Modelling contemporary gatekeeping: the rise of individuals, algorithms and platforms in digital news dissemination

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Modelling Contemporary Gatekeeping. The Rise of Individuals, Algorithms and Platforms in Digital News Dissemination.

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Abstract

Gatekeeping theory struggles to describe the rise of algorithms and users as information selectors in digital spaces. Algorithms and users may co-exist as decision-makers and reach high visibility through decentralized gatekeeping mechanisms. Classic gatekeeping theory is no longer adequate in describing contemporary news selection processes online and recent gatekeeping approaches at theory-building are isolated and have not been synthesised in a coherent gatekeeping theory. This theoretical paper addresses this issue and develops a digital gatekeeping model in three steps: First, four gatekeeper archetypes are identified that differ in access, selection criteria, and publication choices. Second, gatekeeping frequently involves platforms on which gatekeepers operate. These platforms either apply gatekeeping mechanisms controlled by a central authority or rely on collaborations between many micro-level interactions to publish news. Third, a digital gatekeeping model is derived to model the four gatekeeper archetypes and their selection processes in relation to platforms employing collaborative gatekeeping mechanisms. This proposed digital gatekeeping model extends previous research on gatekeeping by synthesising classic gatekeeping theory with contemporary approaches and by providing a framework for future research on information control and dissemination.

Introduction

For the last half century, gatekeeping theory has provided a solid framework for analysing the selection and control of public news. To be a gatekeeper means to exercise control over what information reaches society and how social reality is framed. Gatekeepers "facilitate or constrain the diffusion of information as they decide which messages to allow past the gates" (Shoemaker and Vos 2009, 21). Traditionally, these decisions have been associated with journalism, and, even today, print and broadcast media companies remain important contributors to our information environment.

However, the gatekeeping process has changed. Phenomena such as the Arab Spring, the Occupy movement and WikiLeaks showed a changing role of traditional media to act as the exclusive gatekeeper in the selection and dissemination of information. In recent years, gatekeeping tasks are increasingly carried out by non-journalistic actors and platforms (Nuernbergk 2012). For example, in Egypt (2011) and Turkey (2013), the social network *Twitter* was used to circumvent information control by state media and to propagate alternative news items (Demirhan 2014; Meraz and Papacharissi 2013). In western democracies, non-mainstream news sources like individuals on social media or alternative news portals compete successfully against institutionalised news outlets for power over the public agenda (Fletcher and Park 2017). As traditional journalism's control over publicly available information recedes, new actors like *Google* and *Facebook* or Blogs like *Breitbart* emerge that follow strategic or personal interests and influence the selection and dissemination of information.

Moreover, these new actors apply radically different selection processes. For example, social networks allow a multitude of individuals to select and curate information based on their individual selection criteria (Jürgens, Jungherr, and Schoen 2011; Meraz and Papacharissi 2013). Social networks are complemented by algorithm-based services, such as search engines or news aggregators, which are redistributing and channelling information on the web. *Google*'s *PageRank* algorithm applies predefined and programmable criteria to influence which news sites can be found in their search engine (Wolters 2012). Thorson (2008, 486) concluded that algorithms such as news recommender systems "have the potential to radically shift not only how we select what news to read, but also the attitudes we form about it". Taken together, the rise of algorithms and platforms that enable individual users and services to take part in publishing news has changed gatekeeping selection processes and news flow patterns. Accordingly, gatekeeping theory must also change.

Although research has brought forth a variety of new approaches that adapt gatekeeping theory to the information age (e.g., Barzilai-Nahon 2008; Bruns 2005), gatekeeping remains a contested and fragmented research field. All of the current approaches address particular aspects of information control and focus on specific actors or processes. Mostly, they revolve around the question of whether journalism remains relevant or individual users have taken over the gatekeeping roles. However, there is no gatekeeping framework to relate individuals and media outlets to one another beyond a sequential selection loop. It is thus crucial to identify the challenges for gatekeeping and to refine the current selection processes into a new digital gatekeeping model. The relevant research questions are as follows: In such a digital environment, how can users and algorithms be incorporated as gatekeepers in

gatekeeping theory? How are platforms influencing the gatekeeping process, and what gatekeeping mechanisms are used?

The purpose of this theoretical paper is to develop a gatekeeping model that builds on existing theory by including users and algorithms as gatekeepers in a complex gatekeeping process. For this endeavour, first, current transitions in gatekeeping theory are discussed. Based on these insights, a typology of digital gatekeepers is developed, and the emerging importance of platforms and their gatekeeping mechanisms is explored. Finally, a digital gatekeeping model is proposed that highlights the relationships between platforms, gatekeepers and gatekeeping as a process.

Gatekeeping Theory in Transition

To understand and address the challenges to gatekeeping theory, the basic assumptions of gatekeeping need to be clarified. The origins of this concept can be traced back to Lewin (1947), who described gatekeeping as the process of food reaching the family table. In his understanding, food may come from various sources (e.g., the grocery store or the garden), and the process of putting food on the table requires a series of decisions to be made (e.g., discovering it, buying it and transporting it). Lewin subsumed theses sources and the ensuing decisions under the term "channels". Each channel consists of several sections, one for each decision. Whether food (or a news item) enters such a channel, or moves from one section to another, is decided by one or several gatekeepers (Bass 1969). The entrances (decision or action points) to the channel and its sections are called gates. Thus, gatekeeping is understood as the process of items passing through a channel, whose entrance and section gates are guarded by gatekeepers.

