2018

Hacks, Hackers and the Expansive Boundaries of Journalism.

Nik Usher
nusher@sandiego.edu

Post-print; accepted manuscript

Hacks, Hackers, and the Expansive Boundaries of Journalism

Usher, N. (2018). Hacks, hackers, and the expansive boundaries of journalism. In *The Routledge handbook of developments in digital journalism studies* (pp. 348-359). Routledge.

Nikki Usher, PhD
The George Washington University
nusher@gwu.edu

4061

Abstract: Hacker journalism is a distinctive turn in journalism, whereby journalists who can program as well as programmers interested in journalism embrace foundational ideals of hacker culture and their intersection with journalism. Hacks Hackers is a distinct movement and grassroots organization that reflects this global impetus, whereby hacks (journalists) and hackers (programmers) come together to innovate journalism. Hacker journalism is distinct from data journalism, though there is terminological confusion and "interactive journalism" may be said to better reflect the convergence of sophisticated programming and editorial initiatives. Hacker journalism reflects an epistemological approach to journalism that is predicated on transparency, iteration, participation, and tinkering.

Keywords: data journalist, hacker journalist, open source, transparency, interactive journalism, programmer journalist, computer-assisted reporting

Main text

A hacker journalist is at once a type of journalist working in and around the news industry as well as a catch-phrase for a particular epistemology that melds the values of open source programming with journalism. The origins of the term "hacker journalism" are murky, and the epistemology of the hacker journalist pre-dates the term. US hacker journalist Brian Boyer claims that he invented the phrase "hacker journalist," and registered the domain hackerjournalism.net in 2008 (Usher, 2016); on his site, he promoted bringing hacking expertise to editorial content, imagined as journalists who would tell stories via code. While he may have coined the term, he was certainly not the first to embody a hacker journalism ethos aimed at disrupting journalism through the fusion of programmer values and skills with journalism values (see Cox, 2000; Reavy, 1996).

The hacker journalist, as imagined by journalists, scholars, and industry leaders, is an outgrowth of a historical arc bringing together programming, data, and journalism, as well as a long held programming philosophy that is inspired by transparency and collective co-construction. On the other hand, the hacker journalist is also reflective of a new era of programming sophistication on the Web and on mobile platforms, an evolution of computing that enables applications to be built on top of existing software and provides a user experience that is fast, easily navigable, clickable, and often, interactive, and also features sophisticated programming similar to that used by developers in Silicon Valley and other tech hubs (Bradshaw, 2017). Hacker journalism is not a universal phrase, in part because in certain regions of the world and in certain newsrooms, the connotation of hacker is anti-social (Usher, 2016), rather than reflective of the pro-social origins and aspirations of most hackers, who wish to use computing skills to do good (Coleman, 2012). Nonetheless, in practice and ideal, hacker journalism is found globally, via the Hacks Hackers grassroots organization, within newsrooms that blend editorial projects with code, as well as

at the boundaries and informal intersections of programming and journalism. It is a spirit which can be found in journalism and civic tech hackfests, meetups, and workshops, and various open data initiatives across the globe, including in Africa and South America (Felle, 2015), universities offering coding to journalists, and investigative journalism cross country collaborations, though in the West, and has fused within professional journalism culture.

Hacker journalism's beginnings

The arc of data journalism into news is slightly different, and rests more specifically on an approach aimed at bringing social science methods into journalism (see data journalism entry). That said, data journalism, particularly in Europe, is a term that can often reflects the hacker journalism orientations and values (Gray, Chambers, and Bounegru, 2012). In the US, a few central figures helped push hacker journalism forward, in particular Adrian Holovaty, who began creating early interactive and data projects in 2002 at the *Lawrence Journal World*. Holovaty hosted a blog that functioned as a clearing house for sharing experiments, job postings, and thoughts about the emerging field where programming skills were now valuable for editorial projects. His essay on "structured journalism" (2006) explained a foundational principle to understand the fusion of programming and journalism: that journalism itself as form and content could be thought of as structured data, whereby elements like leads, key phrases, headlines, bylines, photos, graphics, and beyond were the "metadata" of news. Holovaty was also credited with the first "mashup," which predated many of today's digital journalism mapping efforts, fusing then-new Google maps with crime data to show an interactive geographic distribution of crime in Chicago (this can now be done using Google's Fusion tables without any programming knowledge needed).

