TWEETS AND TRUTH
Journalism as a discipline of collaborative verification

Alfred Hermida

This paper examines how social media are influencing the core journalistic value of verification. Through the discipline of verification, the journalist establishes jurisdiction over the ability to objectively parse reality to claim a special kind of authority and status. Social media question the individualistic, top-down ideology of traditional journalism. The paper considers journalism practices as a set of literacies, drawing on the theoretical framework of new literacies to examine the shift from a focus on individual intelligence, where expertise and authority are located in individuals and institutions, to a focus on collective intelligence where expertise and authority are distributed and networked. It explores how news organizations are negotiating the tensions inherent in a transition to a digital, networked media environment, considering how journalism is evolving into a tentative and iterative process where contested accounts are examined and evaluated in public in real-time.

Introduction

Facts, truth and reality are what Zelizer (2004) describes as the "god terms" in journalism. As a profession, journalists have established their jurisdictional authority to claim them. The discipline of verification is at the core of this structural claim to statement of authority, setting journalism apart from other forms of communication. This paper discusses how socialized or communalized media (Jenkins, 2006) are reshaping the discipline of verification in journalism. Through the discipline of verification, journalists determine the truth, accuracy, or validity of news events, establishing jurisdiction over the ability to objectively parse reality to claim a special kind of authority and status. Social media question the individualistic, top-down ideology of traditional journalism, subverting journalism's claim to a monopoly on the provision of everyday public knowledge.

Digital media technologies such as Twitter facilitate the instant, online dissemination and reception of short fragments of information from sources outside the formal structures of journalism. Open, networked digital media tools challenge the individualistic, top-down ideology of traditional journalism (Deuze, 2008), while services like Twitter question a news culture based on individual expert systems over knowledge-sharing (Singer, 2003). The impact of social media on the definition of authority is not just affecting the profession of journalism, but also the fields of academic knowledge (Lih, 2004) and medicine (Boulos, 2006).

The development of social networks for real-time news and information, and the integration of social media content in the news media, creates tensions for a profession based on a discipline of verification. This paper suggests that social media services such as Twitter provide platforms for collaborative verification, based on a system of media that

privileges distributed over centralized expertise, and collective over individual intelligence. It considers the interaction between well-established, hierarchical structures of news production and emergent, networked media systems. It focuses on the discipline of verification given its core role in defining the essence of journalism. Journalists' concerns about the validity and accuracy of information on Twitter can be understood as an expression of an occupational culture that seeks to maintain jurisdiction over certain discursively, culturally, and epistemologically constructed forms of expertise. Through an exploratory discussion of the influence of collaborative verification on journalistic norms and practices, this paper seeks to understand how one of the pillars of journalism is evolving.

Social Awareness Streams

Twitter is one of a set of digital communication tools and services usually identified by the blanket phrase of social media. Social media is a nebulous term since it can refer to an activity, a software tool or a platform. Moreover, all media have, to some extent, a social element (Donath, 2004). Harrison and Barthel suggest that the significance of social media lies in the ability of "vastly more users to experiment with a wider and seemingly more varied range of collaborative creative activities" (2009, p. 174). For Hardey, what is important is that these media technologies are "*inherently* social so that users are central to both the content and form of all material and resources" (2007, p. 870, emphasis in original). The attributes of social media—participation, openness, conversation, community and connectivity—are largely at odds with the one-way, asymmetric model of communication that characterized media in the twentieth century.

The paper focuses on the social messaging service, Twitter, as it has flourished as a network for real-time news and information since its creation in 2006 and is affecting the way news is gathered, disseminated and consumed (Bruno, 2011; Hermida, 2010a; Lasorsa et al., 2012; Newman, 2009). Twitter describes itself as "a real-time information network that connects you to the latest information about what you find interesting" (Twitter, nd). Users can share "tweets" of 140 characters or less, and tag messages by using the "hash tag". The hash convention means messages on a particular topic can be identified, tracked and grouped to reflect what new or newsworthy issues are capturing people's attention on Twitter at any one time, displaying the aggregate interests and attention of these groups of users.