Building on this gatekeeping concept, White (1950) was the first author to look at gatekeeping specifically in journalistic contexts. He understood the editor as the gatekeeper, and the abstract entity of all selected information as "news". Following White's observations, gatekeeping research in communication science has revolved around "the process by which the billions of messages that are available in the world get cut down and transformed into the hundreds of messages that reach a given person on a given day" (Shoemaker 1991, 1). Shoemaker and Vos (2009, 3) have written about "events [that] are covered by the mass media", coupling news to novel information, or new interpretations, and to publication (the term shall subsequently include broadcasting for the sake of simplicity) for a potentially large audience. However, controlling information signifies more than just selection; it also includes what Donohue, Tichenor and Olien have defined as "decisions about message encoding, such as selection, shaping, display, timing, withholding, or repetition of entire messages" (1972, 43). Such decisions are made at different stages. Bass (1969) identified two roles in (journalistic) gatekeeping: the "news gatherers", who find and consolidate information into a news item, and the "news processors", who turn the news item into a completed product that is ready for publication. Even if both roles can be performed by the same person, this shows that gatekeeping consists of more than a one-time process of selecting information. Moreover, the decisions of gatekeepers are influenced by positive and negative forces. Forces can be understood as influencing attributes of actors and of the channel in which gatekeeping takes place. The stronger these forces, the more they will affect the selections made by

gatekeepers. For example, the high news value of a specific story is a positive force, and editorial limitations may be a negative force on the inclusion of a specific news item.

However, these observations have been predominantly tied to journalism. For the past decade, the rising importance of digital platforms and the dissemination of information by non-journalistic actors has put gatekeeping theory in transition. There is a visible discrepancy between classic journalistic gatekeeping and phenomena such as viral posts. Thus, in the last decade, gatekeeping theory has been continuously challenged and modified. Related research has predominantly focused on two questions: (a) Are there still gatekeepers guarding the gates, and who are they? And (b) how has gatekeeping changed as a process?

Who Guards the Gates?

First, many authors have questioned the role and the power of gatekeepers in a new media environment. The definition of the gatekeeper is complicated by the multiplicity of observable actors in the gatekeeping process online. Much research has focused on individual users and their role in journalism, using phrases such as "citizen journalism" or "participatory journalism" (Boczkowski and Mitchelstein 2012; Wall 2015). Despite there being little disagreement on the need to include individuals in the gatekeeping process (e.g., C. Nielsen 2014; R. Nielsen 2014; Singer, 2014), which led Shoemaker and Vos (2009, 33) to note that "we are all gatekeepers", there is no consensus on how to fit them into the existing gatekeeping theory. Some have argued that these individuals have made gatekeeping theory completely redundant (Williams and Carpini 2004), whereas others understand gatekeeping by individuals as follow-up communication or "secondary gatekeeping" (Singer 2014). For example, Shoemaker et al. (2010) included users as *subsequent* "audience gatekeepers", who followed legacy media. Users are thus primarily understood as key influencers for their social groups on various digital platforms (Kwon et al. 2012).

Vice versa, Jensen (2015) identified "second-screen" gatekeeping as the inclusion of social network communication in legacy media. Bruns (2005) has highlighted the publishing power of individuals in contrast to journalism. He identified a changing role of journalism—a shift from *controlling* the construction of social reality to *curating* it by re-publishing content through journalistic platforms after it was already visible on the web. This means that journalists act as "gatewatchers" instead of gatekeepers.

In contrast, the power of non-human actors such as search engines, aggregators or rating and curation platforms — in short, algorithms — as gatekeepers has been addressed by a rather small field of researchers (e.g., Bui 2010; Diakopoulos 2014; Lerman and Ghosh 2010; Lewis and Westlund 2014; Napoli 2014; Tandoc 2014), leading Thurman (2015, 9) to note that there is "an almost exclusive concern with human gatekeepers". Algorithms can be understood as "problem-solving mechanisms" in which algorithmic selection or the "automated assignment of relevance to certain selected pieces of information" takes place (Just and Latzer 2016, 2). Depending on their purpose, algorithms facilitate user activity, sharing, collaborative ranking or automated rankings. For example, *Facebook*'s NewsFeed-algorithm assigns relevance to posts from friends and selects some to be more prominent, and the *Google* search engine algorithm "Hummingbird" selects and displays certain websites according to their computed relevance to a custom search term. Algorithms also employ

personalisation that is often unnoticed by their users (Powers 2017), which further instills fears of filter bubbles (Pariser 2011). For example, Napoli (2014) has stressed that the algorithms in search engines, aggregators and recommender systems shape what is considered to be of public interest. They – or their proprietary companies - are considered governors of information flow on many digital platforms (Gillespie 2014). The role of algorithms in digital gatekeeping is rising, and they have become part of many processes in the construction of social reality (Just and Latzer 2016).

Summarising the above, contemporary gatekeeping may be shaped by what Thorson and Wells (2016) have named «curated Flows», in which several curators *simultaneously* co-exist and shape the flow of information. However, this understanding requires a more flexible notion of the process of gatekeeping.

A Relational Turn?

