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Does Web 3.0 come after Web 2.0? Deconstructing theoretical assumptions through practice

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Abstract

Current Internet research has been influenced by application developers and computer engineers who see the development of the Web as being divided into three different stages: Web 1.0, 2.0 and 3.0. This paper will argue that this understanding – although important when analysing the political economy of the Web – can have serious limitations when applied to everyday contexts and the lived experience of technologies. Drawing from the context of the Italian student movement, we show

that the division between Web 1.0, Web 2.0 and Web 3.0 is often deconstructed by activists' media practices. Therefore, we highlight the importance of developing an approach that – by focusing on practice – draws attention to the interplay between Web platforms rather than their transition. This approach, we believe, is essential to the understanding of the complex relationship between Web developments, human negotiations and everyday social contexts.

Keywords:

Web 2.0, Web 3.0, Anomalous Wave, alternative media, social movements, media practice, social media.

Introduction

In recent years, Internet and media scholars have been confronted with new developments of the Web, developments that have seen the growth of social networking sites, the extension of mobile technologies and an increase in user participation. The term Web 2.0, as proposed by Tim O'Reilly (2005), has been adopted in a variety of studies aiming at offering at times very critical perspectives on the political economy of Web developments (Fuchs, 2010; Jarrett, 2008; Terranova, 2004, 2004; Van Dijck and Nieborg, 2009; Zimmer, 2008). At present, business and

application developers are suggesting that there will be a new era of the Web, Web 3.0. This will be defined by a new online environment, which will integrate users' generated data to create new meaning. In contrast to Web 2.0, which is understood as being based on users' participation, Web 3.0 will be based on users' cooperation (Fuchs et al., 2010; Harris, 2008; Tasner, 2010; Watson, 2009). Within these debates, the overall assumption is that the Web is changing and that these changes impact on the economic and political organization of society, as well as on people's attitudes, beliefs and practices.

This article explores the somewhat scattered body of literature on Web developments and seeks to understand the logic of terms such as Web 2.0 and Web 3.0 by critically engaging with them. It will argue that although these concepts can be crucial when analysing the political economy of the Web, they present two main theoretical and methodological limitations for social research. In the first place, as some scholars have noticed (Everitt and Mills, 2009; Finnemann, 2010; Fuchs et al., 2010), they are entrenched with an evolutionary and temporary understanding of Web developments, which does not reflect processes of technological transformation and tends to give a linear progression to coexisting social and technical trends. The second problem – which has not yet been addressed in current debates and will be the main focus of this paper – is the problem of *practice*. Concepts of Web 2.0 and Web 3.0

often carry assumptions of users' practices: Web 2.0 is seen as enabling user participation whilst Web 3.0 is seen as triggering users' cooperation. In this paper we argue that these assumptions can have serious limitations when exploring the impact of Web developments on people's everyday experience. Drawing from multisided ethnographic research (Marcus, 1998) within the Italian Student Movement, this paper will show that the division between different stages of Web development is not reflected within the everyday practices of activists. In fact, it will be argued that activists not only use different platforms to mediate their messages but they often use Web 2.0 platforms in non-interactive ways and in ways that would be classified as Web 1.0. Consequently, it will be shown that the web uses of Italian activists challenge linear interpretations of Web developments, and shed light on how people critically negotiate with technological structures, and the political economy of the Web.

Web 2.0 between participation and exploitation

In 2004, at the first Web 2.0 Conference, Tim O'Reilly (2005) explained that the early 2000s had seen the development of a different type of Web, Web 2.0 that harnesses 'the collective intelligence of crowds to create value' (O'Reilly, 2005: para. 25). The new Web, in contrast to Web 1.0, is no longer based on a network of hypertexts, but is defined by a new 'architecture of participation' (O'Reilly, 2005: para. 24), which

facilitates the co-production of information, social networking and rich user experiences. In the year following its introduction, the term Web 2.0 became extremely popular in a wide variety of contexts, to the point that at the end of 2005 it counted 9.5 million citations on Google (O'Reilly, 2005: para. 3). Also within academic circles the concept has become extremely pervasive. In her analysis of theoretical approaches, Song suggested that 'Web 2.0 marks a broader cultural moment' (2010: 270). It certainly marked the growth of significant debates within academic disciplines on the importance of analysing the Internet as a technology in constant transformation and defined by different phases of development.

