

The Sociology of Critique in Wikipedia

Submission to *Critical Studies in Peer Production*

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To understand how Wikipedia research can be 'critical', it is useful to define the sociological meanings of 'critique'. And even before that, it seems advisable to characterise how one proposes to use theoretical language. The question of power and of its contestation can then be addressed: what happens to power when it is distributed amongst equals in open projects such as Wikipedia? In this paper two main types of 'authority' (justifications for legitimate expert or administrative actions) which respect the autonomy of participants are presented. These forms of justification are especially necessary because of the prevalence of disputes on Wikipedia, so the main causes of conflict within the 'encyclopaedia that anyone can edit' are summarised. Critiques of authority used by participants are defined as *critiques of separation*, and the factors which limit these critiques in Wikipedia are tracked. Finally, ethical issues raised by critical Wikipedia research are addressed.

1. Introduction: The Language of Theory and the Forms of Critique

For those who wish to describe the world theoretically, little, it seems, beats creating neologisms which will show, by their very existence, that the phenomenon being described is worth talking about. Theoretical success can subsequently be measured when terms are used by others, spreading virally. This results in a rich conceptual effervescence, which can make you feel quite lost. Take contemporary capitalism. Should it be defined as 'informational' (Manuel Castells)? Or might we perhaps call it 'vectorial' (Mackenzie Wark), 'digital' (Dan Schiller), 'cognitive' (Yann Moulier-Boutang) or 'communicational' (Jodi Dean)? Or should we turn instead towards older terms such as 'spectacular' (Guy Debord) or 'post-industrial' (Daniel Bell)? For my part I believe that the social sciences of the past represent a well-stocked linguistic pool, from which it is easy to help oneself. My rule will therefore be simple: to define authority and critique in Wikipedia, whenever originality is historically undeniable, novel terms may be created; otherwise, it is forbidden.

Now to the question of critique. Macek defines 'radical media scholarship' as 'politically-motivated research on the media which attempts to understand the world in order to change it and which is typically informed by Marxism, materialist feminism, radical political economy, critical sociology and social movement theory'.¹ This is fine, as far as it goes, but leaves open the question of what is being critiqued, by whom, and on what grounds? Three main types of critique can be distinguished.²

¹ Steve Macek, 'Divergent Critical Approaches to New Media', *New Media & Society* 8.6 (2006): 1031-1032.

² Danny Trom, 'La Crise de la Critique Sociale Vue de Paris et de Francfort', *Esprit* 7 (2008): 108-126.

One has a *historical* dimension, denouncing the present in terms of an anticipation of the future. A second variant criticises the present situation in the name of a *scientific* posture: unveiling the reality hidden by ideology, illusion, alienation. Finally a third critical stance is based on *indignation*: reality is denounced not in the name of the future or of science, but because it makes us subjectively feel the weight of injustice. The strength of Marxism was, or is, depending on how one feels about its relevance, to combine, or juxtapose, all three types. How relevant are these distinct critiques to online projects such as Wikipedia? Trom argues that the first type of critical activity, based on historical destiny, has been discredited by the collapse of the Soviet Union and its satellites.³ Nonetheless some theorists believe that a future society is being built now not because of historical agents, but because of new processes. Members of the Oekonux network write that commons-based peer production such as Free Software and Wikipedia represent the harbinger or ‘germ form’⁴ within capitalism of a new social order based on the free provision of goods or on commonly constituted ‘pools’.⁵ And Michel Bauwens of the P2P Foundation argues that peer to peer work already constitutes the direct creation of value by civil society, whereby individuals do not abdicate their property rights to corporations or the State but remain shareholders of their production: ‘democratically governed’ commons are becoming ‘the core institution of the new political economy’.⁶

The question of the exact identity of the ‘shareholders’ is not addressed. In the online environment, access is of course limited to those who possess the requisite economic and cultural resources. In addition to potentially reproducing the advantages of elites, the *Internet-as-free-content-for-all* ideology erases the distinction between producers and spectators of content, so that everyone will be an artist or a journalist; a heroically active ‘prosumer’ or ‘produser’ instead of an abject consumer. However informational (vectorial, etc.) capitalism seems to be able to handle reasonably well a zone of free goods. In fact portraying cyberspace as a cornucopia brimming over with free or pirated content creates in consumers the *need* to purchase the requisite hardware and bandwidth; and it tells them to do so in the name of rebelling against the power of corporations intent on protecting their

³ Ibid.

⁴ Stefan Meretz and Stefan Merten, ‘Germ From Theory - Conceptual Overview’, under review.

⁵ Christian Siefkes, *From Exchange to Contributions. Generalizing Peer Production into the Physical World*, Berlin: Edition C. Siefkes, 2007.

⁶ Michel Bauwens, ‘How Does the Idea of P2P/Commonism Differ from the Socialist Tradition?’ P2P Foundation weblog, 31 August, 2010.

private intellectual property.⁷ As the Apple Computer slogan once infamously had it: 'Rip. Mix. Burn. It's your music.'

As concerns the second type of critical positioning, a paradigmatic example was Pierre Bourdieu's critical sociology which aimed to uncover forms of the social unconscious through which socially dominant people reproduce their domination.⁸ If Bourdieu had spent any time thinking about the Internet and online peer production (which he didn't), he might have said something like this: what we have here is a classic example of a para-artistic autonomous field with its specific forms of power or 'capital', which value anti-economic rewards; incumbents are educated white males who distinguish themselves as the exclusive repositories of technological expertise in this so-called common good, 'free software'; coding for code's sake allows these persons to profit from the interest in being perceived as disinterested; hackers monopolise the capacity to say with authority which persons are authorised to call themselves hackers, hence the disparagement of 'script kiddies' or 'hacktivists' who are not interested in programming per se, but in the use of applications for fun or activism.

In short, online projects should be understood as expressing the values of the dominated fraction of the dominant social group - that is, people endowed with intellectual rather than economic assets. Bourdieu might have then concluded by stressing the ambiguous view of economic success in hackerdom, and by extension in all online free projects. These projects are structured by a rejection of 'corporate' values yet reproduce the advantage of those who are endowed with cultural capital. Now, there is more than a little truth in such an analysis. The early social Internet was strongly imbued with a logic of distinction: possessors of exclusive email addresses such as the WELL (Whole Earth 'Lectronic Link, one of the first alternative online communities) or of research universities, were viewed in a better light on Usenet than users with commercial accounts. The profusion of terms developed in computer-mediated-communication environments to describe the implementation and violation of behavioral norms ('netiquette') also points to the

⁷ Mathieu O'Neil, 'Rebels for the system? Virus Writers, General Intellect, Cyberpunk and Criminal Capitalism', *Continuum: Journal of Media & Cultural Studies* 20:2 (2006): 225-241.