Twitter and related social media platforms such as Facebook are social awareness streams (Naaman et al., 2011), where users share content such as status updates, links, photos, and videos. By March 2011, an average of 140 million daily messages were circulating on Twitter (Twitter, 2011), potentially providing a constantly updated representation of the lives, interests and opinions of the users of the service. Social awareness streams have been described as "ambient journalism", where the journalism itself becomes fragmented and omnipresent, with contributions from both journalists and non-journalists (Burns, 2010; Hermida, 2010a, 2010b).

Ambient journalism conceptualizes Twitter as an awareness system where multi-faceted, real-time digital networks enable the flow of news and information in the periphery of a user's awareness. As ambient journalism, Twitter provides a mix of news, information and comment, usually connected to current reality, but without an established order. As a result, journalism is not just in the process of negotiating a shift to a

digital media environment, but more significantly to a networked one (Singer, 2010). The next section explores the nature of this shift by examining the discipline of verification and how it relates to the construction of professional identity.

The Discipline of Verification

The notion of the journalist as the verifier of news and information is at the core of journalism as a system of knowledge production and central to a structural claim to expert status and statement of authority. Zelizer argues "journalism's presumed legitimacy depends on its declared ability to provide an indexical and referential presentation of the world at hand" (2004, p. 103). She states that journalists distinguish what they do from other forms of public communication by claiming an ability to interpret and represent reality.

The presumed ability to represent reality allows journalists to claim a special kind of authority and establish professional jurisdiction over the news (Schudson and Anderson, 2009). However, the role of journalists as professionals who decide all the news that's fit to print is under pressure. Schudson and Anderson note that "in an era of cellphone, camera phone and blog, jurisdictional questions will be legion" (2009, p. 98). They note that bloggers now receive press credentials, though they were once considered as trespassers by mainstream journalists.

In his study of professions, Abbott (1988) defines jurisdiction as the way a profession both establishes and displays its base of abstract knowledge. In the case of journalism, the knowledge can be considered as less abstract and more based on what reporters and editors do to maintain their special position. Professional jurisdiction comes from the daily routines that display and cement abstract knowledge. Journalistic authority is discursively constructed by what journalists do and how they do it, rather than simply by what they know; "journalistic professionalism is established as much by the representation of knowledge as by the actual possession of knowledge" (Zelizer, 1992, p. 97).

In their seminal 2001 work, *The Elements of Journalism*, Kovach and Rosenstiel outlined the traits or values that contribute to the professional self-definition, declaring the discipline of verification as "the essence of journalism" (2001, p. 71). Discussing professional identify, Singer (2003) highlights how one of the most widely recognized codes of journalism ethics in the United States urges journalists to seek to report the truth fairly and honestly. It is hardly surprising, then, that journalism has "a preoccupation with something called 'truth'" (Zelizer, 2004, p. 101), with a duty to collect and certify the accuracy of information. The practice of verification bestows journalistic communication with its credibility and believability.

The acceleration of the news cycle and proliferation of news and information has raised concerns about the erosion of the discipline of verification, and by implication, the professional legitimacy of journalism. Kovach (2006) encapsulated these fears when he wrote that "from the moment 24/7 digital news was introduced the process of verification—the beating heart of credible journalism in the public interest—has been under challenge". The emergence of Twitter as a source for breaking news, and the speed at which information is disseminated on the network, is placing further strain on established journalistic practices. Writing in the early days of the Internet and before the appearance of social media, Newhagen and Levy asserted, "it is difficult to imagine how

this verification function might work in a distributed [communication] architecture," suggesting, "the burden of verification may thus shift back to the audience" (1997, p. 17).

Reframing Verification

A networked, distributed architecture of communication does not require an abandonment of the discipline of verification. Rather, journalism practices can be understood as a set of literacies that are socially recognized ways of generating, communicating and negotiating meaningful content through the medium of encoded texts within contexts of participation in discourses. These literacies have been informed by the standards of routines, rituals, and practices set by print journalism.