The second strain of research has addressed the changing nature of gatekeeping as a process. Shoemaker et al. (2001, 233) have noted that gatekeeping should not be "just a series of in and out decisions", but must instead describe the "overall process through which social reality transmitted by the news media is constructed". Not everyone who can and does communicate online is relevant enough to construct social reality. Thus, Michael and Vos (2015) (among others) have argued that gatekeeping should follow a relational approach in which gatekeepers are those communication nodes with the most relevant connections. Barzilai-Nahon (2008) has focused on the power relations between actors in a gatekeeping setting. Her concept of "networked gatekeeping" highlights the active role of the audience, who she called "gated". The gated are active influencers of gatekeeping decisions, instead of being only a receiving entity. Although Barzilai-Nahon has emphasised that gatekeepers are the ones who exercise control—she calls them the admins of their network—the power relations between information selectors and their peers can vary. In her view, there are multiple types of gatekeeper–gated relations that are dependent on power, relations, information production possibilities and alternatives inside a network. This approach abandons the concept of a unidirectional news flow and instead models dynamic gatekeeper–gated relations that may change over time (Barzilai-Nahon 2008). Thus, the construction of social reality is no longer limited to specific actors. Instead, to become a gatekeeper, anyone in a network can cultivate relations with his or her peers and thus achieve a gatekeeping position for a certain amount of time.

However, relations are formed differently depending on the network. Shaw (2012) looked specifically at interdependent user-based decision processes that build on interactions. He identified two types of gatekeeping mechanisms online: centralized and decentralized. Whereas centralized gatekeeping is the traditional notion of central authorities exercising control over information, "decentralized gatekeeping consists of numerous, microlevel interactions between individuals engaged in a particular collective endeavour" (Shaw 2012, 350). Decentralized gatekeeping implies that norms in the decision process are formed socially from user to user and that the selection of prominent topics stems from the accumulation of individual user opinions and articulations. For instance, the single up-and-down voting of a *Reddit* article is irrelevant, unless a certain number of other individuals do

the same, thereby promoting the article with aggregated votes. Shaw's study focused on a single mechanism on a single platform. The present study argues that the implications of decision processes based on collective interactions are relevant for gatekeeping in general.

To summarise, there is general agreement that gatekeeping theory needs to be adapted to "contemporary media ecologies" (Vos 2015). Recent approaches have identified new gatekeepers, new gatekeeping mechanisms and a shift from a one-directional news flow to a complex network of relations involving existing and new gatekeepers. However, the co-existence of journalism, collaborative platforms, powerful algorithms and social networks indicates that none of these gatekeeper approaches are mutually exclusive. Instead, gatekeeping has become a shared process of news diffusion, in which multiple gatekeepers, selection mechanisms and platforms interact (Thorson and Wells 2016). Gatekeeping in contemporary media ecologies bears more resemblance to an open city with local, individually managed centres than a centralised city with walled gates. Consequently, gatekeeping theory can no longer focus on the selection of a specific gateway (be that journalism or collaborative platforms); it must instead provide a model on information flows and the dominant agents that contribute to the diffusion. So far, there have been no encompassing attempts to redefine the central terms of gatekeeping or to model possible modes of interaction within. Therefore, the present article argues that there is a need for a re-conception of three main notions associated with gatekeeping: gatekeepers, gatekeeping mechanisms and gatekeeping as a process. Thus, the following sections will be structured as follows. First, a new gatekeeper typology will be drawn. Second, the role of platforms and gatekeeping mechanisms will be discussed, and third, gatekeeping will be modelled as an iterative news dissemination process.

A Typology of Digital Gatekeepers

Finding agents of information flow

In contemporary media ecologies, anyone can publish content. More precisely, 'individual' accounts can be amateurs without professional affiliations, journalists working for institutionalised news companies or accounts of organisations or interest groups that are professionally and strategically managed. In addition, anyone of these 'individuals' can shape, interpret and reinterpret news items that have already been published and redistribute them on several platforms to their peers (Singer 2014; Thurman 2011). The sharing of content has been subsumed by Choi (2016) as 'externalizing' content by endorsing (through 'like' or 'favourite' buttons) or recontextualizing (sharing and reposting) news items. Both publishing news items and recontextualizing existing news items turn individuals into information selectors for their respective audiences (Goode 2010). Even the endorsing of content—technically not a publication in itself—may lead to the publication of content. For example, through user-based ranking mechanisms on platforms, original user-created content may reach a high level of visibility (Lerman and Ghosh 2010). Thus, by publishing, endorsing or by recontextualizing already published news items, individuals become gatekeepers. Just like individuals, algorithms that select information and disseminate it

essentially act as gatekeepers. However, among the countless and diverse algorithms on the web, only those that select and shape information and make it available to an audience (such as *Google*'s Hummingbird or *Google* News) can be understood as agents in the information flow and thus as "social media gatekeepers" for their audience (Vos 2015). Even though they rarely create news items themselves, algorithms select and publish information in a way that is similar to a news outlet (Pariser 2011). Potentially, every individual and every publishing algorithm *could* be a gatekeeper, whereas only few of them *are* for any given subject.

To complicate matters further, information may travel from one channel to another. For instance, a *Facebook* post may be picked up by a media outlet, whose article will then be shared on *Twitter*. Information still follows a series of decisions from gatekeepers; these decisions are, however, not bound to a particular "media" or "audience" channel. Thus, while the term "channel" can still be used to define the particular flow of a news item, defining channels becomes descriptive rather than explanatory. Instead of fixed channels, information flows between platforms such as news outlets, social networks and search engines. Individuals within these platforms may or may not act as gatekeepers; their flexibility as "produsers" (Bruns 2009) leads to dynamic information flows that may change all the time.