⁸ Pierre Bourdieu, *Distinction: A Social Critique of the Judgement of Taste*, Cambridge, MA: Harvard University Press, 1984 [1979]. See also Pierre Bourdieu, 'The Field of Cultural Production, or: The Economic World Reversed', *Poetics*, 12.4-5 (1983), pp. 311-56

importance of cultural capital on the Net.⁹

Though the democratisation of online communication and production thanks to tools such as blogs and wikis (Web 2.0) has stretched the boundaries of belonging, the Internet remains an exclusive enclave. Within this protected universe, there exist strong divisions, deriving from the identity of its first inhabitants. Like Free Software, Wikipedia constitutes an environment with a highly skewed gender distribution. According to a United Nations University survey, only 25% of Wikipedians are female.¹⁰ It may be unfair to assert that Wikipedia communication conforms to a familiar online pattern whereby criticism of aggressive behaviour is disqualified as constituting an intolerable censorship of freedom of speech.¹¹ Yet the agonistic spirit of netiquette lives on: it is still perfectly acceptable to communicate very aggressively on Wikipedia, provided that the comments are not 'personal'.¹²

However, critical sociology's psychoanalysis-inspired notion of cultural unconscious does not mesh with people's observed capacity for self-reflection. In other words critical sociology does not sufficiently account for the critical operations undertaken by actors. People are not 'cultural dopes' who lack insight into the normative underpinnings of their actions.¹³ As Michel De Certeau said about Foucault's notion of the unconscious structuring force of the *episteme*: 'Who is he to know what no one else knows, what so many thinkers have "forgotten" or have yet to realize about their own thoughts?'.¹⁴ Luc Boltanski suggests that people are endowed with *reflexive and critical capacities* (which are not necessarily expressed in public) which question the exteriority of sociologists as sole possessors of truth. People use arguments which display similar features to sociological or scientific reports: valid arguments rest on a system of proofs, on the selection of pertinent facts, on unveiling operations. It is impossible to maintain a radical distance between the everyday activity of 'ordinary people' and the scientific activity of sociologists. This is why Boltanski et al.'s 'sociology of critique', influenced by ethnomethodology, aims to place the actions

⁹ Elizabeth Lawley, 'The Sociology of Culture in Computer-Mediated Communication: An Initial Exploration', 1994.

¹⁰ Rüdiger Glott and Rishab Ghosh, 'Analysis of Wikipedia survey. Topic: Age and Gender Differences', UNU-Merit, 2010.

¹¹ Susan Herring, 'The Rhetorical Dynamics of Gender Harassment On-Line', *The Information Society* 15.3 (1999): 151-167.

¹² Sage Ross, 'Review of *Cyberchiefs: Autonomy and Authority in Online Tribes*', The Wikipedia Signpost, 15 June 2009.

¹³ Harold Garfinkel, *Studies in Ethnomethodology*, Englewood Cliffs, NJ: Prentice Hall, 1969, p. 37.

¹⁴ Michel De Certeau, *Heterologies: Discourses on the Other*, Manchester: Manchester University Press, 1986, p.183.

and moral judgements of ordinary people at the centre of its analytical project.¹⁵ People are understood as formulating criticisms, justifications and compromises by referring to common conventions (known as 'cités'). This perspective, corresponding to Trom's third kind of critique, can be applied to the analysis of power in online peer production projects.¹⁶ This analysis did not subscribe to pragmatic sociology's radical abandonment of groupings or collective being, where the public is seen as a phenomenon that leads beyond proximity, towards others treated in a general way - it would be difficult to argue, for example, that a person's gender does not affect the possibilities for action which he or she encounters. So though 'critical research' will be used here to mean the *analysis of critiques deployed by people*, we should bear in mind that social facts like class and gender frame and constrain action.

2. Online Justification: Hacker, Sovereign and Index Authority

Rather than an as online utopia of perfect freedom or a dystopia of perfect control, power in anti-authoritarian online groups such as FLOSS projects or Wikipedia will be envisaged in the guise of situations where people justify decisions and actions affecting others by referring to common understandings or conventions. To characterise these conventions, the Weberian concept of 'authority' or 'legitimate domination' was applied it to anti-authoritarian projects. An individual type of justification was first defined, based on the extraordinary skills of an individual: charismatic hacker authority. Steven Levy defined the 'hacker ethic' as the commitment to the free access of computers and information, the mistrust of centralised authority and the insistence that hackers be evaluated solely in terms of technical virtuosity and not 'bogus' criteria such as degrees, age, race or position.¹⁷ In Weber's typology, merit-based promotion distinguishes legal systems from patrimonial and charismatic ones.¹⁸ But in the hacker universe, and by extension in all volunteer-staffed prosumer projects, if work for the project constitutes the basis for recognition, this recognition is 'paid' in affect, in the shape of the respect by one's peers, and not by an official promotion, commendation or financial bonus awarded by a hierarchy. This de-bureaucratisation or

¹⁵ Luc Boltanski, *L'Amour et la Justice comme Compétences: Trois Essais de Sociologie de l'Action*, Paris: Métailié, 1990; Luc Boltanski and Laurent Thévenot, *On Justification: Economies of Worth*, Princeton, NJ: Princeton University Press, 2006 [1991]; Luc Boltanski and Eve Chiappello, *The New Spirit of Capitalism*, London: Verso, 2004 [1999].

¹⁶ Mathieu O'Neil, *Cyberchiefs: Autonomy and Authority in Online Tribes*, London: Pluto Press, 2009.

¹⁷ Steven Levy, *Hackers: Heroes of the Computer Revolution*, Garden City, NY: Doubleday, 1984.

¹⁸ Max Weber, *Economy and Society: An Outline of Interpretive Sociology*, Berkeley, Los Angeles and London: University of California Press, 1978 [originally published 1922].

charismatisation of merit implies that people have to prove their competence during public performances of excellence.

The different variants of hacker authority share an important characteristic: they are intimately linked to the characteristics of the individual, and are not transferable to anyone else. On Wikipedia hacker charisma is, of course, first embodied in the person of the project's remaining founder: this individual's extraordinary status still allows him to frequently intervene in disputes by summarily blocking users or content. Though these actions are undemocratic and generate controversy, they are not seen as illegitimate on Wikipedia. Less exceptional forms of charisma can be found in the regard for the hard graft accomplished for the project, whose recognition is materialised in 'barnstars', tokens of appreciation which are publicly conferred by one participant to another and appear on the personal pages of project participants.