Although scholars concur on the importance of embracing the concept of Web 2.0 to address the Web developments of the last years, the Web 2.0 literature is defined by a variety of perspectives on how best to understand these technological transformations. The problem scholars are confronted with is represented by the fact that Web 2.0 technologies are defined by a double-sided nature, which Zimmer (2008) called the 'Faustian bargain of Search 2.0' and that was further developed by Langlois et al. (2009) as the 'Web 2.0 Faustian trade-off'. On the one hand, Web 2.0 platforms such as Flickr, YouTube, Twitter, MySpace and Facebook allow users to become so-called prosumers (Bruns, 2008; Toffler, 1980). Hence, some scholars have argued that the interactive features of Web 2.0 technologies offer unprecedented democratic

possibilities for individual engagement and empowerment (Castells, 2007, 2009; Gillmor, 2006; Reynolds, 2006; Shirky, 2008; Tapscott and Williams, 2006).

On the other hand, as Zimmer (2008) explained, Web 2.0 technologies also enable an increased flow of personal information across networks, the emergence of powerful tools for peer surveillance, the exploitation of free labour for commercial gain and an increased corporatization of online social spaces and outputs (Zimmer, 2008: 1). Therefore, many scholars have argued that, far from being democratic, the new online economy is linked to issues of neo-liberal surveillance, corporate control and the exploitation of users' immaterial labour (Andrejevic, 2005; Everitt and Mills, 2009; Terranova, 2004; Van Dijck and Nieborg, 2009). It is for this reason that that Sandoval and Fuchs (2010) relied on Marcuse to argue that the participatory culture of the Web is today nothing more than 'repressive tolerance' (Sandoval and Fuchs, 2010: 144–5).

All these discussions on the capitalist and exploitative character of Web 2.0 technologies are of extreme importance, because they critically address the ideological and business rhetoric embedded in the concept of Web 2.0 as proposed by O'Reilly and others. Van Dijck and Nieborg (2009), for instance, brilliantly deconstructed Web 2.0 manifestos such as *Wikinomics* (Tapscott and Williams, 2006), showing how business gurus endorse a notion of public collectivism that functions entirely inside

commodity culture.

However, drawing from Langlois et al. (2009), we believe that often the rich cultural experiences witnessed on Web platforms cannot be ‘simply dismissed as yet another form of corporate control over culture, or Orwellian dataveillant machine’ (Langlois et al., 2009: 1). In fact, as Jenkins (2006) remarked, while it is undeniable that corporations make profits, hiding behind the ideological rhetoric of empowerment, it is also true that thanks to the multiple possibilities offered by Web 2.0 platforms, individuals have a new decoding power. Furthermore, as Castells (2007, 2009) argued, we must appreciate that the interactive and participatory features of Web 2.0 technologies have enabled a new form of mass communication of the self, which has given rise to new expressions of insurgent politics. Therefore, we believe that it is important to understand the participatory potential of Web 2.0 technologies, whilst at the same time - as Cammaerts (2008) does – take into account issues of commoditization, state censorship and market appropriation.

However, while we share the emphasis on Web 2.0’s capacity to strengthen networked protests, and we agree with Cammaerts (2008) about the necessity to assess critically the challenges to political participation on Web 2.0, in this paper we urge scholars to take a step back. Thus, we question whether the interactive and participative possibilities – which, for most of the literature, characterize Web 2.0

technologies – will somehow be *necessarily* appropriated by users, and in particular by networked movements and activists.

Beyond Web 2.0? The rise of Web 3.0 and the Semantic Web

In the last few years a new concept has started to emerge amongst business Web developers and beyond: the notion of Web 3.0. Ideas on the current developments of the Web are still blurred and confused, yet contemporary business models stress the importance of moving beyond Web 2.0 and finding new ways to manage, organize and create meaning from the vast amount of user-generated data (Funk, 2008; Harris, 2008; Tasner, 2010; Watson, 2009).

The concept of Web 3.0, as it is imagined by business models and Web developers, is often associated with the idea of the *Semantic Web*. The idea was first coined in 1999 by Tim Berners-Lee, the creator of the World Wide Web, who foresaw the possibility of enabling machines to ‘talk to one another’ and to understand and create meaning from semantic data (Berners-Lee in Floridi, 2009: 27). Floridi (2009) contended that the Semantic Web as portrayed by Tim Berners-Lee and the people of the W3C (World Wide Web Consortium) is not feasible either technically (at least not yet) or socially, but he argues that the Web is developing well beyond the interactive processes of Web 2.0 in a variety of different ways.