However, even without the guiding notion of channels, gatekeepers are not free from the forces influencing their decisions or the environment they are subjected to. Every individual and algorithm is embedded in particular (social) systems and subjected to particular forces (e.g., guidelines of their governing organization). In other words, gatekeepers are not limited by channels but are instead empowered or disadvantaged by their affiliations with (journalistic) organisations and institutions. These affiliations shape their behaviour as gatekeepers, which leads to different information being publicly visible and which ultimately changes gatekeeping as a process of news diffusion.

Therefore, in an attempt to model the influence of these affiliations on traditional, collaborative and algorithmic gatekeeping practices, this paper divides a gatekeeper's selection process into their access to information (input-stage), selection processes (throughput-stage) and publication possibilities (output-stage). In the input stage, gatekeepers select information from their available sources. From the available sources, the gatekeeper then selects some elements and processes them into a news item based on the gatekeeper's selection criteria (throughput stage). Lastly, the created news item is published or broadcast on some (or several) "spaces" – which includes legacy media, platforms or websites (output stage). The present article argues that gatekeepers can be categorized along these stages and suggests a distinction between journalists, individual amateurs, strategic professionals and algorithms as gatekeepers (Table 1). This typology of four types of gatekeepers is by no means meant to be exhaustive: Especially individual amateurs, for instance, need to be further differentiated into subgroups, as large differences between elites and non-elites are to be expected. Still, this typology serves as a framework to identify semantic differences between gatekeepers: For each type of gatekeeper, different basic assumptions about selection, access and publication possibilities need to be made.

Table 1. *Journalists, Individual Amateurs, Strategic Professionals and Algorithms as Gatekeepers*

	Journalists	**Individual Amateurs**	**Strategic Professionals**	**Algorithms**
Input **Access to information**	High by affiliation with established media institutes	From low to high, depending on affiliations & social standing	Low or high, depending on the governing organisation	Low or high, depending on the governing organisation
Throughput **Selection criteria and framing**	Newsroom routines (organisational and ethical)	Individual predispositions, personal interests	Strategic, organizational interests, professional routines (e.g., Public Relations)	Programmable criteria based on organizational interests
Output **Choice of publication**	Established journalistic spaces, social spaces	Social spaces, collaborative spaces, proprietary spaces	Social spaces, collaborative spaces, proprietary spaces	Proprietary spaces, social spaces or integrated in other spaces

Access (input-stage)

First, 'access' as the ability to witness events or retrieve novel information is not a new variable; differences in access were always considered important by gatekeeping research (Shoemaker and Vos 2009). However, these differences grow exponentially when including non-journalistic actors and thus merit a closer inspection. The everyday user does not rely on the stable and institutionalised sources of an editorial office. Rather, information will be accessed through multiple channels (e.g., news companies, *Twitter* or *Facebook*), each of which are subjected to different forces (e.g., the restriction to 140 letters by *Twitter*). Individual amateurs without social or organisational affiliations to powerful organisations or institutions are limited to personal information networks. Strategic professionals, often working for organizations or interest groups, *can* access otherwise inaccessible information.

However, there are clear patterns of a continuing relevance of journalists as the breakers of news: Because journalists profit from their affiliation to media companies, they have access to elite sources such as state representatives, experts, elites, news agencies and information brokers (Reich 2008). Given this access, they remain in a powerful position to influence the news ecosystem significantly (Neuberger and Nuernbergk 2010). In addition, platforms, such as social networks, host many accounts used by professional journalistic individuals with high levels of access to information (Russell et al. 2015). For instance, Lasorsa, Lewis, and Holton (2012) pointed out that many journalists are also active on *Twitter* with the access but without the label of their news organisation. A study by Kwak et al. (2010) even implied that the most prominent *Twitter* users have close ties to established organisations or elites.

This variance in access to information is similar for automated algorithms and their algorithmic selection. Algorithms rely on a pool of structured information and its automated processing, which selects and assigns relevance to certain content (Latzer et al. 2014). The access of algorithms needs to be defined in their code by their creators: Whoever is in charge

of an algorithm defines the available sources and the sophistication of the algorithm. Thus, for the most part, the level of access of algorithms is defined by its governing organisation, which follows strategic market goals and sets up their business and data gathering models accordingly (e.g., *Google's* or *Facebook's* terms of service that allow a wide range of personal data to be collected). Because its sources and criteria are predefined, in algorithmically driven news applications (such as *Google* News), there is a risk that unconventional information or previously unknown sources are under-represented or not represented at all: The algorithm may create its own filter bubble (Nguyen et al. 2014).

In summary, the diversification of gatekeepers renders the degree of access more important.