The second form of justification, sovereign authority, is based on regard for the common good. The counter-cultural roots of online peer production mean that peer production projects are usually held to conflict with the notion of 'bureaucracy'. For example, the founding members of the Internet Engineering Task Force, the body which establishes Internet transmission protocols, contended that the IETF resembled a 'happening' without managers, politicians ('suits and neckties') or formal structure.¹⁹ Wikipedia similarly claims that it is 'not a bureaucracy'.²⁰ Yet Wikipedia, like most large peer produced projects, comprises typically bureaucratic features such as the maintenance of archives of all decisions, the existence of rules, and the separation of roles and persons: any Wikipedia editor can become an 'administrator' and hence exercise authority over other participants; these officers can also be replaced by someone else. The difference with traditional corporate bureaus are the stated transparency of decisions and commitment to consensus-building: sovereign authority may be conceived as a fusion of direct-democratic and bureaucratic traits. A complex hierarchy has emerged, composed of administrators ('admins' or 'sysops'), stewards, and bureaucrats, each of these categories being endowed with specific tools and competencies (blocking articles or participants, nominating people to positions, etc.). Since admins have been entrusted with legitimate domination by their peers, it can in theory be withdrawn by the community. In reality,

¹⁹ Paul Hoffman and Susan Harris. 'The Tao of the IETF: A Novice's Guide to the Internet Engineering Task Force', RFC 4677, 30 November, 2009.

²⁰ Wikipedia, 'Wikipedia is not a Bureaucracy', 2010.

though they were initially meant to operate only as janitors, admins, who are never subject to re-election, have taken on increasingly greater responsibilities, of a behavioural and editorial nature.²¹ A particularly telling example is that 46% of page blocks effected by administrators of the English Wikipedia between December 2004 and January 2008 had to do with the question of whether articles should be deleted. In other words, 1,500 people are determining what is 'encyclopaedic', whilst the project has 12 million user accounts.²²

Other researchers had referred to forms of legitimate power in peer production projects - Reagle mentions charisma in Wikipedia, and Auray as well as O'Mahony and Ferraro talk about sovereignty in Debian.²³ But rather than conceiving them in isolation, these justificatory regimes were articulated together, and to a new type of charismatic legitimacy, index authority, which is achieved through independent rankings of individuals aggregated by a specific technology: search engines. While it is a kind of network centrality, index authority differs from the network centrality traditionally studied by Social Network Analysis (SNA) because in SNA centrality measures are calculated only over the actors in the study, while index authority is calculated over the entire web graph. The index authority of a given website cannot be easily modified by changing a few links in the hyperlink network formed by this website's immediate ecological niche.²⁴

The relationship between Google and Wikipedia is central to the online encyclopedia's success. Why did Google start returning Wikipedia articles in the top five results for searches? Initially because of a combination of a high incidence of links from active sectors of the Internet (such as the blogosphere), combined to possible favoritism by Google, and especially because of the wealth of interlinking between Wikipedia articles and policy pages, which tends to spread index authority

²¹ Andrea Forte and Amy Bruckman, 'Scaling Consensus: Increasing Decentralisation in Wikipedia Governance', in *Proceedings of HICSS (2008)*: 157-166.

²² Max Loubser, 'Wikipedia Governance: Are Administrators a "Big Deal"?', in Malte Ziewitz and Christian Pentzold (eds) *Modes of Governance in Digitally Networked Environments. A Workshop Report*, Oxford Internet Institute, 2010: 21-24.

²³ Joseph Reagle, 'Do as I do: Authorial Leadership in Wikipedia', in *WikiSym '07: Proceedings of the 2007 International Symposium on Wikis, 2007*; Siobhán O'Mahony and Fabrizio Ferraro, 'The Emergence of Governance in an Open Source Community', *Academy of Management Journal* 50.5 (2007): 1079-1106; Nicolas Auray, 'Le Sens du Juste dans un Noyau d'Experts: Debian et le Puritanisme Civique', in Bernard Conein, Françoise Massit-Folléa and Serge Proulx (eds) *Internet, une utopie limitée: Nouvelles régulations, nouvelles solidarités*, Laval, Quebec: Presses de l'Université Laval, 2005, pp. 125-148.

²⁴ Robert Ackland and Mathieu O'Neil, 'Online Collective Identity: The Case of the Environmental Movement', under review.

within the site: Wikipedia, argues Sage Ross, 'spreads its links out and has a "natural" (if that word can apply here) link structure that takes all the incoming "Google juice" that accrues to externally popular articles (the ones bloggers and others link to) and reapportions it according to internal popularity (the articles that other articles link to)'.²⁵ The consequence is to make the stakes of decisions on Wikipedia even higher, as control of the content means control of the main online reference tool which accomplishes the primary institutional function of defining *what reality is*.

3. The Rules of Law: Conflict on Wikipedia

Some aspects of mass peer producing communities appeared to be new, so it seemed appropriate to create a new term for them. 'Online tribal bureaucracies' were defined as a type of organisation characterised by traits such as the cooperative production of free content, the overlapping of authority orders, and deliberative procedures. Online tribal bureaucracies have both advantages and disadvantages when compared to corporate bureaus and traditional communes: there is less risk of misuse of internal resources by insiders than in traditional bureaucracies (though the risk of outsider misuse is strong in open projects) but conversely there is no legal responsibility for the well-being of participants.²⁶ Another characteristic of online tribal bureaucracies is the prevalence of conflict: the main cost of anonymous crowdsourcing in mass projects such as Wikipedia is many-to-many fighting.²⁷

When it comes to conflicts in Wikipedia, the role of rules cannot be overstated. In the absence of centralized editorial oversight, all interactions on Wikipedia are meant to be regulated by an overlapping thicket of editorial and behavioural principles or protocols such as WP:NPOV (neutral point of view), WP:RS (reliable sources), WP:NOR (no original research), WP:AGF (assume good faith), etc. A sign that conflict is occurring is when people start quoting the rulebook, something which experienced editors tend to do a lot. As participants become more and more involved in the encyclopaedia, they become more and more familiar with its rules, and seek more and more to apply them to enable the project's functioning, as a form of personal engagement which is also a moral

²⁵ Sage Ross, 'Comments to Mathieu O'Neil, Wikipedia and Google', P2P Foundation weblog, July 10, 2009.

²⁶ Mathieu O'Neil, 'Organisation Without Domination', under review.