One such transformation is defined by the fact that businesses and computer engineers are developing increasingly small and mobile applications that harness the cooperation of crowds and work as databases organising the data on the Web (Harris, 2008; Watson, 2009). The model shows some similarities to the Wikipedia model, which unlike Google - that works by matching words - contextualizes concepts, creating new information (Harris, 2008: 29–31). One example of this is provided by *salesforce.com*, a cloud service for companies that works as a database, which integrates different data (e.g. the individual profiling of customers with the company information or the latest statistics) to create new data that strengthens marketing strategies (Harris, 2008: 29–31). A very different example of Web 3.0 technology is *quora.com*. This is a privately owned searchable question and answer platform of general knowledge, which harnesses the collaboration of users by enabling them to update their questions and answers live via social networking sites. As these two different examples of Web 3.0 technologies show, these new applications and platforms offer users the possibility to cooperate in the creation of Web data, whilst at the same time searching the Web in an intelligent way. Therefore, as many have noticed (Funk, 2008; Harris, 2008; Tasner, 2010; Watson, 2009), if ‘user participation’ was the key word within business models of Web 2.0, ‘users’ cooperation’ has become the new buzz word that identifies Web 3.0 technologies.

The understanding of Web 3.0 as a site of user cooperation can also be found in the work of Fuchs (2008). For him Web 3.0 is created by 'networked digital technologies that support human cooperation' (2008: 127). This focus on cooperation can be problematic. In fact, if we consider contemporary business models and objectives that are attached to the development of new Web 3.0 applications, we cannot overlook the fact that in stressing cooperation these applications propose to manage, organize and create meaning from user-generated data in such a way that it maximizes the tracing of digital identities (Harris, 2008; Watson, 2009) and behavioural advertising (Tasner, 2010). In this framework, we believe that it is essential to start thinking about the larger political implications that such Web developments would bring about, especially in terms of the issues of privacy, surveillance and control. Research in this area has become imperative.

In this paper, however, our focus is not on foreseeing these implications but rather questioning whether concepts such as Web 2.0 and Web 3.0, which are entrenched with business rhetoric, can be appropriate theoretical and methodological tools for social research. Our understanding is that such concepts can be crucial to the analyses of the political economy of the Web, because they enable scholars to assess critically the business rhetoric embedded in understandings of Web developments. As we have seen above, the critical Web 2.0 literature that emerged as a response to Tim

O'Reilly's (2005) conceptualization of Web 2.0, has been crucial in unmasking the capital exploitation that was intrinsic to the discourse of a new 'architecture of participation'. In similar ways, new literature and research should thoroughly engage with notions of Web 3.0, with the aim of exposing the logic of neo-liberal surveillance embedded in these new Web developments and critically assessing ideas of 'cooperation'. Although the importance of such concepts in the analysis of the political economy cannot be dismissed, we believe that scholars must take a step back and critically reflect on the hidden theoretical and methodological limitations of such terms.

Web 2.0, Web 3.0 and the problem of practice

One of the key problems with the terms Web 1.0, Web 2.0 and Web 3.0 is represented by the fact that, as Finnemann (2010) argued, they do not reflect the actual technological transformation of the Web, and, as Everitt and Mills (2009) showed, such concepts apply a version number and a consequent notion of progress 'to cultural shifts that speak more of a complex alliance of social, technological and commercial aims' (2009: 765). The problem is that linear and evolutionary understandings of Web developments imply that one form of the Web can replace another. However, as Fuchs et al. (2010) argued, different Web platforms do not replace one another. Rather, the

Web needs to be understood as an *integrated socio-technical system*, in which different Web applications and stages coexist.

Fuchs et al. (2010) argued for the importance of abandoning evolutionary and linear models of Web developments, yet within their work they contend that these concepts are important because they enable us to appreciate how different Web technologies facilitate different communication processes. In fact, the scholars contend that Web 1.0 technologies enable *cognitive processes of communication*, which are made possible through the individual's relationship with the hypertext. Web 2.0 technologies create the basis for the development of *communicative processes*, which are guaranteed by interactive platforms (e.g. social media), and Web 3.0 technologies facilitate *cooperative processes* that are integrative in the construction of new information and meaning.

The understanding of the Web as an integrated socio-technical system, we believe, is crucial to contemporary critical theory of the Internet, because it challenges linear understandings of evolutionary progress. However, in understanding Web developments we distance ourselves from Fuchs et al.'s (2010) and question whether the fact that Web technologies *can* enable different communication processes (cognition, participation, cooperation), implies that these communication processes become the key definers of Web uses.

This question is particularly important for current research. In fact we believe that although the pitfalls of embracing evolutionary models of Web developments have been recognized by scholars (Everitt and Mills, 2009; Finnemann, 2010; Fuchs et al., 2010), another central problem embedded in these concepts has yet to be addressed. This is the problem of *practice*. Concepts such as Web 1.0, Web 2.0 and Web 3.0 often deploy un-problematized assumptions on users' practices. Yet, in this paper we ask: what does an analysis of users' practices tell us about these concepts as analytical and methodological models?

