

Can digital technologies threaten democracy by creating information cocoons?

Cédric Gossart¹

Keywords

Digital technologies, ICTs, democracy, information cocoons, information closure.

Abstract

This chapter examines the extent to which digital technologies can threaten democracy by creating “information cocoons”, within which information is filtered and tailored to our tastes and prevailing opinions. Digital technologies allow us to filter information and contacts in a very efficient way, thereby creating a risk that we end up exchanging information only with like-minded people. Besides, since humans’ bounded rationality cannot cope with the amount of information available on the Internet, we are confronted to problems of cognitive dissonance that we attempt to solve by ignoring opinions and arguments that differ too much from our own. Recent political events in the Arab world suggest that digital technologies support democratisation. But there is also a risk that these technologies might impoverish democratic debates and reduce exchanges amongst the stakeholders of a given political arena while radicalising their points of views. This threat is serious and needs to be investigated. To do so, this chapter suggests a methodology to evaluate that risk, as well as ways to mitigate it. Various methods have been used to analyse the polarisation of opinions in human societies, such as the ones analysing the traces left by Internet users in blogs or hypertext links. We will provide a review of these methods after having explained the main factor conducive to the creation of information closure.

¹ Cédric Gossart, Institut Mines-Télécom/Télécom Ecole de Management, Cedric.Gossart@telecom-em.eu, +33-160764669.

1. Introduction

A public problem can be defined as “the transformation of some social fact into a public issue and/or state intervention (...) if it has been constructed by the voluntary action of various operators” (Neveu 1999). All public problems follow a specific path, which can be divided into the four phases of the transformation of private difficulties into public problems, the flourishing of speeches describing prejudices and the formulation of claims, the institutionalisation or bureaucratisation of the public problem, and the publication and realisation of a programme of public action (Cefaï 1996).

This paper explores the role that information and communication technologies (ICTs) can play in the emergence of public problems. Indeed, if these technologies can support democratic claims, they can also hamper their expression. The transformation of a private claim into a public problem is a key step in the process leading to its integration in the political agenda.

Few studies have analysed the factors that can block this process of transformation (Pariser 2011). In order to better understand how ICTs can impact the emergence of public problems, we will first introduce the theoretical framework of this analysis. We will then examine the various ways by which ICTs can influence this emergence, and suggest ways to identify them by analysing the case of information cocoons.

2. Theoretical context

Human societies have always used some form of communication, even long before the development of language. Today, communicating involves the use of digital technologies, which are often equated with stronger and more transparent democracies. Indeed, they allow politicians to communicate in real time and to engage in more participatory policy-making. However, ICTs also have negative effects on democracies, which tend to be underestimated. Before examining

one of them, this next section underlines the key role of the first stage of the construction of public policies.

The emergence of public problems

Many sociologists of public problems such as (Emerson and Messinger 1977), (W. Felstiner et al. 1980 - 1981), (Dewey 1991), or (Cefaï 1996) have sought to understand the processes by which private issues are transformed into public problems (Chateauraynaud 2011). For example, the carrying capacity of public arenas as well as the “degree of dramatisation” reached to capture public attention have a strong influence on the selection of public problems (Hilgartner and Bosk 1988). In *L'État au concret*, J.G. Padioleau argued that a problem emerges when social actors perceive gaps between what could happen and what should happen. ICTs can indeed be used to widen this gap, e.g. by placing a greater emphasis on public problems, even if they are not a major concern for citizens.

The histories, trajectories, owners and places of emergence of public problems can be traced through the three stages of naming (identification of the public problem), Blaming (identification of who can be held responsible for it), and Claiming (what can be asked for compensation) (W. L. F. Felstiner et al. 1991). If one stage is missing or is too weak, the problem may not emerge as a public one. And some actors which are more powerful than others, such as the “moral entrepreneurs” (Becker 1997), have a stronger capacity to alter the development of these phases; starting with the first one during which public problems emerge. Nowadays, they are even more powerful if they master the art of communicating, which is making an increasing use of ICTs. Indeed, power consists in the capacity to match one’s own definition of a problem with the definition of what needs to be done (Etzioni 1976).