²⁷ Mathieu O'Neil, 'Shirky and Sanger, or the Costs of Crowdsourcing', *Journal of Science Communication* 9.1 (2010).

initiative.²⁸ References to policy pages can be statistically measured: research has shown that pages with more than 250 posts had 51% of the links towards policy pages.²⁹

The initial phase of Wikipedia's rise was characterised by an underlying tension. Since development relied in part on the constant entry of enthusiastic 'newbies', the subsequent herding of these novice autonomous content providers by administrators along normative policy lines could not but generate resentment and the feeling of injustice, in the shape of participants who felt they have been ill treated, or even humiliated, by registered editors and admins. Unfairness can be hard to evaluate, as both sides in disputes invariably feel they are in the right, so a structural example will best illustrate the issue: creators of articles set its tone. Because of a 'first-mover advantage', the initial text of an article tends to survive longer and suffer less modification than later contributions to the same article.³⁰ It is to be expected that article creators who maintain an interest in the article would put it on their watch list and, despite the project's injunctions, would experience feelings – if not of ownership – at least of heightened sensitivity and possible unhappiness if someone attempted to 'improve' their baby. The problem was compounded when editors disposed of administrative tools. Further, if these kinds of situations involved existing friendship cliques, there was an increased likelihood of abuses of admin authority. In this sense, conflict appeared to be an inevitable by-product of the Wikipedia development model.

In their survey of the patterns of conflict on the French Wikipedia, Auray et al. identified other factors which contribute to fighting.³¹ First, the diversity of participants: scientists, interested amateurs, consumers, advertising agencies, and industry spokespersons come together to debate the proper definition of reality with no clear means of telling who is an expert. The number of participants can also contribute to conflictuality: when there are more than ten people involved, discussion increasingly moves to the talk pages of users, and is more likely to degenerate into insults. The nature of encyclopedic work on a wiki also plays a role: the peremptory nature of

²⁸ Nicolas Auray, Martine Hurault-Plantet, Céline Poudat and Bernard Jacquemin, 'La Négociation des Points de Vue: Une Cartographie Sociale des Conflits et des Querelles dans le Wikipédia Francophone', *Réseaux* 154 (2009): 15-50.

²⁹ Ivan Beschastnikh, Travis Kriplean and David W. McDonald, 'Wikipedian Self-Governance in Action: Motivating the Policy Lens', in Proceedings of the 2008 AAAI International Conference on Weblogs and Social Media, Seattle, WA., 30 March-2 April 2008.

³⁰ Fernanda B. Viégas, Martin Wattenberg, and Kushal Dave. 'Studying Cooperation and Conflict Between Authors with History Flow Visualisations', CHI 2004, Vienna, 24-29 April, 2004.

³¹ Nicolas Auray et al., 'La Négociation des Points de Vue'.

discourse which affirms a truth does not favour dialogue; the speed of publication leaves no time for cooling off. Controversial topics such as inter-ethnic or inter-faith conflicts and 'scientific' categories with low academic legitimacy such as homoeopathy also generate disagreement.

To these factors can be added the lack of a clear institutional framework in several important areas. A massively distributed workforce results in the diffusion of governance. When combined with fuzzy guidelines such as 'notability' the result is innumerable decision-makers with their own take on the rules. Further, there is no Constitution to spell out important roles and processes such as the exact powers of the charismatic founder or recall mechanisms for abusive authorities. The issue of the impeachment of authority figures has often been raised. In 2008 a Wikipedia editor put forward an admin recall proposal which was extensively discussed and tweaked on his talk page.³² The proposal attracted the attention of the remaining founder, who commented that any such processes were matters of deep concern, because 'people in positions of trust (the ArbCom for example) [should be] significantly independent of day-to-day wiki politics'.³³ Since he was unaware of any cases in which a recall process had been needed, the founder viewed it as a form of 'process-creep'. If there really were such an example, then the project should simply 'look harder at what went wrong'.³⁴ This approach to governance (keep it loose, keep it personal, seek consensus) has several important consequences. Dismissing codified solutions as 'rigid' or 'bureaucratic' guarantees stasis: as there is no universally accepted way of changing the way things are; there are few avenues for legitimate critique; and the approach's long-term viability is open to question. Since Wikipedia operates following the constant reform and refinement of social norms, the issue of changing policy with an ever-increasing number of participants becomes more complex. Wikipedia's lack of a central policy-making system means that 'site-wide policy-making has slowed and mechanisms that support the creation and improvement of guidelines have become increasingly decentralised'.³⁵ Wikipedia's lack of a Constitution, or of clearly defined voting procedures that would enable this Constitution to be updated, means there is a danger of the project fragmenting into a multitude of smaller wiki-projects – local jurisdictions over which a limited number of participants will have a say, and who may start writing rules that conflict with others.

³² User:Amerique, 'User Talk: Community recall', Wikipedia.

³³ The Arbitration Committee is Wikipedia's high court.

³⁴ User:Jimbo_Wales, 'User Talk: Community recall', Wikipedia.

³⁵ Forte and Bruckman, 'Scaling Consensus', p. 161.

Finally, aside from the nature of participants, the type of work, controversial topics, and institutional issues, the greatest accelerant of conflict of Wikipedia are questions about the identity of participants: not all registered accounts are genuine. Uncertainty over the relationship between physical and digital identities is a significant cause of the turbulence which afflicts the project, as the regulation of the activities of vandals or propagandists who use duplicate identities (*sockpuppets*) is a potential breeding ground for miscarriages of justice, or at any rate for discriminatory treatment. For example participants who have not registered on the site and instead just use an IP address are more likely to be involved in semi-protected articles, where disputes and insults typically occur. IPs are also more likely to insult others, so there are suspicions that IPs are registered users who use 'socks' to engage in insulting behaviour which they would not dare to do under their officially registered identities.³⁶ The lack of confidence towards users who do not register an identity (even if it is pseudonymous) on the French Wikipedia means these users' contributions are much more liable to be reverted than that of registered users;³⁷ Similarly in the English Wikipedia, the percentage of reverted contributions has grown from 2.9% in 2005 to 6% in 2008, with the contributions of non-registered or ordinary users much more likely to be reverted than that of the administrative elite.³⁸

4. Critiques of Separated Expertise and Justice

The critical operations of people in peer production projects are critiques of separation: what participants seek, first and foremost, is a feeling of unity between their identities as consumers and producers, between their activities of work and play, ultimately between themselves and the project. Anything that contradicts this holistic fusion is to be denounced, whether it is separated expertise or separated justice.³⁹ Therein lies online peer production's implicit critique of the wider social order. Contemporary domination bases its legitimacy on the authority of experts, to the detriment of legitimacy based on popular representation.⁴⁰ Citizens are dispossessed of their political autonomy by a system in which technological and even economic stakes outpace their understanding and

³⁶ Nicolas Auray et al., 'La Négociation des Points de Vue'.