Deconstructing theoretical assumptions through practice

Since the early developments of new information and communication technologies, social theorists - and especially those departing from an ethnographic and qualitative perspective - have focused on the concept of *practice* in order to analyse how people creatively negotiate with and appropriate the structures of technologies (De Sanctis and Poole, 1994; Grint and Woolgar, 1995). Particularly significant in this regard is the contribution of those scholars who studied the workplace and organisations, and explored how everyday working life is structured around multiple and complex human processes of interaction and negotiation with technologies (Suchman, et al. 1999; Button, 1993; Orlikowski, 1992). The focus *on practice* enabled scholars to shed light

on the social impacts of technologies, by highlighting the dynamic relationship between technological structures and social use.

In recent years, within media studies, much attention has been paid to the importance of developing a new paradigm of research that focuses on the understanding of media *as practice* (Couldry, 2004; Postill and Brauchler, Eds., 2010). Whilst there is who contends that practice theory in the analysis of media is particularly important because it discards holistic assumptions on structure, culture or order (Hobart, 2010), others argue that the richness of a practice approach lies in its ability to look at the negotiations with structures and power (Postill, 2010; Bird, 2010). In the understanding of Web developments, therefore, we believe that a focus on practice theory enables scholars not only to explore how structural models are internalised - as Bourdieu (1977) and Giddens (1984) pointed out - but also to consider how actors interact and shape technologies in significant ways. In this regard, we draw heavily on the work of Orlikowski (2000), and believe that in the understanding of technological developments, it is important to complement the notion of 'embodied structure' with the notion of 'emergent structure', and the one of 'appropriation' with that of 'enactment' (Orlikowski, 2000: 405). In fact, as Orlikowski has argued (2000), scholars have much to gain if rather than starting with the 'technology' and examining how actors appropriate its embodied structures, they start with 'human action' and

examine how people enact emergent structures through recurrent interaction with the technology at hand (2000: 407). This approach is particularly important in the analysis of Web developments, this is because as Orlikowski (2000) has pointed out:

“Focusing attention on how structures are constituted and reconstituted in recurrent social practices acknowledges that while users can and do use technologies as they were designed, they also can and do circumvent inscribed ways of using the technologies [...] (Orlikowski, 2000: 407)”

Riding ‘the Wave’: exploring the Italian Student Movement

in order to reflect on how people critically negotiate with technological structures, in this paper we draw on two different multi-sited ethnographic projects (Marcus, 1998), which studied the Web practices of activists within the Italian student movement. In 2008, Maria Stella Gelmini, the Education Minister of the Berlusconi Government, put forward a controversial decree aimed at cutting state funds for the education sector. By October 2008, at national level a large student movement emerged that was not only defined by the participation of students (high school and university students), but also by the participation of young activists and precarious workers (Mattoni, 2008). The movement was known as *Onda Anomala* (Anomalous Wave) or simply *L’Onda* (The

Wave). The two different multi-sited ethnographic projects were undertaken during and after the *Onda* movement.

The *first project* was carried out between 2008 and 2009, and involved a five-month period of participant observation (October 2008 to February 2009) and 17 individual semi-structured interviews, amongst the students of the 'Permanent Assembly of the Anomalous Wave Movement' collective, at the Faculty of Political Science of the University of Bologna. The city of Bologna was chosen for its pivotal role in the student struggles, a role that this city has repeatedly played in student protests (Tarrow and Maddaloni, 1990). In addition to that, five group interviews (N = 21) were also carried out with activists of the following student groups: 'Collettivo 133', University of Trieste; 'Autoconvocati', University of Udine; 'Permanent Assembly of the Liberal Arts College', University of Siena; 'AutArt' collective, Brera Art Academy (Milan); and the 'Onda Anomala Padova', University of Padova. The groups were selected due to the important role played by the universities in the protest (Milan, Padova, Siena), but more peripheral realities were also taken into account (Trieste, Udine). Participant observation and qualitative interviews were also enriched with the qualitative content analysis of both online and offline documents produced by activists.