New literacies researchers argue that as new technology develops, new literacies emerge (Lankshear and Knobel, 2007; Prinsloo, 2005). With social media, journalism is contemplating new literacies that "integrate written, oral and audiovisual modalities of interactive human communication within screen-based and networked electronic systems" (Prinsloo, 2005, p. 1). New literacies scholars propose a shift from a focus on individual intelligence, where expertise and authority are located in individuals and institutions, to a focus on collective intelligence where expertise and authority are distributed and networked (Lankshear and Knobel, 2007). New literacies prize participation over publication, innovation over stability and relationships over broadcast. This framework can be applied to journalism to investigate how constructs of professional identity shaped by long-held norms and practices are being refashioned by the architectures of distributed, networked digital technologies. Applied to the discipline of verification, a new literacies approach suggests journalists adopt a more collaborative method to determining the truth that, in theory, could be reached through an iterative process played out on networks such as Twitter.

Kovach and Rosenstiel explain how journalistic truth is a "continuing journey toward understanding—which begins with the first-day stories and builds over time" (2001, p. 43). The process would habitually take place within the newsroom, whereas Anderson states, "at least theoretically, the Internet opens up space for the generation of new systems of networked authority" (2008, p. 262). Potentially then, Twitter offers one such system, where fragments of information are reported, contested, denied or verified in the open, involving both professional journalists and the public. Making the case for a journalism of verification, Kovach (2006) argues "journalists must find tools that will enlist a methodology of verification in a more citizen-oriented way" and asks how can "citizens become active participants in a community of verification and discussion?" The next section presents an overview of some of the ways that journalists and news organizations are incorporating novel tools and techniques, specifically Twitter, and how these practices are affecting the discipline of verification.

Twitter in Journalism

There is a growing body of work into how Twitter and similar real-time social messaging tools are shaping, and are being shaped by, established journalistic norms and practices. Twitter has been widely adopted by the news media. By 2010, all but one of the top 198 newspapers and TV stations in the United States had an official Twitter account

(Messner et al., 2011). The accounts of leading media outlets such as the *New York Times* and CNN have accrued millions of followers (Lasorsa et al., 2012), offering a ready-made distribution network for content. Research has found that many newsrooms have used Twitter as an automated feed of the latest news stories (Blasingame, 2011; Messner et al., 2011). The ability to send short bursts of information in real-time has been taken up by journalists as a way to post snippets of news and to share and send links to their material. The real-time nature of Twitter holds particular appeal for print reporters as it offers a way to compete online for audiences with the immediacy of live broadcast coverage of news.

Twitter has also been adopted as a mechanism for user-generated content, tapped by news organizations for gathering eyewitness reports as events unfold in real-time. Real-time messages from the public are seen as filling the news vacuum that tends to characterize the immediate aftermath of a breaking news event. There are numerous instances in which social media have played a prominent role in the reporting of major news events, from the 2008 Chinese earthquake to the 2010 Haiti quake to the 2011 uprisings in the Middle East (see Bruno, 2011; Newman, 2009). Twitter users take on the role of social sensors of the news (Sakaki et al., 2010), functioning as an early warning detection system for breaking news, and then delivering a stream of real-time data as events unfold. Bruno uses the term "the Twitter effect" to describe the publication and distribution of citizen media, suggesting that "the Twitter effect allows you to provide live coverage without any reporters on the ground, by simply newsgathering user-generated content available online" (2011, p. 8).

The development of Twitter as a channel for breaking news and the use of material from the public in professionally edited publications poses a dilemma for a profession based on a discipline of verification. Critics point to the amount of unsubstantiated material on Twitter, questioning the credibility of messages. "One function of mainstream media journalism is to disseminate information we've determined to be reliable," contends James (2009), arguing that "the reliance on Twitter and Facebook is essentially throwing the doors open to everything and anything."

News organizations and journalists are negotiating the tensions between verification and publication, given the emergence of social media as channels for breaking news, and the speed at which information is disseminated on the network. For Gowing, journalists have to decide "when to take on the tyranny of the time and intervene with real-time information, even if it is incomplete, possibly flaky and probably cannot be verified with 100 per cent accuracy?" (2009, p. 30). Striking a balance between being first and being right is not new, as journalists have long had to find "the right balance between speed and accuracy, between being comprehensive and being merely interesting" (Meyer, 2004, p. 89).

Emerging Approaches to Verification

There are indications that some areas of journalism are edging towards a discipline of collaborative verification, based on a new literacies approach of distributed and networked expertise. News organizations are developing new online storytelling methods to take account of the real-time flow of news and information on social networks, particularly in the coverage of breaking news events. Major news organizations such as the BBC, the *New York Times* and the *Guardian* have published accounts of breaking news

events in "live updates" pages that combine unverified social media content and authenticated professional reports.

