics in pursuit of the bigger picture. Not only do the resource requirements and complexity of data-gathering processes increase substantially, but in online and social media contexts such processes also encounter the hard limits of current platform standards for data provision. Rates of access to data are severely limited on most leading social media platforms, while some – like Facebook – provide only limited data on their entirely 'public' spaces, and others – like WhatsApp – are private by design and cannot be investigated at all other than at small scale and through qualitative observation. While some approaches to optimising data access without sacrificing analytical fidelity do exist (see e.g. Münch et al., 2021, for their method of mapping a

national Twittersphere through purposive sampling), these only work where data are available in the first place, and do nothing to address the substantial imbalance in extant research towards those platforms – chiefly, Twitter – where data access is comparatively plentiful. The vision of a more comprehensive mapping of public and semi-public communication across online and digital platforms that researchers might have shared at the start of the “computational turn” (Berry, 2012) in media and communication research remains stubbornly out of reach, therefore.

Conclusion

The unattainability of such more comprehensive, all-encompassing empirical evidence certainly does not render our entire enterprise futile, however: the point here is not, as other utopian (or perhaps dystopian) visions of a data-led scientific future had it, “the end of theory” (Anderson, 2008), but the evolution and adaptation of now severely outdated theories of ‘the’ public sphere to better align with empirically observable reality. In pursuit of this goal, the research focussing on components such as personal publics and issue publics, and on their interconnections and intersecting content flows, that most definitely is possible even under restrictive platform regimes and in mixed-methods integration with more qualitative approaches already provides critical new perspectives. These enable us to, and indeed should force us to re-evaluate the outdated nostrums about the sharp distinctions between public and private, between rational and affective, and between the centrality of the mass-mediatised arena and the peripheral role of interpersonal communication that persist in orthodox public sphere theory.

It already seems evident that what is likely to emerge from this is not going to be a model of *the*, or even of *a* public sphere, but instead of a network of variously private and public, personal and topical, small and large, transient and persistent communicative formations across the several levels sketched out here, connected both horizontally and vertically by shared participants and information flows. The study of this complex networked structure is not only fascinating in its own right, but also critical to identifying, *inter alia*, where contemporary public communication flourishes and where it is dysfunctional; how and to what ends individual, collective, and institutional actors insert and position themselves within this structure; and where social, technological, commercial, and regulatory interventions may harm or heal the social fabric.

Further, it should be self-evident that this work is not going to produce a static picture: much like the information flows that occur across it, the user practices, platform affordances, commercial and institutional interests, technological foundations, and regulatory frameworks that underpin this network of publics remain in constant flux. We might assume that (as the platform-independent outline of a set of fundamental building blocks in this article implies) the abstract elementary components of this networked structure remain the same – but (just as a personal public on Facebook will have different features from its counterpart on Twitter) their concrete shape will change with the distinct platform affordances that are available in every online and social media environment, and that constantly evolve even over the course of a single platform's history (cf. Burgess & Baym, 2020).

While a single article can therefore necessarily only offer a broad-brush sketch of the multi- and interdisciplinary effort that is required to develop a more accurate model of contemporary public communication, and to keep it up to date, this contribution has catalogued its critical components, and pointed to the key methods involved in their study. What emerges from this muster of key concepts and methods is a new research agenda for the study of 'the' public sphere (or rather, of the multifaceted and interconnected structures that have replaced it) *in situ*. Extant research that draws on these concepts and methods offers a glimpse of the complex and multilayered network of publics that such a research effort may find, while also highlighting that the media ecology that this research seeks to describe remains exceptionally dynamic. Our conceptual and methodological frameworks must therefore necessarily also remain highly adaptive to new developments at societal, social, political, economic, and technological levels.