The *second project* was a year-long ethnographic research with a political group

based in Milan – the *Corsari*, in English *Pirates* – which was born during the *Onda* Movement. The *Corsari* was created in July 2008, and brought together different student groups (*collettivi studenteschi*) that belonged to the *Onda* movement with activists who belonged to those Milanese social centres (especially Bulk, Orso, Panetteria Okkupata, etc.) that had been closed down by the right-wing Milanese city administration. In January 2011, the *Corsari* – together with the Rete degli Studenti (a secondary school activist network) and other political collectives – opened a new social centre, Zona Autonoma Milano (ZAM – Autonomous Zone Milan). The research amongst the *Corsari*/ZAM took place between July 2010 and July 2011, and combined four periods of two weeks' fieldwork that took place over the course of one year with 12 months of online ethnography. The offline ethnography consisted of attending meetings, events and parties, following key informants in their everyday life and taking part in actions and demonstrations. The one-year online ethnography instead consisted of daily participant observation on their social networking sites and mailing lists, combined with a qualitative analysis of the texts produced. The ethnographic research was also enriched by 25 one-hour-long semi-structured interviews with key members of the group and other networked organizations (e.g. 'Autistici Inventati', 'Rete Studenti', Partigiani in ogni Quartiere; Universi; Milano Movidà, Zona Autonoma Milano, etc.). All the interviews focused on a *life history* approach, which

analysed the political biography of the informants as well as narratives of technological adaptation. The aim of the project amongst the *Corsari* was to gain an in-depth and thick understanding of the critical Web practices and the human experience of technologies, by looking at the life of a political group that was born within the Onda Movement and has today become a key player in the antagonist scene in Milan.

The Italian student movement and its critical Web practices

The ethnographic context of the Italian student movement is particularly interesting for the social analysis of Web practices for two main reasons. In a first place because activists combine a variety of Web 1.0 and 2.0 platforms (e.g. traditional websites such as <http://www.uniriot.org/uniriotII/index.php> – ‘the network of rebellious faculties’; the use of mailing lists, social networking sites and blogs), and in doing so though their everyday Web practices complicate linear understandings of Web development. In a second place, because within this social context activists use the Web critically.

During our research it emerged that, whilst activists recognized the participatory potential of Web 2.0 technologies for the mobilization of political action, they also believed that political ‘participation’ on Web 2.0 platforms, (e.g. the posting of information and the engagement in online political discussion) needed to be controlled and limited in order to counteract the risks of information leaking and data

mining involved in the use of Web 2.0 platforms.

Because of this critical understanding of the web activists combined the use of corporate Web platforms with the use of 'autonomous' ones, provided by *Autistici Inventati*. This is a tech-collective that was born in 2001 with the aim of developing a strategy of Internet resistance against the appropriation of users' data. Hosting more than 5000 email addresses, around 500 websites and over 700 mailing lists, A/I today, is committed to protecting the online autonomy, anonymity and privacy of Italian activists who share left-wing and progressive ideologies. In order to do so, A/I provides email addresses and blogs to activists, without imputing personal data, and providing them with a certain degree of autonomy from the commercial and governmental tracing of digital identities. Although activists were aware of the pivotal importance of defending their Internet autonomy, they also feared that the exclusive use of autonomous networks will confine their alternative messages to 'online ghettos', for this reason they strategically combined the use of A/I platforms with the sharing of communication within the online spaces of social media, in particular Facebook and YouTube. However, as we shall see later, they used this platforms critically by limiting the content posted and controlling the information disclosed.

The critical use of the Web by Italian activists reveals an important complexity of Web practices that can inform further research. In fact our research reveals that Web practices are embedded in a tension between *strategies* and *tactics* (De Certau, 1980, 1984), and that understanding such a tension is of pivotal importance in order to challenge contemporary generalised assumptions on the relationship between web developments and users practices.

In his seminal study on the understanding of everyday social practices, De Certau (1980, 1984) argues that institutions and power structures usually have a spatial dimension in which they operate and therefore that their practices can be understood as *strategies* that shape specific social environments. Hence for De Certau (1980) *strategies* have a spatial dimension and reflect the relationship between power, theory and practice (1980: 7). However, De Certau believes that the practices of power (*strategies*) need to be differentiated from the practices of the 'weak'. This latter, instead, need to be understood as *tactics*. *Tactics*, in contrast to *strategies* reflect the relationship between 'negotiation, practice and experimentation, they have a temporal dimension and they are connected to the idea of cultural adaptation'. (1980:7). This is because, for De Certau, the weak must continuously turn to their own ends forces that are alien to them' (1984: 11).

In a recent article Manovich (2009) has adapted De Certau's theory to the

analysis of Web 2.0 technologies and has argued that business strategies have incorporated people's tactics, by developing business models that strategically exploit users' ability to customise Web content. Our research shows that if, within the Web 2.0 environment, business models are strategically incorporating the tactics of Web users, Web users are appropriating the communication strategies of business models to develop their own communication tactics. Examples of this can be found in the choice by Italian activists of opening accounts on corporate social media platforms such as Facebook and YouTube despite being critical of these Web spaces or – as we shall see later in an interview with an organiser of A/I – another example can be found in current discussions amongst activists on how to appropriate contemporary business models for their own cause.