³⁷ Ibid.

³⁸ Bongwon Suh, Gregorio Convertino, Ed Chi and Peter Pirolli, 'The Singularity is Not Near: Slowing Growth of Wikipedia?', in *WikiSym'09. Proceedings of the 2009 International Symposium on Wikis*, Orlando, Florida, 2009.

³⁹ Mathieu O'Neil, 'Critiques of Separation: Leadership in Online Radical-Prosumer Projects', under review.

⁴⁰ Luc Boltanski, *De la Critique. Précis de Sociologie de l'Emancipation*, Paris: Gallimard, 2009.

capacity for decision-making. When it operates as it is supposed to, hacker expertise is democratic: the only criteria is excellence, participants are equal, and deliberations and criticisms are public. It constitutes a rejection of technocracy which operates in secret and does not always seek the common good. As for collective regulation, the spirit of online projects is that the law applies to all and it is open to criticism and debate by all.⁴¹ This represents a stark contrast with non-virtual society where a defining characteristic of the power of dominants is the ability to laugh at the rules which the dominated observe, without ever paying a price.

The very premise of Wikipedia constitutes a critique of separated expertise. Hackers affirming that their solution is the best are quickly subjected to their peers' evaluation: either the code runs, or it doesn't. In contrast to projects where technical excellence forms the basis for recognition, Wikipedia's collective process is meant to democratise truth-seeking. Every article can generate a debate as to what is correct. This is meant to be resolved by the observance of rules such as verifiability and the use of reliable sources, by a manner of scientific process, so that anyone can claim the title of expert. The project seems to represent the most radical form of anti-credentialism: expertise is no longer embodied in a person but in a *process*, the 'wisdom of the crowd', that is to say interactions between individual authors and a massively distributed peer community.⁴²

The critique of expertise will primarily be exercised against the pretensions of those who claim to be the sole possessors of truth and knowledge because of their outside accreditations. A well-known example were the charges laid against William Connolley.⁴³ When Connolley, a Wikipedia editor who in his day job was a climatologist at Cambridge University's British Antarctic Survey, attempted to correct mistakes on Wikipedia's climate change article, he was accused of 'promoting his own POV [Point of View] and of having systematically erased any POV which did not correspond to his own'. His anonymous opponent brought him before Wikipedia's high court, the Arbitration Committee, where Connolley was, for a time, duly punished: he was only allowed to make one 'revert' a day, apart from cases of vandalism. Though this sentence had more to do with breaches of etiquette, with Connolley's not suffering fools gladly, than with the promoting of a

⁴¹ Mathieu O'Neil, 'Critiques of Separation'.

⁴² Mathieu O'Neil, 'Shirky and Sanger, or the Costs of Crowdsourcing'.

⁴³ See Wikipedia:Requests for arbitration/Climate change dispute, 22 March-23 December 2005. Available at: <http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Climate_change_dispute#Final_decision>

biased perspective, the case resonated deeply as it highlighted the fact that legitimate possessors of specialised expertise were now placed on the same level as everyone else.

The critique of expertise is not applied uniformly; separated forms of scientific legitimacy still play a role in Wikipedia. The infamous case of Essay illustrates the point. This person, whose conflict-mediation work had led him to the top rungs of the project's bureaucracy, routinely presented himself as a Professor of Divinity Studies to 'win' content disputes, whereas he lacked any academic qualifications whatsoever.⁴⁴ Participants also show respect for genuine competence in complex technical disciplines which discourage opinionated amateurs.⁴⁵ Furthermore, home-grown forms of classifying and credentialing participants have emerged. For example, it very common for Wikipedia editors arriving on the site of a discussion or dispute to verify the protagonists' past contributions, such as their edit counts.⁴⁶

The types of separated expertise which are perceived by participants as originating from outside the project (such as claims to academic competence) are easier to criticise than the home-grown variety. In all cases however disputes are resolved by the project's judicial processes and officers. Separated justice contradicts open projects which follow egalitarian principles, yet here as well online peer projects struggle between their non-separate ideal and the reality that divisions are always being recreated. This is particularly the case in Wikipedia. The project's openness, its extraordinary development and its sky-high index authority have led to the online encyclopaedia embodying the revolutionary potential of peer production: anyone can shape how the world is represented. When this democratic promise is not realised, when separation occurs and domination appears unjustly concentrated, reactions are often violent, prompting accusations that Wikipedia operates as a 'Cult'.⁴⁷

Wikipedia undoubtedly attracts a fair number of incorrigible lunatics and provocateurs who should quite properly be kicked out. But statistical analysis also reveals that a common Wikipedia conflict

⁴⁴ Noam Cohen, 'A Contributor to Wikipedia Has his Fictional Side', *New York Times* (5 March 2007): C15.

⁴⁵ Larry Sanger, 'The Fate of Expertise after Wikipedia', *Episteme* 6.1 (2009): 52-73.

⁴⁶ Sage Ross, Email message to the author, 2010.

⁴⁷ Seth Finkelstein, 'Inside, Wikipedia Is more like a Sweatshop than Santa's Workshop', *The Guardian* weblog, 6 December, 2007.

resolution strategy is to scapegoat 'problematic' individual as responsible for systemic failure.⁴⁸ This evokes other troubling aspects of online work, such as the ease of ganging up on opponents by communicating secretly off-wiki, and the difficulty in having one's claims for justice taken seriously once one has been classified as a disruptor by the authorities, in the absence of outside avenues of appeal. Evolutionary factors also play a role in disarming the critique of separated justice. If conflicts cannot be resolved by conciliation and mediation, disputants can appeal to the supreme conflict-resolution body on Wikipedia, the Arbitration committee or 'ArbCom'. The ArbCom invites witnesses to provide testimonies, gathers evidence, and adjudicates through (secret) votes. Evidence on Wikipedia takes the form of 'diffs' (the 'difference' between two versions of a page showing a new edit) which must be produced whenever a claim is made about the actions of an editor. It is precisely the mastery of the socio-technical forms of evidence presentation that enables experienced editors to present convincing cases during disputes. Conflict resolution on Wikipedia has increasingly become affected by the mastery of this pseudo-legal competency, known as 'wikilawying'. This is but one example of the way in which administrators can influence the project.