The media play a critical role in this process, since they can offer efficient channels of communication to name, blame, or claim. S. Cohen has underlined their influence in the transformation of mere rockers gangs’ fights into a major national security problem (Cohen 2002). Today, digital technologies are a very important tool to diffuse and manage information. This has led to a profusion of information that has forced end-users into using multiple filters to access (some of) it. Such a surfeit of information can be detrimental to

the emergence of public problems. Despite this important democratic issue, as underlined in the next section the role of digital technologies in the construction of public policies has seldom been analysed (Greffet 2011).

The construction of public policies

A public policy is a programme of action specific to one or to several public or governmental authorities (Thoenig 1985). It can also be seen as what governments do and do not do (Dye 1981). Understanding why some issues are not tackled by governments can help bring out the factors underlying the non emergence of public problems. This can be done by looking at all the phases of the construction of a public policy, which according to the sequential approach (Kübler and Maillard 2009) can be described by a series of successful steps presented in Figure 1.

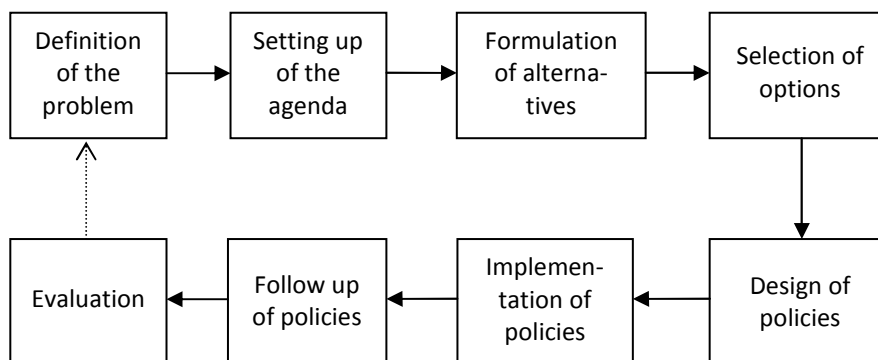


Fig. 1 The phases of a public policy (Adapted from (Howlett and Ramesh 1995), (Bardach 1996), (Anstead and Chadwick 2009))

Analysing the impact of ICTs on the construction of public policies can be done by examining each of the aforementioned phases. In this paper, we shall focus on the first one during which private issues are transformed into public problems. This transformation happens in “public arenas” (Hilgartner and Bosk 1988), where actors compete for the ownership of public problems following rules that

are specific to each arena. For example, dominant actors in the climate change arena need to use science-based arguments, preferably the ones that are summarised by the IPCC. Alternatively, some of them get around the scientific debate by spreading falsified scientific arguments through the media, such as Claude Allègre in France or Patrick Michaels in the US. The structure of the arena comprises social networks, which allow actors to have a routinised access to public institutions and to media, information agencies, lobbies, rules defined by institutions, and other human, technological or financial resources. Dominant actors are labelled “owners of public problems” (Gusfield 1980), which stresses that the ownership of a problem can change hands. The strength of these actors partly relies on tool boxes which are made of reserves of experiences and expressions capable of imposing their way of thinking (Cefaï 1996). It is paramount for these owners to have a privileged access to institutions and media (Hall et al. 1993). Being able to impose one’s own definition of a problem is also a key asset in a public arena, since it will strongly influence the policy that might be developed to address it. In a snowball effect, all the actors end up using your definition, not even remembering where it came from. ICTs can help impose such elements of language in public arenas. For example, in the 1970s the UK Ministry of Interior had used its monopoly on the collection and diffusion of criminal statistics to impose its definition of crime and to suppress all other interpretations of on-going urban riots (Hall et al. 1993).

But actors are also powerful because in addition to their definition of a public problem, their framing of an issue can also become dominant. The frame of a public problem is a shared social construction which incorporates a definition of the problem (Rhinard 2008), a proposal to solve it, and a justification to take action. If one of these steps is too weak or missing, it would weaken the position of an actor in a public arena. For example, J. Gusfield has shown how conservative actors in the USA could change the frame used to explain traffic accidents from “accident-fatality” to “accident-crime”; the (drunk) driver eventually being pointed as the main factor of traffic casualties (Gusfield 1980).