However, despite activists are developing communication strategies that follow linear understanding of technological developments (e.g. Web 2.0; Web 3.0 etc.), and they seem to believe in the insurgent potential of the Web 2.0 (Castells, 2009), they use these platforms tactically, by actively negotiating with the structural constraints of technologies. This tactical use of Web platforms, we argue, challenges linear understandings of Web developments, and sheds light on the complexities involved in people's everyday interaction with technological structures.

The use of Facebook and blogs as one-sided platforms

Throughout our different research projects, it emerged that within the Italian student movement, Facebook, one of the most characteristic examples of Web 2.0 technologies (Fuchs, 2009), is regularly used as a one-sided platform. Often Facebook is used by students as just another online space to post their information, not as a site for discussion, sharing and participation. In the words of Alessandro, part of the 'Autoconvocati' collective from the University of Udine: 'Our use [of Facebook] is limited only to put information. We never proposed any discussion and I don't think that we'll ever use it in that way.' In his interview, Alessandro explained that limiting online participation and discussion was particularly important for them in order to safeguard activists' privacy and autonomy.

This unilaterality present in the use of Facebook found its most interesting expression at the time of the *Anomalous Wave* within the University of Trieste, when students used Facebook simply as a way to count the number of people who joined their events and actions or as a space within which to paste the list of upcoming events, in a similar way to old HTML Internet sites. As Giorgio, from the University of Trieste, clarified, 'Facebook was used essentially to count us (...) to count how many people said yes to initiatives and then see who was actually participating and then make a comparison.'

The use of Web 2.0 platforms in non-interactive ways was not limited to Facebook, but also to the way in which activists employed their A/I blogs. Within the interviews and informal conversations many referred to their blogs as 'boards', 'containers', 'windows' and 'posters', not as instruments of debate. Thus, it is not surprising that most of their blogs appear as a long list of posts without comments in a one-way communication flow like the one that characterized the 'old-fashioned' Internet sites of the Web 1.0 era. As Pamela, a student who is a participant in the AutArt collective of the Brera Art Academy (Milan), pointed out:

Our blog was just a container of all the actions that have been taken.
We are aware that the blog is not an exchange tool, in the sense that most of the times it becomes the expression of something I have to say, but not an instrument of dialogue (...)

Pamela has been an active actor in the movement, especially online, heavily posting on several platforms including the blog of the collective. Nevertheless, she has never used or conceived the blog as a means for creating dialogue.

Earlier approaches to the study of blogs have repeatedly emphasized that blogs represent the conversational backbone of the Web (Gillmor, 2004). Kahn and Kellner

(2004: 91) argued that on the one side, 'blogs are partly successful because they are relatively easy to create and maintain' and on the other side that 'blogs make the idea of a dynamic network of on-going debate, dialogue and commentary central' (Kahn and Kellner, 2004: 91).

Our research shows that the choice of activists to create a blog is often motivated by the fact that blogs are cheaper and easier to manage, as Kahn and Kellner (2004) pointed out, but only occasionally did activists mention that their choice to create a blog was motivated by a will to use a more dynamic Web tool that facilitated dialogue and debate. As shown above, within the Anomalous Wave movement blogs appear to be no more about conversation than Web 1.0 (one-to-many) Internet sites. All these findings relate well to Lovink's (2008) latest work and his argument that – with the exception of some fortunate A-listers' blogs – overall most blogging sites either have no comments or have closed down the possibility to respond.

Our research suggests that there are often social and political reasons why people choose to limit the interactive features of Web 2.0 technologies, which need to be investigated. In the case of the Italian student movement these reasons need to be found in activists' concern with privacy. Their concern needs to be understood with reference not only to activists' awareness of the commoditization of their online

activities, but also to the fact that at present, in Italy, left-wing activist groups and social movements are constantly targeted with court actions due to the politics of zero tolerance and repression put forward by Berlusconi's Government.

Mailing lists as 'already 2.0' technologies

If social networking sites and blogs are often used as uni-directional platforms by the Italian student movement, a completely different scenario appears if we move our analysis from the use of blogs and social networking sites to the use of mailing lists, which are usually considered a tool of Web 1.0. Within the student movement, mailing lists emerged as the privileged sites for discussion and debate used by the students. As Elisabetta, from the University of Udine, explained, even when a particular document was posted simultaneously on the blog and on the mailing lists, the preferential tool for the discussion was still the list. While blogs have mainly been used as unidirectional boards and displays for the outside world, mailing lists have been the fuel for the internal communication of the Wave.