As the number of admins rises, they apply ever-more precise regulation to an ever-shrinking pool of creatable articles: proportionally, the number of pages defining rules has been growing at a much faster rate than content pages.⁴⁹ There has reportedly been a dip in recruitment numbers in recent years.⁵⁰ This can be attributed to the increase of disciplinary control, and to its unequal application to everyone, as alluded to in the previous section. Since persistent critiques of administrative authority is viewed as disruptive, participants who feel they have been the victims of unredressed injustice on Wikipedia often migrate to hypercritical sites such as Wikipedia Review and Encyclopaedia Dramatica, where the perceived misdeeds of the 'Cabal' which runs Wikipedia are pored over and derided, sometimes in juvenile fashion.

Critique can also be hampered by non-human actors: 'bots', computer programs tasked with

⁴⁸ Nicolas Auray et al., 'La Négociation des Points de Vue'.

⁴⁹ Aniket Kittur, Ed Chi, Bryan A. Pendleton, Bongwon Suh and Todd Mytkowicz, 'Power of the Few vs. Wisdom of the Crowd: Wikipedia and the Rise of the Bourgeoisie', Twenty-fifth Annual ACM Conference on Human Factors in Computing Systems (CHI 2007), San Jose, CA, 28 April-3 May 2007.

⁵⁰ Bongwon Suh, et al., 'The Singularity is Not Near'; see also Felipe Ortega, Daniel Izquierdo-Cortazar, Jesus M. Gonzalez-Barahona and Gregorio Robles, 'On the Analysis of Contributions from Privileged Users in Virtual Open Communities', in Proceedings of the 42nd Hawaii International Conference on System Sciences (2009), pp. 1-10.

automatically executing repetitive task, are multiplying on Wikipedia. Bots can have a far-reaching impact on the project, as the systematic application by a bot of a directive (a non-binding recommendation) can transform it, de facto, into a law.⁵¹ Once they have been set up, bots escape critique as they cannot be suspected of striving to achieve anything else than their explicit purpose.

5. Conclusion: Ethics and Politics of Critical Wikipedia Research

What this boils down to is that it is time for researchers to start taking Wikipedia as an organisation, and the various roles which people occupy within it, more seriously. But how should researchers go about it? The classic position in Internet Research ethics, dating back from the 1990s, is to stress the Internet's blurring of the categories of the private and the public, signifying that technical accessibility does not equal publicness, and making anonymity and informed prior consent necessary.⁵² Others have gone further, advocating the search for a consensus between the researchers and their objects of research so that subjects may correct or change what is written about them before publication;⁵³ work together with subjects to produce research outputs;⁵⁴ practising an 'open source ethics'.⁵⁵

Susan Herring has formulated some trenchant criticisms of this stance.⁵⁶ They all apply to Wikipedia: (a) false anonymity: since the Internet is a written medium, in publicly archived projects it is trivial to perform a search and find the authors of a particular quote. Anonymising subjects would therefore simply be a convention, a way of protecting the researcher's ethical reputation. (b) lack of verifiability: how can results be reproduced by other researchers if distinguishing features are scrubbed out? (c) the problem of scale: in large projects, who should the researcher seek prior

⁵¹ Stuart Geiger, 'Bot Politics: The Domination, Subversion, and Negotiation of Code in Wikipedia'. Critical Point of View Conference, Amsterdam, 26-27 March, 2010.

⁵² Storm King, 'Researching Internet Communities: Proposed Ethical Guidelines for the Reporting of Results', *The Information Society*, 12.2 (1996): 119-128; Dennis Wascul and Mark Douglass. Considering the Electronic Participant: Some Polemical Observations on the Ethics of On-line Research. *The Information Society*, 12.2 (1996): 129-140.

⁵³ Christina Allen, 'What's Wrong with the "Golden Rule"? Conundrums of Conducting Ethical Research in Cyberspace', *The Information Society* 12.2 (1996): 175-187.

⁵⁴ Maria Bakardjieva and Andrew Feenberg, 'Involving the Virtual Subject', *Ethics and Information Technology* 2 (2001): 233-240.

⁵⁵ David Berry, 'Internet Research: Privacy, Ethics and Alienation: an Open-Source Approach', *Internet Research* 14.4 (2004): 323-332.

⁵⁶ Susan Herring, 'Linguistic and Critical Analysis of Computer-Mediated Communication: Some Ethical and Scholarly Considerations', *The Information Society*, 12.2 (1996): 153-168.

consent from? In the case of Wikipedia literally hundreds of people may opine during a conflict. (d) finally, and most problematically, the possible censoring of research: how can researchers conduct legitimate critical research (in Herring's case, she was investigating gender bias in email lists) if prior consent is sought out? Would informing subjects of the research project not entice them to modify the very behaviour which the researcher is documenting? In particular, what of participants who wield power over other users?

In addition, Wikipedia has unique socio-technical features which differentiate it from the MUDs and discussion lists early Internet researchers dealt with. Non-disruptive Wikipedians do not participate in the project to share personal stories and experiences, find emotional support, experiment with identity, or play: they participate to write an encyclopaedia following strict editorial and technical design rules. Wikipedia is a working environment; it is also imbued with a strong pseudo-legal culture, as detailed in the previous sections of this paper. Whilst new or inexperienced users may not be aware that all edits on Wikipedia can potentially be subsequently referred to, the same cannot be said of experienced editors and particularly of administrators. In short Wikipedia has a culture of public 'rational-critical' discussion;⁵⁷ experienced editors expect their words and actions to be evaluated and criticised by their peers.

The ethics of not doing harm to subjects needs to be balanced to the ethics of potentially not addressing injustice unearthed by research.⁵⁸ In addition, the requirements of University Ethics Committees can considerably vary between countries. Here there are more questions than answers. Should online tribal bureaucrats be held accountable for their actions? Beyond Wikipedia, this is a central question for the emerging organisations that promote participatory, horizontal distributions of power. How different are such organisations from other social sites where people confront injustice? The answer is that they are volunteer projects and hence often lack oversight mechanisms. When police officers or judges in liberal democratic societies are found to have abused their authority, mechanisms exist to strip them of their power. When employees think their boss behaves inappropriately, they can seek redress. How would such authorities act if they were effectively protected from public evaluations by anonymity? In brief: should traditional ethical research

⁵⁷ Sean Hansen, Nicholas Berente and Kalle Lyytinen, 'Wikipedia, Critical Social Theory and the Possibility of Rational Discourse', *The Information Society* 25.1 (2009): 38-59.