Selection Criteria (throughput-stage)

Second, the selection criteria of journalists are different from those of non-journalistic gatekeepers. In all human gatekeeping decisions, information is selected based on personal criteria and processed/framed according to predispositions and attitudes (Eilders 2006). In addition, everyone is embedded in a social system and subjected to all of the forces within. As many gatekeeping studies have highlighted, the journalistic selection process is dependent on many personal and institutional forces surrounding the gatekeeper (Shoemaker et al. 2001; Donohue, Olien, and Tichenor 1989). In journalism, the personal selection criteria are superimposed by organisational and institutional forces such as journalistic standards or editorial policies (Mitchelstein and Boczkowski 2009). In contrast to journalists, an individual amateur or even a strategic professional is not bound by the principles of fact checking or transparency of sources. Individuals' selection criteria are personal, difficult to predict and potentially based on topic-specific and changing predispositions, attitudes and emotions (Nguyen et al. 2014; Picone, Wolf, and Robijt 2016). Selections may be more socially oriented; for instance, selection could be based on status among digital peers (Lee and Ma 2012) or what others consume most (Trilling and Schoenbach 2014). Moreover, the affiliations of strategic professionals to non-journalistic organisations or individual amateur's interests in topics may guide their selections (Trilling, Tolochko, and Burscher 2016). For example, individual users on most common social networks promote non-public affairs and entertainment rather than politics and public issues, steering the former topics toward higher levels of visibility (Kwak et al. 2010).

Algorithms, in contrast, select and process information based on predefined lines of code. Unless the algorithm is self-learning, it operates by following mathematical and logical procedures. Therefore, the information serving as the input must be translatable into data that are readable by the algorithm. Whatever is not readable cannot be interpreted by the algorithm and is therefore not selected. For example, social news sites such as rivva.de work by calculating the most read, most shared or most active news articles because of the quantifiable nature of these characteristics. These sites do not estimate the quality of the texts. Normative values such as journalistic quality are especially hard to reduce to factors. Accordingly, these characteristics are either not part of the selection criteria or are predefined by the programmers. Thus, whereas humans may apply an individual sense of quality, algorithmic selection struggles to recognise normative factors.

Online, algorithms most commonly act as gatekeepers within platforms that redistribute already published news items (such as in *Google*, *Google News*). However, there is initial evidence that algorithms create news text themselves (Dörr 2015). According to Dörr (2015), a growing number of journalistic news items are written by algorithmically powered natural language generation. Even though automated news production by algorithms has been rare in journalism to this point, the influence of text-generating algorithms is likely to increase in the near future (Coddington and Holton 2014). Thus, gatekeeping theory must include the possibility of algorithms as the gatekeepers that break news first.

Choices of Publication Space (output-stage)

Third, the choice of publication space depends on whether the gatekeeper is algorithmic, journalistic or individual (both amateurs and professionals). The difference between professional journalists and other human gatekeepers is evident: While journalists can rely on organised and institutionalised news websites (proprietary platforms), others must use other spaces that allow them to publish content. They can still act as gatekeepers, either by establishing their own publication spaces (e.g., blogs) or through the use of third-party platforms that allow their content to be published (e.g., *Twitter*, *Facebook*, *Reddit*). Although it is possible to create individual websites or blogs, other platforms, such as the social networks *Twitter* or *Facebook*, offer much better visibility for published content. The large user base of social networks and the possibility of pushing content to recipients attracts journalists as well. Many journalists also publish their news on *Twitter*, and many news companies own a corporate account on *Facebook*. Moreover, on collaborative platforms, such as *Reddit*, users may publish any kind of information and let others rate their news item. If the content is ranked highly enough, it gains visibility and may spark other users—including journalists—to forward it to other platforms. However, third-party platforms do not all follow the same rules or appeal to the same groups. This indicates that the individual's choice of platforms is highly influenced by the attributes and the stance of the platform, leading to platform-specific behaviour.

Contrary to this, algorithmic gatekeepers such as search engines (e.g., *Google*), news aggregators (e.g., rivva.de) and social filters (e.g, *Facebook NewsFeed*) publish on their proprietary platforms. The output of algorithms is often tied to specific web spaces, because their code needs to run on some physical computing device. For example, the news aggregator *Google* News ranks amongst the most visited digital spaces and has been shown to influence online newspapers to specialise their content to maximise their performance on this aggregator (Jeon and Nasr Esfahani 2013).

This typology serves as a starting point that needs further refining. However, it shows that judging an algorithm by journalistic norms is just as problematic as ignoring the differences in access between journalists and the individual amateurs. Whereas some gatekeepers can publish or broadcast on their specific channels, others are depending on third party platforms. In such cases, these non-journalistic platforms act as crucial intermediaries between gatekeepers and their audiences. For this reason, the role of platforms and their applied gatekeeping mechanisms deserve closer attention.

Platforms and Their Gatekeeping Mechanisms

In most cases, a single user's opinion has little or no impact on the overall diffusion of a news item. Everyday users do not profit from affiliations with established news outlets and are (with notable exceptions) not in a position to reach large audiences by themselves. Most user-generated news items do not change or influence the public agenda by themselves. Thus, to reach their audience and become more visible in this information overflow, individual amateurs and strategic professionals have shown to rely on platforms.

Platforms can be understood as active hubs of communication that set the rules of interaction. For instance, on most social networks the possibilities for interaction are structured. There are rules about how individual user content is aggregated or rendered visible. Thus, new selection mechanisms have emerged that are not based on central authorities, but rather on the aggregation of individual selections. Shaw (2012) has dubbed such mechanisms "decentralized gatekeeping" that consist of many microlevel interactions between individuals and produce a selection of prominent topics. The individuals involved act as gatekeepers by selecting and publishing information, but the publication remains irrelevant for the construction of social reality unless it also gets picked up and republished by other individuals. If repeated enough, images, opinions or videos can even go viral (Kwak et al. 2010). However, if not, they are only seen by a specific local audience (e.g. friends on *Facebook*). Such decentralized gatekeeping mechanisms come in many variants. *Facebook* and *Twitter* are the most popular examples, but they are not the only ones. One of the more common applications is the aggregation of the most viewed or most clicked news stories on a website (see "collaborative filtering" in Knobloch Westerwick et al. 2005). In this case, merely reading an article promotes it.