The live updates pages, also called the live blog format, have been described by Newman (2010) as one of the emerging innovations of 2010, offering a dynamic, interactive and multimedia rendition of events. Seen through the lens of new literacies research, the format is more collaborative, distributed, fluid and less author-centric than other forms of journalism. The journalistic intent behind a live page is not to produce a definitive and authoritative version of an event but to provide a mechanism to reflect "the unfolding truth in all its guises" (Herrmann, quoted in Newman, 2009, p. 9).

While more research is required in the use of the live blog format, there are indications of a fluid approach towards verification. An analysis of coverage of the 2010 Haiti earthquake by the BBC, CNN and the *Guardian* found that only the BBC consistently sought to verify information on social media before publication (Bruno, 2011). Bruno suggests that this strategy "seems very dangerous for one of journalism's golden rules: each news story must be verified first" (2011, p. 66). Weaver contends that audiences have a different set of expectations from a live blog compared to an article authored by a correspondent. "On a live blog you are letting the reader in on what's up there, and say: look, we're letting you in on the process of newsgathering. There's a more fluid sense of what's happening" (Weaver, quoted in Bruno, 2011, p. 44). Furthermore, reporting on a BBC social media conference in May 2011, Posetti (2011) suggests there is "a view within the mainstream media that audiences have lower expectations of accuracy and verification from journalists' and media outlets' social media accounts than they do of 'appointment TV' or the printed page."

Such a strategy is not without consequences. In its rolling news coverage of the 2008 Mumbai attacks, the BBC News website brought together accounts from its own correspondents with contributions from the public, including unverified tweets. One false message, allegedly from the Indian government, asked Twitter users to stop posting about police and military operations. The BBC conceded it should have checked the information, or at the very least indicated it was unverified. But BBC News website Editor Steve Herrmann (2008) argued "there is a case also for simply monitoring, selecting and passing on the information we are getting as quickly as we can, on the basis that many people will want to know what we know and what we are still finding out."

However, it is important to note that there are few signs that journalism has, as a profession, embraced the notion of sharing jurisdiction over the news and over the process of verification. Instead, research suggests that mainstream news outlets have adopted an opportunistic model, tapping social media to fulfil a need for information from a location until professional journalists arrived on the scene, hours or even days later. Bruno found that the use of social media content by news organizations following the Haiti earthquake was "virtually non-existent" once the reporters reached the location (2011, p. 66).

Additionally, journalists appear hesitant to rely on social networks to source and verify information. A survey of 500 journalists in 15 countries found that almost half the respondents used Twitter to source angles for a news story (Oriella PR Network, 2011). But only a third said they used social media to verify a story or check a fact. Most relied on traditional sources such as PR agencies and corporate spokespeople. Established social systems of verification, honed over the years by journalists, still hold sway, despite concerns that journalism is too dependent on such institutional voice.

Conclusion

Journalists seek to represent current events by creating products with a fixed order and hierarchy. Twitter, by comparison, provides a medium for a mix of news and information without an established order. Twitter and other social media platforms are shared media spaces that chafe against what Zelizer describes as "the meanings, symbols and symbolic systems, ideologies, rituals, and conventions by which journalists maintain their cultural authority as spokespeople for events in the public domain" (2004, p. 101). The tensions are symptomatic of the transition of journalism not just to a digital, but also to a networked environment (Singer, 2010).

Verification is widely considered to be at the heart of the occupational ideology of journalism. Yet, as Brennen contends, "facts are messy, difficult to determine and they are often dependent on interpretation" (2009, p. 301). The process of determining the facts traditionally took place in newsrooms, away from the public eye, as journalists considered conflicting reports, weighed up incoming information and made decisions on what to publish. Arguably, some of the process of journalism is taking place in public on platforms such as Twitter.

There is scope for more research into how practices of verification are being influenced and reshaped by social media. This paper has explored social media systems where, in theory, the cultural production and control of knowledge is shared, as is the practice of objectively parsing reality. The aim is to provide a basis for further research into the interplay between social media and the central construct of the journalist as the verifier of information, in particular the effect of an iterative and collaborative approach on accuracy and credibility.