⁵⁸ Susan Herring, 'Linguistic and Critical Analysis of Computer-Mediated Communication'.

prohibitions apply to community-appointed judicial officers?

Legal scholars do not ask for the permission of judges when reviewing and criticising their decisions. The early days of Internet research saw a host of stimulating examinations of the emergence of commons-based legal systems in MUDs and MOOs.⁵⁹ Yet there has been relatively little examination of Wikipedia's internal legal structure. The discussion of the legality of administrative actions implies an examination of particular cases and decisions. Since Wikipedia-law is (a) unstable, as it can potentially be challenged and rewritten and (b) constantly used as a tool in a hornet's nest of micro-conflicts, it is understandable that legal scholars would hesitate to comment. Yet if the point of critical research is to account for reality in a reasonably precise manner, it is difficult to see how this could be achieved without referring to specific examples of practices and procedures – which then runs the risk of identifying individuals, even when their identity is disguised, for the reasons outlined above. Should researchers, then, strictly obey the 'golden rule' by only conducting quantitative analysis at the macro level ('there may be cases of abusive authorities because of structural factors x, y and z'), thereby staying out of Wikipedia's embodied arrangements of power? Recent declarations by the Wikimedia Foundation inviting scholars to join in the process of managing the relationship between researchers and Wikimedia communities show that the issue has not gone unnoticed.⁶⁰ Only time will tell whether a hybrid form of critical research, in collaboration with the Wikipedia elite, is desirable, or possible.

References

- Ackland, Robert and O'Neil, Mathieu. 'Online Collective Identity: The Case of the Environmental Movement', under review (2010).
- Allen, Christina. 'What's Wrong with the "Golden Rule"?' Conundrums of Conducting Ethical Research in Cyberspace', *The Information Society* 12.2 (1996): 175-187.
- Auray, Nicolas. 'Le Sens du Juste dans un Noyau d'Experts: Debian et le Puritanisme Civique', in Bernard Conein, Françoise Massit-Folléa and Serge Proulx (eds) *Internet, une Utopie Limitée: Nouvelles Régulations*,

⁵⁹ See for example Tamir Maltz, 'Customary Law and Power in Internet communities', *Journal of Computer-Mediated Communication* 2.1 (1996); Jennifer L. Mnookin, 'Virtual(ly) law: the emergence of law in LambdaMOO', *Journal of Computer-Mediated Communication* 2.1 (1996); Mark A. Lemley, 'The Law and Economics of Internet Norms', *Chicago-Kent Law Review* 73 (1997): 1257-1294; Henry Perritt, 'Cyberspace Self-Government: Town-Hall Democracy or Rediscovered Royalism?', *Berkeley Technology Law Journal* 12 (1997): 413-482.

⁶⁰ Erik Moeller, 'Call for Volunteers: Wikimedia Research Committee', Post to Wiki-Research list, 2 August, 2010.

- Nouvelles Solidarités*, Laval, Quebec: Presses de l'Université Laval, 2005, pp. 125-148.
- Auray Nicolas, Hurault-Plantet, Martine, Poudat, Céline and Jacquemin, Bernard. 'La Négociation des Points de Vue: Une Cartographie Sociale des Conflits et des Querelles dans le Wikipédia Francophone', *Réseaux* 154 (2009): 15-50.
- Bakardjieva, Maria and Feenberg, Andrew. 'Involving the Virtual Subject', *Ethics and Information Technology* 2 (2001): 233-240.
- Bauwens, Michel. 'How Does the Idea of P2P/Commonism Differ from the Socialist Tradition?' P2P Foundation weblog, 31 August, 2010, <http://blog.p2pfoundation.net/how-does-the-idea-of-p2p-commonism-differ-from-the-socialist-tradition/2010/08/31>
- Berry, David. 'Internet Research: Privacy, Ethics and Alienation: An Open-Source Approach', *Internet Research* 14.4 (2004): 323-332.
- Beschastnikh, Ivan, Kriplean, Travis and McDonald, David W. 'Wikipedian Self-Governance in Action: Motivating the Policy Lens', in Proceedings of the 2008 AAAI International Conference on Weblogs and Social Media, 30 March-2 April 2008, Seattle, WA.
- Boltanski, Luc. *L'Amour et la Justice Comme Compétences: Trois Essais de Sociologie de l'Action*, Paris: Métailié, 1990.
- _____. *De la Critique. Précis de Sociologie de l'Emancipation*, Paris: Gallimard, 2009.
- Boltanski, Luc and Thévenot, Laurent. *On Justification: Economies of Worth*, Princeton, NJ: Princeton University Press, 2006 [1991].
- Boltanski, Luc and Chiappello, Eve. *The New Spirit of Capitalism*, London: Verso, 2004 [1999].
- Pierre Bourdieu. 'The Field of Cultural Production, or: The Economic World Reversed', *Poetics*, 12.4-5 (1983): 311-356.
- _____. *Distinction: A Social Critique of the Judgement of Taste*, Cambridge, MA: Harvard University Press, 1984 [1979].
- Cohen, Noam. 'A Contributor to Wikipedia Has his Fictional Side', *New York Times* (5 March, 2007): C15.
- De Certeau, Michel. *Heterologies: Discourses on the Other*, Manchester: Manchester University Press, 1986.
- Finkelstein, Seth. 'Inside, Wikipedia Is more like a Sweatshop than Santa's Workshop', The Guardian weblog, 6 December, 2007, <http://www.guardian.co.uk/technology/2007/dec/06/wikipedia>
- Forte, Andrea and Amy Bruckman. 'Scaling Consensus: Increasing Decentralisation in Wikipedia Governance', in *Proceedings of HICSS* (2008): 157-166.
- Garfinkel, Harold. *Studies in Ethnomethodology*, Englewood Cliffs, NJ: Prentice Hall, 1969.
- Geiger, Stuart. 'Bot Politics: The Domination, Subversion, and Negotiation of Code in Wikipedia', Critical Point of View Conference, Amsterdam, 26-27 March, 2010.
- Glott, Rüdiger and Ghosh, Rishab. 'Analysis of Wikipedia survey. Topic: Age and Gender Differences', UNU-Merit, 2010. <http://www.wikipediastudy.org/>
- Hansen Sean, Berente, Nicholas and Lyytinen, Kalle. 'Wikipedia, Critical Social Theory and the Possibility of Rational Discourse', *The Information Society* 25.1 (2009): 38-59.