However, decentralized gatekeeping requires rather specific structures to work. Decentralized gatekeeping makes use of "social navigation", the orientations of users on the publicly visible selections of other users (Engelmann and Wendelin 2015). Not all platforms offer social navigation or the possibility of networked many-to-many communication. The platform proprietor chooses which gatekeeping mechanism is applied on the platform. Thus, the idea of user empowerment is a bit illusive. For example, if *Twitter* were to manually select the recipients of users' tweets, they would effectively negate any option for their users to act as gatekeepers to their peers.

In digital gatekeeping, platforms serve as network nodes, in which a multitude of actors (including journalists and automated bots) can communicate according to the rules set up by the proprietor of the platform. Thus, the power of individual amateurs to become gatekeeper on a platform is limited by its gatekeeping mechanism. Moreover, these mechanisms can be exploited by strategic professionals that employ fake accounts or bots to influence public opinion.

Because gatekeeping can now be performed simultaneously by multiple actors in multiple spaces, the definition of gatekeeping has become more complex: a platform can host many gatekeepers, and a gatekeeper can be present on many platforms at the same time. Conceptually, gatekeepers and the spaces of publication must be uncoupled. News items can follow virtually any trajectory in their dissemination. However, by combining the different

types of gatekeepers with spaces and their gatekeeping mechanism, gatekeeping as a process can be modelled. For this purpose, the present article proposes a new model of gatekeeping processes. In this model, the content no longer runs along fixed channels, gatekeepers are uncoupled from publication spaces and gatekeeping mechanisms can be applied by non-journalistic actors.

Modelling Gatekeeping as a Process

This article has argued that researchers must differentiate between types of gatekeepers, because different types of gatekeepers differ in access, criteria for selecting content and use of the multiple spaces where content may be published. Some Gatekeepers follow a linear, unidirectional gatekeeping process (e.g. inside a news organisation or a media channel), but news selection processes may also occur in a decentralized way through many individual gatekeepers on multiple platforms. Gatekeeping as a process of constructing social reality through news selection must include multiple gatekeeper types that simultaneously interact with different gatekeeping mechanisms on various platforms. These conditions are not met by contemporary gatekeeping models like, for instance, the most recent gatekeeping model of Shoemaker and Vos (2009), which already included users as gatekeepers. According to their model, news items are primarily created by journalism, with information passing through a journalistic selection process. The possibility for non-journalistic actors to break news is not taken into account. Second, there is no choice of publication platform. The differences between *Twitter* and a news website, for instance, are not part of the model. Third, an audience channel is included as the feedback of popular topics among the audience, but this does not shed any light on how the audience can become gatekeepers or on what gatekeeping mechanism they rely.

Thus, the present article proposes a new gatekeeping model based on four different types of gatekeepers and the more powerful role of platforms (Figure 1). Following the considerations above, the gatekeeper and the platforms must be conceptually uncoupled. Thus, gatekeeping in this model is divided into two steps: (a) the selection process of the gatekeeper and (b) the gatekeeping mechanism of the platform.
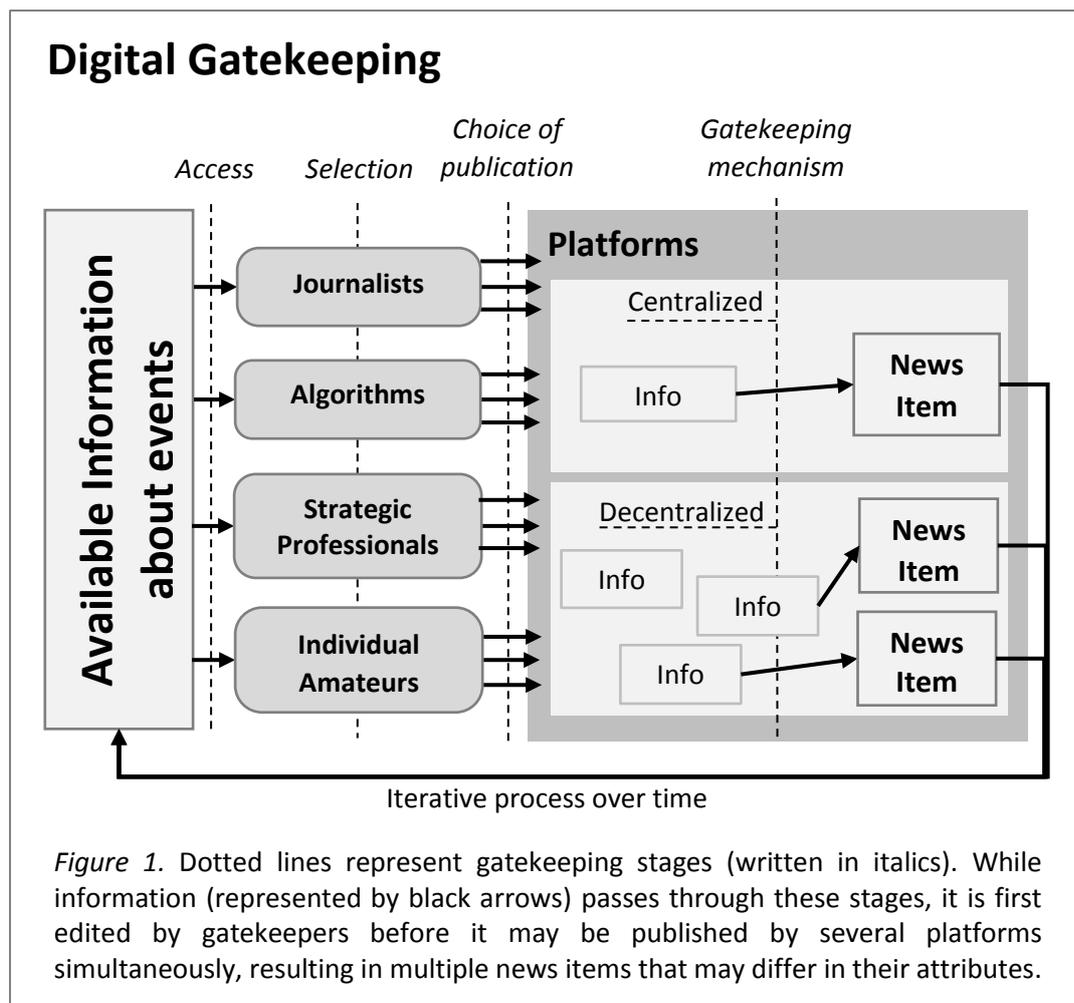
Figure 1. Dotted lines represent gatekeeping stages (written in italics). While information (represented by black arrows) passes through these stages, it is first edited by gatekeepers before it may be published by several platforms simultaneously, resulting in multiple news items that may differ in their attributes.