3. Attention: Information closure!

ICTs are part of the tools that empower the actors of a public arena, their advantage being that they echo the claims of small or poor groups and raise up their voice in the arena. These technologies can trigger competition among public information sources (Schlesinger and Tumbler 1994), which sometimes release contradictory information off the record in order to weaken their competitors, and to keep or shift the ownership of public problems. But the generalised use of these digital technologies also raises dangers for democracies, notably by reducing the diversity of opinions in society. If ICTs are widely used to communicate and diffuse information, they can also contribute to deprive us of new information or contacts, thereby deterring the emergence of a new public problem. Because of ICTs or the way they are used, new information or contacts are kept out of our reach, in a process of “information closure” (Pledel 2007). We explore in this section some of the key factors contributing to information closure.

The capture of attention

The attention of individuals and organisations are limited resources, which many actors are trying to exploit. Putting a topic on the political agenda requires capturing politicians’ attention, but also the public’s attention to get their support. But these attentions are subjected to intensive requests which tend to saturate them; and thus they might not be able to integrate new pieces of information or to be used to make new contacts in the arena. Public attention can be defined as a ‘rare input’ (Hilgartner and Bosk 1988), whose allocation is regulated by competition in a system of public arenas. Therefore, actors are competing in order to impose the publicity of their public problems at the expense of other public problems (Cefaï 1996). For example, B. Stiegler argues that merchants asphyxiate desire by capturing libidinous energy for marketing purposes (Stiegler 2008b). The philosopher calls ICTs “technologies of the mind” upon which immaterial capitalism thrives (Petit et al. 2008). He even perceives a serious threat to our civilisation (Stiegler 2008a), because these technologies are now targeting children. For

example, because of intensive video-gaming some of them can suffer from hyperactivity and attention deficit disorder (Boullier 2009).

Information closure

The profusion of information on the Internet can cause information overload (Edmunds and Morris 2000), which leads people to develop technological and psychological protection mechanisms. These mechanisms foster the creation of information cocoons (Sunstein 2007) that threaten deliberative democracies. Psychological defences seek to avoid cognitive dissonance, by which prevailing beliefs or opinions clash with newly perceived ones. We will for example limit our information searches to certain areas in which we feel comfortable, which can be done very easily by using digital filters such as RSS feeds or bookmarks. This behaviour causes problems for the construction of public policies because citizens need to be receptive to changes in their environment in order to trigger and support new policies. For example, ICTs enable us to build a “Daily Me”, our own personal newspaper tailored to our information needs of the day. As a New York Times columnist recently put it: “The danger is that this self-selected ‘news’ acts as a narcotic, lulling us into a self-confident stupor through which we will perceive in blacks and whites a world that typically unfolds in greys.”² This can result in locking us up in our individual spheres and lower our expectations and motivation to support the public unfolding of new issues that could become public problems. Some even argue that cognitive dissonance can explain why people get accustomed to risk: we do not want to see the risk, for example because it is too painful or costly to envisage its consequences, and thus we ignore it (Schoeneich and Busset-Henchoz 1998).

But technology can also help us tailor information and contacts to our needs, especially ICTs. C. Sunstein argues that this can lead to lock us in comfortable information cocoons and generate inert people (Sunstein 2007), which is the greatest danger for freedom in a democracy. In order to avoid that inertness, a diversity of viewpoint

² “The Daily Me”, N.D. Kristof, March 18, 2009, <http://www.nytimes.com/2009/03/19/opinion/19kristof.html>, accessed 14 November 2012.

must be maintained, which is not obvious with ICTs. For example, the author notices that in many blogs such diversity is actually missing. Along similar lines, I. Pleedel argues that “Technical and social environments (...) create norms and boundaries: the blogosphere is not homogeneous. Informational closure, especially cognitive and spatial closures, limits the deliberation” (Pleedel 2007). How can we identify such closures in order to suggest ways to avoid them?

4. Accounting for information closure

Information closure corresponds to the “reduction of the capacity of the agent to search, locate, sort out, filter, and select information that might be useful and relevant for him/her” (Pleedel 2007). It is dangerous to the extent that it either isolates individuals or hinders their capacity to communicate. The author distinguishes between spatial and cognitive information closures.