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Figures

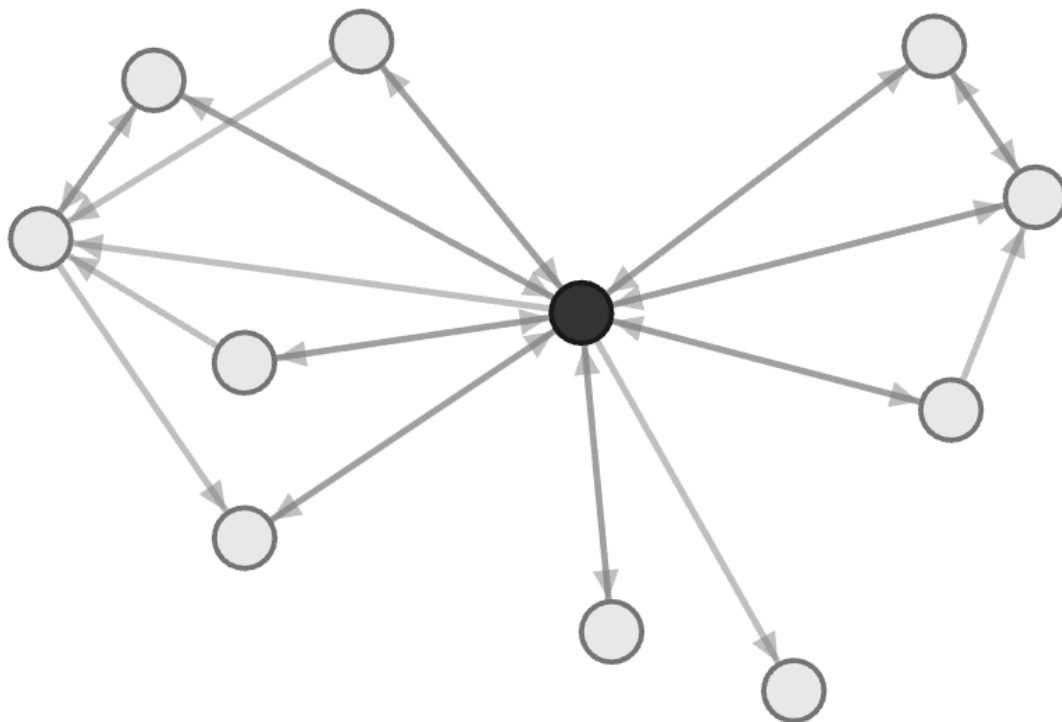


Fig. 1: Schematic representation of a personal public, showing dyadic as well as multi-sided interactions around a central individual

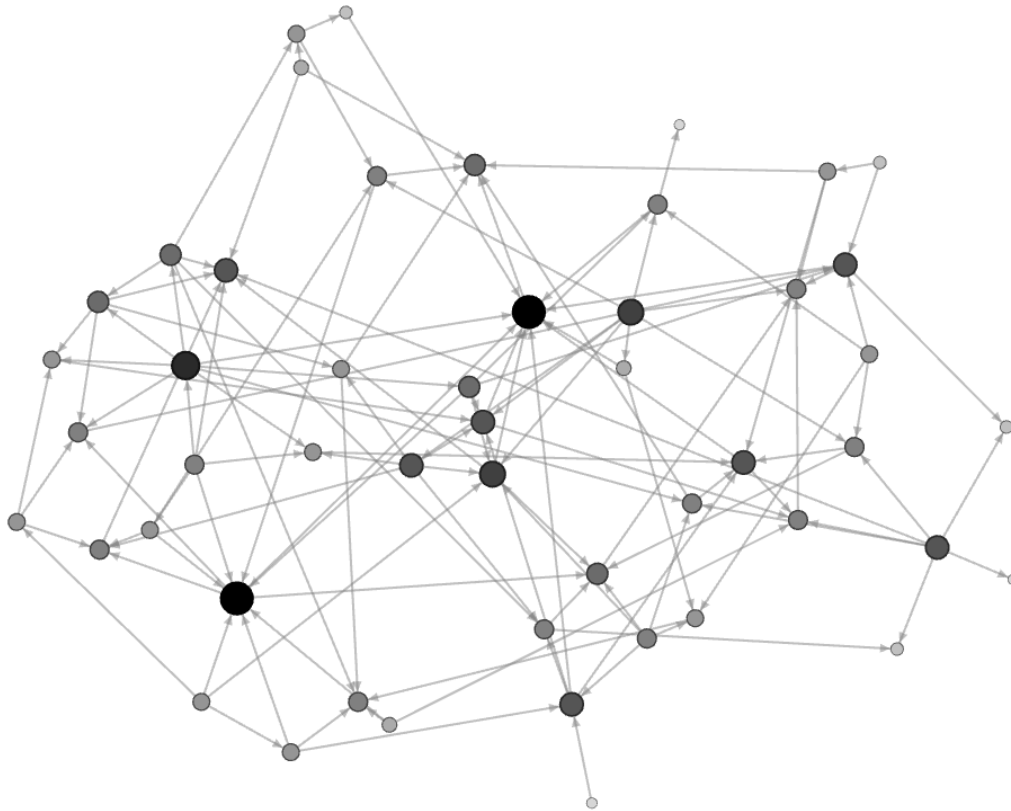


Fig. 2: Schematic representation of an issue public, showing variations in the level of engagement and centrality of different participants

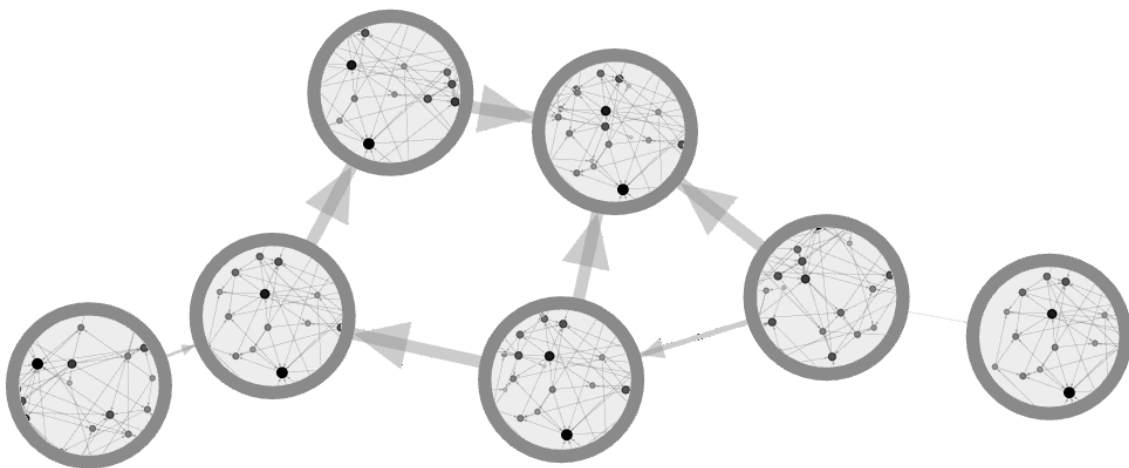


Fig. 3: Schematic representation of a public spherule, composed of a number of more or less well-connected issue publics