Figure 1. Digital Gatekeeping as a News Dissemination Process.

First, all of the gatekeeper types mentioned earlier have access to specific sources, and, necessarily, select some information over other information for a framed news item that will be published. As highlighted in Table 1, the selection process can be divided into three stages. The differences in access to information, selection criteria and preferred spaces of publication strongly influence which news item will be selected and how it will be framed. The whole news selection process itself is influenced by multiple forces, as suggested by previous literature.

The crucial difference, however, is that the following choice of publication has an effect on where and how the news item gets published. Again, not every gatekeeper has the same means for publication and individual amateurs may be dependent on some platforms. This additional stage allows the consideration of power relations between gatekeepers and publication platforms. These relations range from equality (gatekeeper owns platform/belongs to company running it) to complete dependence (gatekeeper is an ordinary user without alternatives).

Once a platform is chosen, specific gatekeeping mechanisms determine the visibility of the published content. Whereas centralized mechanisms immediately publish the news item and thus promote the selector to be a gatekeeper, decentralized mechanisms still have to

aggregate other individuals' opinions to decide whether this specific piece of information will be visible and/or reach a large audience. For example, a journalist publishing on his or her media outlet's website will become a gatekeeper for a large audience, whereas an individual *Twitter* user is likely to depend on the aggregation of retweets or hashtags to reach as many people. Only through the aggregation of the same action by other users (e.g., through sharing the original post) will a news item become visible for a large audience. Publishing a news item on a platform with a decentralized gatekeeping mechanism therefore does not automatically render the user a gatekeeper.

However, even when using decentralized platforms, individual users may gain a strong position that allows them to become gatekeepers. Depending on the network structure, topic-specific super-users (Meraz and Papacharissi 2013) may evolve that are able to have a larger impact on the network. As the current example of Donald Trump on *Twitter* shows, a prominent status can even give credibility and reach to their published content. In other words, some users may attain a certain reputation within their network that eases the adoption of their shared news item or renders their selections visible immediately. This is in line with the results of Lerman and Ghosh (2010), who showed that the diffusion of information by users depends heavily on the structure of the network. Moreover, other research suggests that a user's position in networks changes with topics (Zeller et al. 2014). Indeed, because individuals are unlikely to be professionals, their gatekeeper role may be limited to specific news items of personal interest.

Regardless of how a news item is shaped by the gatekeeping mechanism and its gatekeeper(s), it will be available for secondary gatekeepers to select their own aspects of it and reshape the news item. This adds simultaneous iterations to the whole process. Consequently, if the access of a gatekeeper is low, the news items it publishes tend to be personally framed reiterations of other publications. As a consequence, the news item may change over time. Since there can be multiple gatekeepers acting simultaneously, there may even be conflicting interpretations of the same content by various gatekeepers. However, past work suggests that there are news attention cycles that hint at how often and over what time period a topic will receive public attention (Djerf-Pierre 2012).

Overall, the proposed model addresses contemporary challenges to gatekeeping. First, as already described by Lewin (1947), news items may change in content and framing during their path through a channel. However, depending on the path the news item has taken (from gatekeeper to platform to gatekeeping mechanism), the news item is likely to change differently. For example, a study by Qin (2015) showed that popular issues are framed differently depending on whether they are processed through a decentralized mechanism such as *Twitter* or by professional journalists. The choice of platform and the gatekeeping mechanism influence how a news item will be shared in an additional iteration. In other words, the gatekeeping path (gatekeeper, platform, mechanism) becomes an attribute of the news item itself. For example, the perceived credibility of the information source acts as an important contributor to the adoption of the presented content (Grosser 2015). Certain spaces are considered trustworthy, and this increases the likelihood of their content being adopted, whereas other spaces have a negative reputation or no reputation at all. Spaces affiliated with professional journalism are expected to validate the content according to journalistic norms.