Within blogs for example, spatial closure occurs if Internet links rely upon one another within a closed set. It is not intentional, but rather emerges as a side effect of individual practices (e.g. adding a hyperlink in a blog to signal interesting content, moderating comments, providing proofs by posting a link), or because of interpersonal browsing (Cardon 2008).³ Thus, spatial closure emerges because of the very nature of digital technologies. For example, RSS feeds or bookmarks or tags are important sources of spatial closure, because once they are set the individual only accesses information that trickles down these pipelines. Within blogs, spatial closures can be measured by studying the following elements:

- The number of hypertext links (e.g. the ones posted in blogs),
- The range of blog rolls,
- The indexing of the blog in blog search engines,
- Self citation,
- Traffic rank,

³ Carried out by using the traces left by others.

- The number of links pointing to the blog (degree of openness).
 On the Internet, maps of website networks can be drawn in order to show the density of the links between the main websites of a given arena, such as the French political blogosphere in 2012 presented in Figure 2:⁴

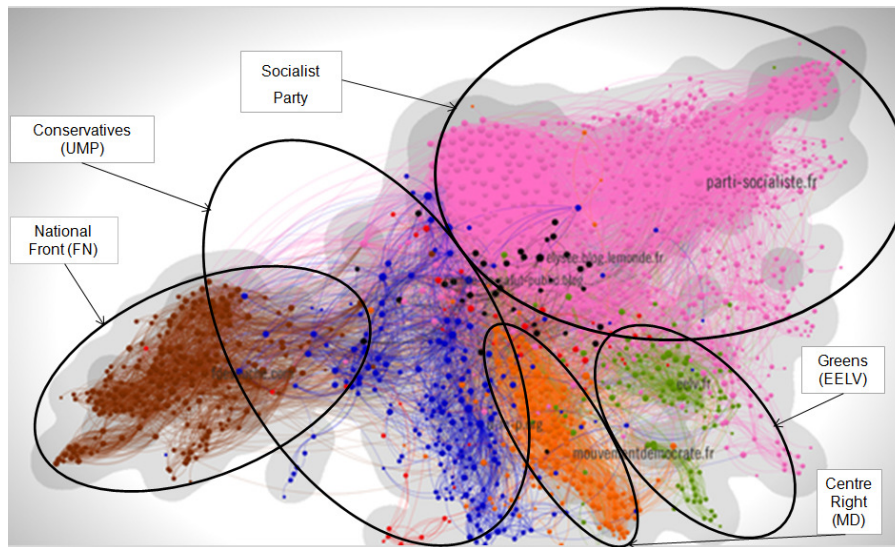


Fig. 2 The French politicosphere in 2012

⁴ Source: “La gauche domine le Web politique”, http://www.lemonde.fr/election-presidentielle-2012/article/2012/02/02/la-gauche-domine-le-web-politique_1636754_1471069.html, accessed 14 November 2012.

When looking at the blogosphere of militants, as evidenced in Figure 3, one can notice that it is even more polarised:⁵