- Herring, Susan. 'Linguistic and Critical Analysis of Computer-Mediated Communication: Some Ethical and Scholarly Considerations', *The Information Society* 12.2 (1996): 153-168.
- _____. 'The Rhetorical Dynamics of Gender Harassment On-line', *The Information Society* 15.3 (1999): 151-167.
- Hoffman Paul and Harris, Susan. 'The Tao of the IETF: A Novice's Guide to the Internet Engineering Task Force'. RFC 4677, 30 November, 2009, <http://www.ietf.org/tao.html>
- King, Storm. 'Researching Internet Communities: Proposed Ethical Guidelines for the Reporting of Results', *The Information Society* 12.2 (1996): 119-128.
- Kittur, Aniket, Suh, Bongwon, Pendleton, Bryan and Chi, Ed. 'He Says, She Says: Conflict and Coordination in Wikipedia', in *Proceedings of the Conference on Human Factors in Computing Systems*, San José, CA, 28 April-3 May 2007, pp. 453-462.
- Lawley, Elizabeth. 'The Sociology of Culture in Computer-Mediated Communication: An Initial Exploration' (1994), <http://www.itcs.com/elawley/bourdieu.html>
- Lemley, Mark A. 'The Law and Economics of Internet Norms', *Chicago-Kent Law Review* 73 (1997): 1257-1294.
- Levy, Steven. *Hackers: Heroes of the Computer Revolution*, Garden City, NY: Doubleday, 1984.
- Loubser, Max. 'Wikipedia Governance: Are Administrators a "Big Deal"?', in Ziewitz, Malte and Pentzold, Christian (eds) *Modes of Governance in Digitally Networked Environments. A Workshop Report*, Oxford Internet Institute, 2010: 21-24.
- Macek, Steve. 'Divergent Critical Approaches to New Media', *New Media & Society* 8.6 (2006): 1031-1038.
- Maltz, Tamir. 'Customary Law and Power in Internet Communities', *Journal of Computer-Mediated Communication* 2.1 (1996).
- Meretz, Stefan and Merten, Stefan. 'Germ From Theory - Conceptual Overview', under review.
- Mnookin, Jennifer L. 'Virtual(ly) Law: The Emergence of Law in LambdaMOO', *Journal of Computer-Mediated Communication* 2.1 (1996).
- Moeller, Erik. 'Call for Volunteers: Wikimedia Research Committee', Post to Wiki-Research list, 2 August, 2010.
- O'Mahony, Siobhán and Ferraro, Fabrizio. 'The Emergence of Governance in an Open Source Community', *Academy of Management Journal* 50.5 (2007): 1079-1106.
- O'Neil, Mathieu. 'Rebels for the system? Virus Writers, General Intellect, Cyberpunk and Criminal Capitalism', *Continuum: Journal of Media & Cultural Studies* 20:2 (2006): 225-241.
- _____. *Cyberchiefs: Autonomy and Authority in Online Tribes*, London: Pluto, 2009.
- _____. 'Shirky and Sanger, or the Costs of Crowdsourcing', *Journal of Science Communication* 9.1 (2010). [http://jcom.sissa.it/archive/09/01/Jcom0901\(2010\)C01/Jcom0901\(2010\)C04](http://jcom.sissa.it/archive/09/01/Jcom0901(2010)C01/Jcom0901(2010)C04)
- _____. 'Critiques of Separation: Leadership in Online Radical-Prosumer Projects', under review.
- _____. 'Organisation without Domination', under review.
- Ortega, Felipe, Izquierdo-Cortazar, Daniel, Gonzalez-Barahona, Jesus M. and Robles, Gregorio. 'On the Analysis of Contributions from Privileged Users in Virtual Open Communities', in *Proceedings of the 42nd Hawaii International Conference on System Sciences* (2009).

Mathieu O'Neil, submitted January 2011.

Perritt, Henry. 'Cyberspace Self-Government: Town-Hall Democracy or Rediscovered Royalism?', *Berkeley Technology Law Journal* 12 (1997): 413-482.

Reagle, Joseph. 'Do as I do: Authorial Leadership in Wikipedia, in WikiSym 07: Proceedings of the 2007 International Symposium on Wikis (2007).

Ross, Sage. 'Review of *Cyberchiefs: Autonomy and Authority in Online Tribes*', *The Wikipedia Signpost*, 15 June 2009. http://en.wikipedia.org/wiki/Wikipedia:Wikipedia_Signpost/2009-06-15/Book_review

_____. Comments to Mathieu O'Neil, 'Wikipedia and Google', P2P Foundation weblog, July 10, 2009, <http://blog.p2pfoundation.net/wikipedia-and-google/2009/07/10>.

_____. Email message to the author, 2010.

Santana, Adele and Wood, Donna. 'Transparency and Social Responsibility Issues for Wikipedia', *Ethics and Information Technology* 11.2 (2009): 133-144.

Sanger, Larry. 'The Fate of Expertise after Wikipedia', in Ziewitz, Malte and Pentzold, Christian (eds) *Modes of Governance in Digitally Networked Environments. A Workshop Report*, Oxford Internet Institute, 2010: 21-24', *Episteme* 6.1 (2009): 52-73.

Siefkes, Christian. *From Exchange to Contributions. Generalizing Peer Production into the Physical World*. Berlin: Edition C. Siefkes, 2007.

Suh, Bongwon, Convertino, Gregorio, Chi, Ed, and Pirolli, Peter. 'The Singularity is Not Near: Slowing Growth of Wikipedia?', WikiSym 09: Proceedings of the 2009 International Symposium on Wikis (2009).

Trom, Danny. 'La Crise de la Critique Sociale Vue de Paris et de Francfort', *Esprit* 7 (2008): 108-126.

User:Amerique, 'User Talk: Community recall', *Wikipedia*.

User:Jimbo_Wales, 'User Talk: Community recall', *Wikipedia*.

Viégas, Fernanda B., Wattenberg, Martin, and Dave, Kushal. 'Studying Cooperation and Conflict Between Authors with History Flow Visualisations', CHI 2004, Vienna, 24-29 April, 2004.

Waskul, Dennis and Mark Douglass. 'Considering the Electronic Participant: Some Polemical Observations on the Ethics of On-line Research', *The Information Society* 12.2 (1996): 129-140.

Weber, Max, *Economy and Society: An Outline of Interpretive Sociology*, Berkeley, Los Angeles and London: University of California Press, 1978 [originally published 1922].

Wikipedia. 'Wikipedia is not a bureaucracy', 2010. http://en.wikipedia.org/wiki/What_Wikipedia_is_not