Indeed, Chung, Nam, and Stefanone (2012) found much higher credibility for online mainstream media than for online independent media, such as thedrudgereport.com. More importantly, they found that the absence of recognised gatekeeping mechanisms—in this case, the absence of centralized journalistic gatekeeping—has a negative influence on whether information is considered trustworthy. Nonetheless, Metzger, Flanagin, and Medders (2010, 415) pointed out that the "ability to aggregate information and to connect individuals to one another […] provides new potential for determining information credibility and for undermining traditional authorities". Decentralized gatekeeping mechanisms can replace the credibility of journalists with the "wisdom of the crowd" through the aggregation of user ratings or opinions.

In addition, the numerous possible configurations of gatekeepers, platforms and mechanisms allow many cross-channel interactions, which suggests that a higher diversity of news items and frames will be visible. However, by acknowledging that even decentralized gatekeeping follows certain mechanisms of information selection, gatekeeping research can help to explain why counterarguments or even counter-publics sometimes emerge and sometimes do not.

Finally, the model proposed in the present article stresses both the equality of the network, in which virtually all connections between actors and spaces are possible, and the inequalities of gatekeeping power that is distributed among only a few actors and platforms. Journalists usually publish their content in their proprietary spaces (e.g., their websites) *and* on social networks such as *Twitter* or *Facebook*, as most spaces offering decentralized gatekeeping mechanisms are open to all individuals. In contrast, most non-journalistic actors are dependent on decentralized mechanisms or—if available—proprietary spaces. This stronger role of platforms has important ramifications. Strategic professionals can reach large audiences with unchecked or strategic communication. When algorithmic or personal selection criteria replace journalistic criteria, misinformation can spread through networks. Moreover, successful platform owners, who are for the most part non-journalistic, are in a position to influence who is publicly heard and how news items are presented. Digital gatekeeping is thus more prone to non-journalistic interference than is traditional gatekeeping in the process of constructing social reality.

Conclusion

The aim of this article was to develop a gatekeeping model that is better suited than existing models for explaining digital information selection processes. In doing so, I have argued that classic gatekeeping theory is no longer adequate in describing contemporary news selection processes online and that recent gatekeeping approaches at theory-building are isolated and have not been synthesised in a coherent gatekeeping theory. By addressing these issues, this article returned to the central definitions of gatekeeping and critically addressed their applicability in a digital environment. The identified challenges required gatekeeping theory to acknowledge a typology of gatekeepers, include platforms and redefine the process of gatekeeping. First, journalists, individual amateurs, strategic professionals and algorithms were identified as gatekeeper archetypes that differ in access, selection criteria and the framing of information, and the publication choices. Second, publication spaces are

uncoupled from gatekeepers. Instead, spaces are understood to act as platforms on which gatekeepers operate. These platforms either apply gatekeeping mechanisms controlled by a central authority (centralized gatekeeping) or rely on collaborations between many micro-level interactions to publish news (decentralized gatekeeping). Third, a digital gatekeeping framework was derived to model the four gatekeeper archetypes and their selection processes in relation to platforms employing collaborative gatekeeping mechanisms.

The power of this approach lies in its ability to build on existing gatekeeping research on journalism and to include digital variants that seemed to contradict each other, such as secondary gatekeeping, networked gatekeeping or gatewatching. The questions central to gatekeeping—who selects which information according to what selection mechanism, and how the news item is framed before it reaches the public—can only be answered if multiple gatekeeping processes and their interplay are examined. However, further research is needed to test the modelled gatekeeping processes. For example, one could examine how platforms influence individuals' selections processes. Moreover, case studies could show differences between gatekeeping patterns of gatekeeper type, platform and gatekeeping mechanism combinations for specific topics, which may illuminate the degree of fragmentation of social realities. The proposed gatekeeping model could also shed light on how misinformation campaigns work despite the prominence of established journalistic gatekeepers. Decentralized mechanisms and algorithmic gatekeepers enable non-journalistic actors to construct alternative social realities, especially if the news items are ignored by journalism. This may explain mistrust in journalism or, for example, counter-publics and government restrictions on platforms, individuals' access or publication possibilities in states with restrictive media policies.

Overall, the proposed digital gatekeeping model extends previous research on gatekeeping by synthesising classic gatekeeping theory with contemporary approaches. Crucially, it shows that future research must connect to findings on news flow patterns, non-journalistic organisations, algorithmic applications and social behaviour to be able to explain digital selection processes fully. The proposed model serves as a framework that helps to identify relevant factors for the questions central to gatekeeping: Who is selecting which information according to what selection mechanism, and how is the news item framed before reaching the public? In particular, the typology in the present article allows for the opening of the black box of digital gatekeepers by delivering a framework for identifying structural differences between them. Furthermore, by developing a digital gatekeeping model to incorporate journalists, individuals and algorithms in a shared news dissemination process, this article has created a framework for future empirical studies. Although the emergence of a digital environment that relies heavily on algorithms and new forms of collaborative user-generated content has challenged gatekeeping theory, the concept of gatekeeping remains fruitful for describing digital selection processes. More research is needed to further refine the gatekeeper typology and gatekeeping mechanisms on platforms. The analysis of these novel forms of gatekeeping has become even more important now that the gatekeeping role has become open for everyone to influence and too complex for anyone to control.

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