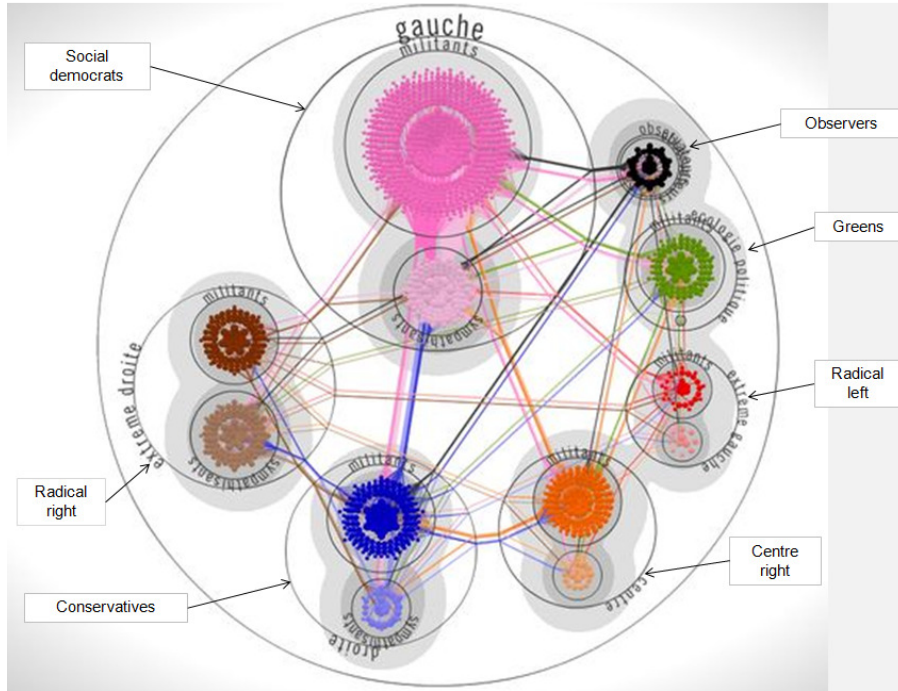


Fig. 3 The blogosphere of French political militants

⁵ Source: “La gauche domine le Web politique”, http://www.lemonde.fr/election-presidentielle-2012/article/2012/02/02/la-gauche-domine-le-web-politique_1636754_1471069.html, accessed 14 November 2012.

Similar maps exist for other countries. As shown in Figure 4, they also highlight a similar polarisation:

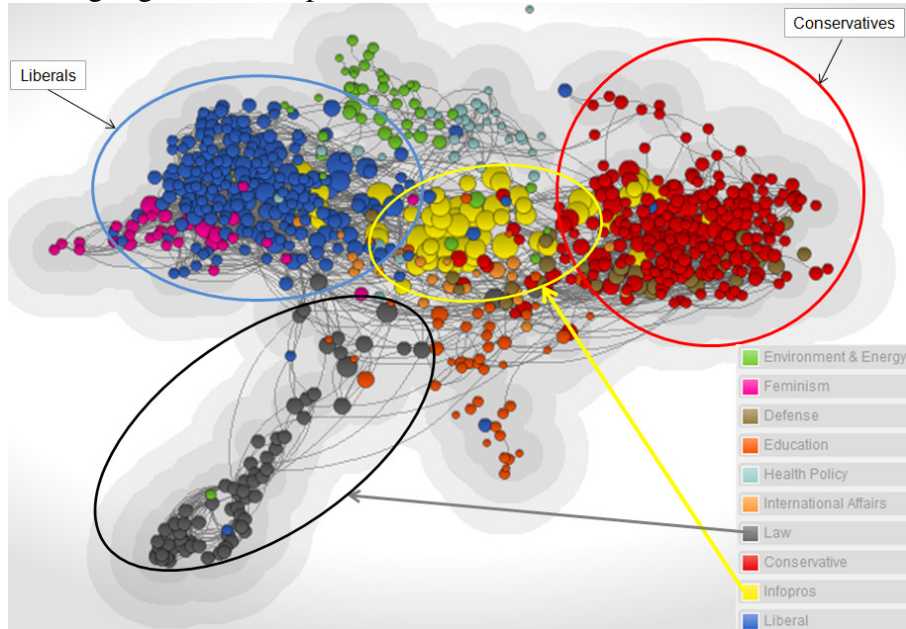


Fig. 4 The US politicosphere in 2009 (<http://politicsphere.net/map>, accessed 14 November 2012).

While spatial closure is more related to the technological characteristics of digital technologies, cognitive closure is more idiosyncratic. It could be compared with open/narrow-mindedness, and thus can be intentional or not. For example, depending on their level of intelligence some individuals will have a higher capacity to process information and to integrate new ones. In the case of blogs, since they revolve around a specific theme it is likely that the community will be quite homogeneous. Within these communities there are rules that guide people's information autonomy, such as agreed communication rules, trial period before joining the community based on the quality of information provided or posted on other blogs, sharing of contacts, etc. Besides, within a blog people seek to acquire credibility, which implies to quote others' posts and to avoid

contradiction. Studies confirm that some actors have a greater capacity to filter information up the blog ladder:

“The unequal distribution of readership, combined with internal norms and linking practices allows interesting news and opinions to rise to the “top” of the blogosphere, and thus to the attention of elite actors, whose understanding of politics may be changed by frames adopted from the blogosphere.” (Farrell and Drezner 2008)

Remaining within the boundaries of such closed communities is all the more comfortable since there are risks of exposing oneself to the outside world (comments, critics, insults, trolling,⁶ ...). This cognitive closure is more difficult to measure than the spatial one, since it requires more qualitative analyses. One can for example use the subjectivity index (e.g. by counting how many time “I” was employed) or the virulence index (number of contradicting comments and trolling), or analyse the marks of dissatisfaction or contradictory information and their impact on their author and other actors (e.g. did they change opinion following my post?).

According to I. Pledel, various reasons can explain why cognitive closure happens (Pledel 2007). At first, the “Common cause” argument underlines that because participants need to gain credibility within the group, they adapt their style, tone, or even civil identity to facilitate their integration to the group. Second, the “Fear of others’ judgement” can induce participants to support a point of view that will not clash with anybody’s feelings or opinions. Finally, a process of “Intentional filtering of navigation” can create information cocoons, except if the system leaves room for serendipity or if the person is curious and fearless enough to escape from his/her cocoon.

⁶ For a definition of Internet trolls, see [http://en.wikipedia.org/wiki/Troll %28Internet%29](http://en.wikipedia.org/wiki/Troll_%28Internet%29), accessed 14 November 2012.

5. Conclusion

In this article we have analysed the factors explaining why ICTs could be a threat to democracy. Intuitively, the opposite opinion prevails: didn't social networks, blogs and the Internet provide support to people fighting in the Arab revolutions, defending human rights in china,⁷ or representing suburban minorities in France (Zappi 2010)? We have argued that ICTs can also contribute to create information cocoons that impoverish the diversity of information and the people we can get in touch with. As C. Sunstein put it, a diversity of opinions and exchanges is paramount to the very survival of deliberative democracies (Sunstein 2007). If this diversity is too poor, there is a risk of 'balkanisation' within this society, as in the aftermath of the 2004 US elections (Adamic and Glance 2005). It is therefore essential to analyse those risks and this paper has highlighted methods to do so. Future studies could for example enable us to further explore the possible balkanisation of the politicosphere, and to anticipate it by developing policies to protect the democratic space it deserves to be.

6. References

- Adamic, L., & Glance, N. The political blogosphere and the 2004 U.S. election: divided they blog. In *Proceedings of the 3rd international workshop on Link discovery, Chicago, Illinois, 2005* (pp. 36-43): ACM. doi:citeulike-article-id:1244437.
- Anstead, N., & Chadwick, A. (2009). Parties, election campaigning, and the Internet: toward a comparative institutional approach. In A. Chadwick, & P. Howard (Eds.), *Routledge handbook of Internet politics* (pp. 56-71). London: Routledge.

⁷ See the blog of Han Han, introduced in "300 millions de Chinois et moi", <http://www.courrierinternational.com/article/2010/03/18/300-millions-de-chinois-et-moi>, accessed 14 November 2012.