Networked media systems provide, in theory, a means into "the knowledge of particular circumstances of time and place" (Hayek, 1945, p. 519). Social awareness streams unbundle a news story into its individual components. News is omnipresent in the form of unstructured data, coming in fragments of raw, unprocessed journalism from both professionals and the public. Contradictory reports, rumors, speculation, confirmation and verification circulate via social interaction in a compressed news cycle on Twitter. News and information is published, disseminated, confirmed or refuted in public through a process facilitated by social media.

Though the established news media tend not to realize the potential of new technologies (Boczkowski, 2004; Deuze, 2003; Quandt, 2008), there are some indications of how journalism's claim to determine how things really happened is being refashioned by social media. The live blog format suggests that the news media are experimenting with a more iterative and collaborative approach to reporting and verifying the news, albeit within certain prescribed scenarios and environments.

Social media may also be reframing the role of the journalist. Newman notes the emergence of "multi-media writers and curators, who can synthesize events in real-time with the best of the backchannel from social media" (2010, p. 10). Bruno suggests that as social media are increasingly woven into newsgathering, there will be a growing need for "reporter-curators", who "will take advantage of novel 'verification technologies' that will be increasingly faster and more reliable and advanced" (2011, p. 67). Such a role re-imagines the function of a curator, who traditionally has been a trained expert who selects and displays in a meaningful way the finest examples out of a select collection of precious objects (Hogan and Quan-Hasse, 2010). With social media, the curator is distilling an abundance of data on the fly. To date, Andy Carvin, a social media strategist at

NPR in the United States, is the most prominent example of the journalist as social media curator. The role of the media professional is to navigate, sift, select and contextualize the vast amounts of data on social awareness streams such as Twitter. Carvin's Twitter stream has been described as "a living, breathing real-time verification system" (Silverman, 2011).

The role represents a tacit acknowledgement that, as Deuze suggests, "instead of having some kind of control over the flow of (meaningful, selected, fact-checked) information in the public sphere, journalists today are just some of the many voices in public communication" (2008, p. 12). In the role of curator, the media professional lays bare the manner through which a news story is constructed, as fragments of information are contested, denied or verified. Journalism is less of a final product presented to the audience as a definitive rendering of events than a tentative and iterative process where contested accounts are examined and evaluated in public in real-time.

REFERENCES

ABBOTT, ANDREW (1988) *The System of Professions: an essay on the division of expert labor*, Chicago: University of Chicago Press.

ANDERSON, CHRIS (2008) "Journalism: expertise, authority, and power in democratic life", in: David Hesmondhalgh and Jason Toynbee (Eds), *The Media and Social Theory*, Abingdon: Routledge, pp. 248–64.

BLASINGAME, DALE (2011) "Twitter First: changing TV news 140 characters at a time", paper presented to the International Symposium on Online Journalism, Austin, TX, April, http://online.journalism.utexas.edu/2011/papers/Dale2011.pdf, accessed 10 June 2011.

BOCZKOWSKI, PABLO (2004) *Digitizing the News: innovation in online newspapers*, Cambridge, MA: MIT Press.

BOULOS, MAGED, MARAMBA, INOCENCIO and WHEELER, STEVE (2006) "Wikis, Blogs, and Podcasts: a new generation of web-based tools for virtual collaborative clinical practice and evaluation", *BMC Medical Education* 6(41), pp. 41–7.

BRENNEN, BONNIE (2009) "The Future of Journalism", *Journalism*, 10, pp. 300–2.

BRUNO, NICOLA (2011) "Tweet First, Verify Later: how real-time information is changing the coverage of worldwide crisis events", Oxford: Reuters Institute for the Study of Journalism, University of Oxford, http://reutersinstitute.politics.ox.ac.uk/fileadmin/documents/Publications/fellows__papers/2010-2011/tweet_first_verify_later.pdf, accessed 10 June 2011.

BURNS, ALEX (2010) "Oblique Strategies for Ambient Journalism", *M/C Journal* 13(2), http://journal.mediaculture.org.au/index.php/mcjournal/article/view/Article/230L, accessed 10 June 2011.