Therefore, within the context of the student movement in Italy, this 'old' Internet application plays a more central role than social networking sites in the creation of discussions and organisation of collective action. This point is made brilliantly clear by the following quote taken from an interview with Pamela:

Actually this Web 2.0 inside a movement of this kind that uses the mailing list not as a newsletter but as a political tool, the mailing list was already 2.0 ... 2.0 has not introduced anything new anyway into groups like ours. The mailing list is already a social network, a point of reference; it works as production and sharing of contents. Of course we know that things are changing and that people move to huge social networks, like Facebook or other, but the mailing list is still a fundamental tool.

Fuchs (2008) already recognized the participatory nature of mailing lists to the point that he defined them as 'Web 2.0 asynchronous technologies'. When one brings together our analysis of activists' practices – and considers the way in which the concepts of Web 1.0 and 2.0 become confused within everyday Web uses – with Fuchs's (2008, 2009, 2010) reflection on asynchronous Web applications and technologies, the question seems to be more pressing than ever: are Web 1.0, Web 2.0 and Web 3.0 useful theoretical tools? As argued above, in using Web 1.0, 2.0 and 3.0 as theoretical models scholars must realize that these concepts can be very helpful in uncovering the business models and changing political economy of the Web. Yet not

only can they prevent us from appreciating the interplay between different phases of the Web in an everyday context, but most importantly – as the case of the Italian movement has shown – they can prevent scholars from appreciating how the Web is used ‘tactically’. Our research, therefore, shows that scholars should not take the technological affordances of Web technologies for granted – in particular of Web 2.0 (more interactivity and increased participation) and Web 3.0 (more collaboration) – but should carefully consider the way in which users understand, appropriate and experience the technological developments of the Web.

New Web developments and resistance

This final point is especially important when approaching questions on the new developments of the Web and on the advent of Web 3.0 technologies. As it has emerged within our research, people are engaging with the current transformations affecting the Web, in a variety of different ways. They are not only finding ways to understand current Web developments and to foresee their implications, but they are also engaged in imagining and continuously developing ways to resist them. These resistance practices are part of the on-going struggle against the ‘interactive cyberspectacle’ (Best and Kellner, 1999).

One pressing issue that emerged during fieldwork is the problem of digital

identity. Activists recognized that new Web applications and platforms - which are often reliant on mobile technologies, and cloud services, as well as on a cultural politics and that exhort users to openly share information across Web platforms and collaborate in the construction of new content - make the tracing of digital identities even more effective. This final point is made clear by Blicero, from the Autistici/Inventati collective, when during an interview he explained:

It is evident that there is no going back, now the importance is to understand the implication of these transformations, and to seriously start reflecting on the issue of identity. Where does your personal/private identity begin? And where does the public one start? (...)

At the moment we should be starting to imagine how to create an infrastructure, similar to the new corporate models, but that is free from corporate power and challenges them. One idea could be to develop a service such as open ID, which today enables Web users to create a digital identity and surf the Web with it. But Open ID requires your personal details. My idea is to create a service that gives a digital identity to people, without requiring their personal details. So when you surf the Web they

will not be able to identify you, and your Web practices will no longer linked to your personal/computer ID. (...)

You know we are at a difficult point, we know more or less what will happen, and we can predict the next stages of the Web, but we don't really know yet what we are going to make of it, and what type of resources we'll have available (...)

As it emerges from Blicero's interview, activists are trying to find ways to resist to technological structures, and to develop Web tactics that challenge ideas of uncritical 'collaboration' promoted by business models and that are informed by critical questions on users practices. In addition, Blicero talks about the importance of developing a new infrastructure, which copies business models, whilst at the same time enables activist to limit processes of online surveillance and the tracing of digital identities. Looking at these practices of resistance and creation, is of central importance in order to appreciate what Orlikowski (2000) calls 'emergent structures' and to recognise that users circumvent inscribed ways of using technologies "either ignoring certain properties of the technology, working around them or inventing new ones that may go beyond or even contradict them" (2000: 407). Understanding the relationship between users tactics and strategies, and looking at the ways in which

they interact with technological structures to create new ones that often challenge business models, we believe, is of crucial importance for the analysis of Web developments.

Conclusion

In conclusion, the critical Web 2.0 literature that emerged in the last years has been of fundamental importance in highlighting the political economy and the neo-liberal discourses of new Web applications, and in pointing out that Web 2.0 is a cultural construct profoundly influenced by business rhetoric (Everitt and Mills, 2009; Fisher, 2010; Fuchs, 2010; Sandoval and Fuchs, 2010; van Dijck and Nieborg, 2009; Zimmer, 2008).