- Bardach, E. (1996). *The eight step path of policy analysis: A handbook for practice*. Berkeley: Berkeley Academic Press.
- Becker, H. S. (1997). *Outsiders: Studies In The Sociology Of Deviance* (New ed.). New York: Free Press.
- Boullier, D. (2009). Les industries de l'attention : au-delà de la fidélisation et de l'opinion. *Réseaux*(154), 232-246.
- Cardon, D. (2008). Le design de la visibilité : un essai de typologie du web 2.0. <http://www.internetactu.net/2008/02/01/le-design-de-la-visibilite-un-essai-de-typologie-du-web-20>.
- Cefaï, D. (1996). La construction des problèmes publics. Définitions de situations dans des arènes publiques. *Réseaux*, 14(75), 43-66.
- Chateauraynaud, F. (2011). *Argumenter dans un champ de forces. Essai de balistique sociologique*. Paris: Pétra.
- Cohen, S. (2002). *Folk Devils and Moral Panics: The Creation of the Mods and Rockers* (3rd ed.). Abingdon: Routledge.
- Dewey, J. (1991). *The public and its problems*. Athens: Ohio University Press.
- Dye, T. R. (1981). *Understanding public policy*. New-Jersey: Prentice-Hall.
- Edmunds, A., & Morris, A. (2000). The problem of information overload in business organisations: a review of the literature. [doi: 10.1016/S0268-4012(99)00051-1]. *International Journal of Information Management*, 20(1), 17-28.
- Emerson, R. M., & Messinger, S. L. (1977). The Micro-Politics of Trouble. *Social Problems*, 25(2), 121-134.
- Etzioni, A. (1976). *Social Problems*. New Jersey: Prentice-Hall.
- Farrell, H., & Drezner, D. (2008). The power and politics of blogs. *Public Choice*, 134(1), 15-30, doi:10.1007/s11127-007-9198-1.
- Felstiner, W., Abel, R., & Sarat, A. (1980 - 1981). The Emergence and Transformation of Disputes: Naming, Blaming, Claiming. *Law & Society Review*, 15(3/4), 631-654, doi:citeulike-article-id:511899.
- Felstiner, W. L. F., Abel, R. L., & Sarat, A. (1991). L'émergence et la transformation des litiges : réaliser, reprocher, réclamer. *Politix*, 16, 41-54.

- Greffet, F. (2011). *Continuerlalutte.com : Les partis politiques sur le web*. Paris: Presses de Sciences Po.
- Gusfield, J. R. (1980). *The Culture of Public Problems: Drinking-Driving and the Symbolic Order*. Chicago: The University of Chicago Press.
- Hall, S., Critcher, C., Jefferson, T., Clarke, J. N., & Roberts, B. (1993). *Policing the Crisis: Mugging, the State and Law and Order*. London: Macmillan.
- Hilgartner, S., & Bosk, C. L. (1988). The Rise and Fall of Social Problems : A Public Arenas Model. *American Journal of Sociology*, 94(1), 53-78.
- Howlett, M., & Ramesh, M. (1995). *Studying public policy: Policy cycles and policy subsystems*. Oxford: Oxford University Press.
- Kübler, D., & Maillard, J. (2009). *Analyser les politiques publiques*. Grenoble: Presses universitaires de Grenoble.
- Neveu, E. (1999). L'approche constructiviste des problèmes publics. *Etudes de communication*, 22, 41-57.
- Pariser, E. (2011). *The Filter Bubble: What the Internet Is Hiding from You*. New-York: Penguin.
- Petit, P., Bontems, V., & Stiegler, B. (2008). *Economie de l'hypermatériel et psychopouvoir (entretiens avec Bernard Stiegler)*. Paris: Mille et une nuits.
- Pledel, I. (2007). Le blog face à la clôture informationnelle : la délibération au service de l'apprentissage. *Distances et savoirs*, 5(2), 275-288, doi:10.3166/ds.5.275-288.
- Rhinard, M. (2008). Le cadrage de la politique antiterroriste de l'UE. In C. e. al. (Ed.), *La construction des problèmes publics en Europe*. Strasbourg: Presses Universitaires de Strasbourg.
- Schlesinger, P., & Tumbler, H. (1994). *Reporting Crime, The Media Politics of Criminal Justice*. Oxford: Clarendon.
- Schoeneich, P., & Busset-Henchoz, M.-C. (1998). La dissonance cognitive : facteur explicatif de l'accoutumance au risque. *Revue de géographie alpine*, 53-62.
- Stiegler, B. (2008a). *La télécratie contre la démocratie : lettre ouverte aux représentants politiques*. Paris: Flammarion.

- Stiegler, B. (2008b). Le désir asphyxié, ou comment l'industrie culturelle détruit l'individu. *Manière de voir, La fabrique du conformisme*(96), 10-15.
- Sunstein, C. R. (2007). *Republic 2.0*. Princeton: Princeton University Press.
- Thoenig, J. C. (1985). *Traité de science politique: Les Politiques publiques* (Vol. vol. 4). Paris: PUF.
- Zappi, S. (2010). Un caillou dans la chaussure de la presse française : Retour sur l'expérience Bondy Blog. *Mouvements*, 1(61), 140-142.