DEUZE, MARK (2003) "The Web and Its Journalisms: considering the consequences of different types of newsmedia online", *New Media and Society* 5(2), pp. 203–30.

DEUZE, MARK (2008) "Understanding Journalism as Newswork: how it changes, and how it remains the same", *Westminster Papers in Communication and Culture* 5(2), pp. 4–23.

DONATH, JUDITH (2004) "Sociable Media", in: William Sims Bainbridge (Ed.), *The Encyclopedia of Human–Computer Interaction*, Great Barrington, MA: Berkshire Publishing Group, pp. 627–33.

GOWING, NIC (2009) "Skyful of Lies and Black Swans: The New Tyranny of Shifting Information Power in Crisis", Challenges Papers, Oxford: Reuters Institute for the Study of Journalism,

University of Oxford, http://reutersinstitute.politics.ox.ac.uk/publications/risj-challenges/skyful-of-lies-black-swans.html, accessed 10 June 2011.

HARDEY, MICHAEL, M. (2007) ''The City in the Age of Web 2.0: a new synergistic relationship between place and people'', *Information, Communication and Society* 10(6), pp. 867–84.

HARRISON, TERESA M. and BARTHEL, BREA (2009) ''Wielding New Media in Web 2.0: exploring the history of engagement with the collaborative construction of media products'', *New Media & Society* 11(1/2), pp. 155–78.

HAYEK, FRIEDRICH A. (1945) ''The Use of Knowledge in Society'', *American Economic Review* XXXV, pp. 519–30.

HERMIDA, ALFRED (2010a) ''Twittering the News'', *Journalism Practice* 4(3), pp. 297–308.

HERMIDA, ALFRED (2010b) ''From TV to Twitter: how ambient news became ambient journalism'', *M/C Journal*, 13(2), http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/220, accessed 10 June 2011.

HERRMANN, STEVE (2008) ''Mumbai, Twitter and Live Updates'', BBC The Editors, 2 December, http://www.bbc.co.uk/blogs/theeditors/2008/12/theres_been_discussion_see_eg.html, accessed 10 June 2011.

HOGAN, BERNIE and QUAN-HAASE, ANABEL (2010) ''Persistence and Change in Social Media'', *Bulletin of Science, Technology & Society* 30(5), pp. 309–15.

JAMES, FRANK (2009) ''Which Tweets from Iran Are True?'' NPR, 17 June, http://www.npr.org/blogs/thetwo-way/2009/06/which_tweats_from_iran_are_tru.html, accessed 25 June 2011.

JENKINS, HENRY (2006) *Convergence Culture: where old and new media collide*, New York: New York University Press.

KOVACH, BILL (2006) ''Toward a New Journalism With Verification'', Nieman Reports, Winter 2006, http://www.nieman.harvard.edu/reports/article/100292/Toward-a-New-Journalism-With-Verification.aspx, accessed 7 June 2011.

KOVACH, BILL and ROSENTIEL, TOM (2001) *The Elements of Journalism*, New York: Crown Publishers.

LANKSHEAR, COLIN and KNOBEL, MICHELE (2007) ''Sampling 'the New' in New Literacies'', in: Colin Lankshear, Michele Knobel, Chris Bigum and Michael Peters (Eds), *A New Literacies Sampler*, New York: Peter Lang, pp. 1–24.

LASORSA, DOMINIC L., LEWIS, SETH C. and HOLTON, AVERY E. (2012) ''Normalizing Twitter: journalism practice in an emerging communication space'', *Journalism Studies* 13(1), pp. 19–36.

LIH, ANDREW (2004) ''Wikipedia as Participatory Journalism: reliable sources? Metrics for evaluating collaborative media as a news resource'', paper presented to the International Symposium on Online Journalism, Austin, TX, April, http://online.journalism.utexas.edu/2004/papers/wikipedia.pdf, accessed 10 June 2011.

MESSNER, MARCUS, LINKE, MAUREEN and ESFORD, ASRIEL (2011) ''Shoveling Tweets: an analysis of the microblogging engagement of traditional news organizations'', paper presented to the International Symposium on Online Journalism, Austin, TX, April, http://online.journalism.utexas.edu/2011/papers/Messner2011.pdf, accessed 10 April 2011.