This paper was intended as a contribution to the on-going critical debate on Web developments. While we highlight the business rhetoric that often blankets the ideas related to Web developments, we also question whether concepts such as Web 1.0, 2.0 and 3.0 can be viable and successful theoretical models for social analysis. Our aim has been on the one hand to urge scholars to take a step back and question the appropriateness of their theoretical models and on the other hand to stimulate the need to investigate users' media practices as a way to inform the development of these models.

The example of the Italian student movement has proven to be of central importance in highlighting how people critically use the Web, and how they negotiate with its structures and political economy. With their critical awareness of capitalist exploitation on Web 2.0, and their Web tactics directed towards the protection of activists' political autonomy and anonymity, Italian activists provide us with important insights on the social complexity of everyday Web practices. In fact although activists develop their communication *strategies* on the basis of models of Web 1.0, 2.0 and 3.0 and benefit from technological advances (e.g. they open websites, social media accounts, blogs etc.), their everyday uses of these platforms do not reflect the communication processes (cognition, participation, cooperation) that are usually associated to Web developments (e.g. they use social media in non-interactive, unidirectional ways), because they are informed by tactics of resistance and adaptation to technological structures. Looking at the difference between Web strategies and Web tactics, at their tension and relationship, is of central importance for future research as it allows scholars to deconstruct generalised understandings on the social uses of technologies.

Although the focus on the critical Web practices of Italian activists can shed some light on the complexities of people's everyday interaction with the Web, and on the tension between strategies and tactics, there is a main limitation of our research

that needs to be addressed. In fact, it must be acknowledged, that the Web tactics of Italian activists are grounded on a political critique against neoliberalism, and hence are the product of a politically informed social discourse which critically assesses the relationship between Web platforms and corporate and political power. Such political discourse is not common in everyday non-political contexts. Consequently, following De Certeau's (1980s) analysis of everyday practices in consumer culture, we believe that it would be important for scholars to explore the complex tension between Web strategies and tactics within those contexts that, contrary to our own, are not informed by political critique. Such an approach may shed some light on the relationship between business models, technologies and every Web uses, and critically inform current research on the transformations affecting the Web.

We think that our ethnography shows that there is a need for more fine-tuned analysis of online technologies' adoption and resistance, especially in the field of digital activism. In the realm of conventional politics, scholars have argued that the possibilities provided by Web 2.0 technologies have not been fully deployed by most actors and that in many cases we can speak more of a hybrid logic instead of a full Web 2.0 appropriation (Nielsen, 2011; Sorice, 2011; Tuñez & Sixto, 2011). In the same vein, in this paper we have shown that the opportunities offered by new online environments are differently adopted and resisted by activists. Like many politicians

who simply create and own a Facebook account but not use it to engage in any sort of dialogue, activists do not want or need to use Web 2.0 platforms in their fullness of possibilities.

Therefore, our research demonstrates the necessity, in particular within future investigations regarding digital activism, to look more at the co-existence and co-evolution of old and new online technologies and not to take for granted that activists will 'normally' or 'automatically' adopt them in their fullness of networking potential. As our research and others (Nielsen, 2011) have shown '1.0 applications' such as e-mails still play a decisive role in movements' communicative dynamics and are sometimes more deeply integrated into mobilising practices than 2.0 tools. Even so, they are often not considered because there is a tendency in overemphasising the role of emerging or recently emerged online tools (for instance social media). In the light of our findings we thus recommend future research on digital activism and Web practices, to employ an holistic and ethnographic focus and to explore the often complex tension between Web strategies and Web tactics, which often defines people's engagement with the Web. To a certain extent we see these recommendations for future research as an 'antidote' to the techno-deterministic assumptions that define much of contemporary research on digital practice.

In conclusion, while we certainly need strong theories to address the Web, we

also have to investigate users' media practices in order to provide more fine-tuned analyses of the multiple uses of the Internet and its impact on social contexts and lived experience. Doing so would imply that we are ready to take a first step and move beyond generalized and fetishized assumptions of what the Web is and does. This would enable us finally to appreciate the fact that the Web is not a monolithic thing that can be studied and analysed as such. It is a complex socio-technical environment that is created by a variety of different and often contradictory technical applications, platforms, texts, discourses, cultural, political and economic processes, practices, stories, lived experiences and human relations. Understanding this is of pivotal importance to starting to address future technological and social developments and come to terms with the fact that the notions of Web 1.0, 2.0 and 3.0 are in fact cultural constructs.

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