MEYER, PHILIP (2004) *The Vanishing Newspaper: saving journalism in the information age*, Columbia: University of Missouri.

NAAMAN, MOR, BECKER, HILA and GRAVANO, LUIS (2011) ''Hip and Trendy: characterizing emerging trends on Twitter'', *Journal of the American Society for Information Science and Technology* 62(5), pp. 902–18.

NEWHAGEN, JOHN E. and LEVY, MARK R (1997) ''The Future of Journalism in a Distributed Communication Architecture'', in: Diane L Borden and Kerric Harvey (Eds), *The Electronic Grapevine: rumor, reputation, and reporting in the new on-line environment*, Hillsdale, NJ: Lawrence Erlbaum Publishers, pp. 9–22.

NEWMAN, NIC (2009) ''The Rise of Social Media and Its Impact on Mainstream Journalism'', Oxford: Reuters Institute for the Study of Journalism, University of Oxford, http://reutersinstitute. politics.ox.ac.uk/fileadmin/documents/Publications/The_rise_of_social_media_and_its_ impact_on_mainstream_journalism.pdf, accessed 15 January 2011.

NEWMAN, NIC (2010) ''Journalism and Technology Predictions 2011'', The Media Briefing, http://www.themediabriefing.com/resource/media-market-journalism-and-technology-predictions-2011-by-nic-newman, accessed 15 July 2011.

ORIELLA PR NETWORK (2011) ''The State of Journalism in 2011'', http://www.orielladigitaljournalism. com/, accessed 12 June 2011.

POSETTI, JULIE (2011) ''BBC Social Media Summit Fixates on Creating 'Open Media''', PBS Mediashift, 7 June, http://www.pbs.org/mediashift/2011/06/bbc-social-media-summit-fixates-on-creating-open-media158.html, accessed 7 June 2011.

PRINSLOO, MASTIN (2005) ''The New Literacies as Placed Resources'', *Perspectives in Education* 2(4), pp. 87–98.

QUANDT, THORSTEN (2008) ''(No) News on the World Wide Web?'', *Journalism Studies* 9(5), pp. 717–38.

SAKAKI, TAKESHI, OKAZAKI, MAKOTO and MATSUO, YUTAKA (2010) ''Earthquake Shakes Twitter Users: real-time event detection by social sensors'', in: *Proceedings of the 19th International Conference on World Wide Web*, New York: ACM, pp. 851–60.

SCHUDSON, MICHAEL and ANDERSON, CHRIS (2009) ''News Production and Organizations: professionalism, objectivity and truth-seeking'', in: Karin Wahl-Jorgensen and Thomas Hanitzsch (Eds), *The Handbook of Journalism Studies*, New York: Lawrence Erlbaum, Routledge, pp. 88–101.

SILVERMAN, CRAIG (2011) ''Is This the World's Best Twitter Account?'', *Columbia Journalism Review*, 8 April, http://www.cjr.org/behind_the_news/is_this_the_worlds_best_twitter_account. php, accessed 10 June 2011.

SINGER, JANE B. (2003) ''Who Are These Guys? The online challenge to the notion of journalistic professionalism'', *Journalism* 4(2), pp. 139–63.

SINGER, JANE B. (2010) ''Journalism in the Network'', in: Stuart Allan (Ed.), *The Routledge Companion to News and Journalism*, New York: Routledge, pp. 277–86.

TWITTER (nd) ''About'', http://twitter.com/about, accessed 10 June 2011.

TWITTER (2011) ''#numbers'', Twitter blog, 14 March, http://blog.twitter.com/2011/03/numbers. html, accessed 10 June 2011.

ZELIZER, BARBIE (1992) *Covering the Body: the Kennedy assassination, the media, and the shaping of collective memory*, Chicago: University of Chicago Press.

ZELIZER, BARBIE (2004) ''When Facts, Truth, and Reality Are God-terms: on journalism's uneasy place in cultural studies'', *Communication and Critical/Cultural Studies* 1(1), pp. 100–19.

Alfred Hermida, The Graduate School of Journalism, University of British Columbia, 6388 Crescent Road, Vancouver, BC V6T 1Z2, Canada. E-mail: alfred.hermida@ubc.ca