In 2007, the Knight Foundation, the largest US journalism philanthropy, funded scholarships at Northwestern University's Medill School of Journalism for programmers who were interested in becoming journalists. As discussed in Usher (2016), a slide by Knight Foundation illustrated the idealistic vision of the "Hacker Journalism," whereby the hacker would fuse with the traditional journalist to become "journalist 2.0" – on one side of the slide was the programmer/hacker, wearing headphones, a black t-shirt, jeans, and "chill clothes," and was described as a "problems solver, process oriented, and a builder." On the other side of the slide was the journalist, wearing dorky clothes- a shirt and tie under a buttoned cardigan, holding a reporter's notebook and wearing glasses. This traditional reporter had the words "Big Picture thinker, storyteller, wordsmith, contrarian, investigator" associated with him. And after journalism school or perhaps working in a newsroom, the hacker journalist would emerge, ready to innovate journalism as a "translator," "info distiller," "impactor," "data visualizer," and "pragmatist," now wearing a plaid shirt and holding a tablet (and notably, portrayed as a man with a beard, a favorite accoutrement of hacker programing culture, see Ensmenger, 2015.)

The rise of the hacker journalist was a global phenomenon. For future research, key historical figures include Paul Bradshaw, a journalist/academic, in the UK; in continental Europe, by Liliana Bounegru a journalist/academic working in the UK and Netherlands, Sascha Venohr, an editor then of Zeit Online in Germany, and Alberto Cairo, whose career spans Spanish and American newsrooms; in South America, Miguel Paz, a programmer journalist whose news startup aimed to show links via data between business and political elites; in the Middle East, Mohammed El-Haddad, then of Al Jazeera English; and in Africa, Catherine Gicheru, a Kenyan journalist focused on open government and Adi Eyal, a South African journalist, who created Africa's first data journalism academy.

In 2009, Hacks/Hackers, a grassroots group dedicated to bringing programmers (hackers) into conversation with traditionally-trained journalists (hacks), was formed in the US by hacker journalists in New York and San Francisco. It would shortly go global, and is now the largest organization of its kind, boasting more than 75 city-based chapters around the world and more than 23,000 members, though this is a rough count because it is a continuously evolving grassroots group. Hacks/Hackers aimed to foster discussions, hack days, social mixers, and beyond. The aspiration to bring together hacks and hackers has been considered by

academics and practitioners alike to be a critical part of the future of journalism, bringing important Web skills, new ways of thinking to journalism, and new opportunities for tools to improve investigative journalism (Lewis and Usher, 2014; Cohen, Hamilton, and Turner 2011; Flew et al. 2012).

Seeing the potential for programming to innovate journalism, top flight newsrooms around the world began assembling hacker journalism teams, though what professional titles to call these journalists was not clear and still has little consistency. These newsrooms brought together developers, data specialists, designers, user experience experts, and traditional editorial content producers and editors, among others. By 2009, *The New York Times* had dedicated hacker journalism experts scattered among a variety of news departments, the BBC's News Specials department (now BBC Visuals) had ramped up its productivity and its recruiting of programmers with interest in the BBC's mission, *The Guardian* launched its datablog, and El Pais was well on the way to producing breaking news interactive graphics.

Hacker journalism took on a new level of prominence in 2011 at MozFest in London, an international festival held by the Mozilla Foundation (related to the open source Web browser, Mozilla) in partnership with The Knight Foundation. This multiyear partnership, which began with US$2.5 million in 2011 and received additional funding thereafter, was created to develop open-source software innovations for news and apply them in some of the world's leading newsrooms (Lewis and Usher, 2016). At the 2011 MozFest, the five winners of a year-long, worldwide contest offering a fellowship for a programmer in five world class newsrooms were announced, all of whom were hackers interested in journalism but who had not previously spent much time in newsrooms. They would head to Al Jazeera English, Zeit Online, Boston.com, the BBC, and *The Guardian*.

The case for professionalizing and institutionalizing hacker journalism was increasingly clear. "Snow Fall: The Avalanche at Tunnel Creek," a 2012 *New York Times* project that won a Pulitzer Prize, was proof of concept that hacker journalism would and should be part of any newsroom hoping to remain relevant in the digital news environment; it brought together the best of old and new forms of journalism, showed that new readers would flock to these sorts of stories, and provided a boon to Web traffic. Also that year, Nate Silver, the data journalist wunderkind, was responsible for 25% of the newspaper's fourth quarter digital Web traffic, providing proof that data-driven news interactives were compelling to audiences.

Hacker journalism: Practice and Identity

Defining "hacker journalism" with some coherence has been difficult—with some scholars wondering whether it even makes sense to have a clear definition. Are these practitioners "computer-assisted reporters," "hacker journalists," "data journalists," "programmer journalists," "developers," "designers," "news nerds," "computational journalists" or something else (like "interactive journalists")? Are they doing "hacker journalism," "computational journalism," "data journalism," "multimedia storytelling," or "interactive storytelling?" Nonetheless, definitions and categorizations matter, as they are situated within the cultural context of journalism practice, journalistic identity, and a normative framework that may reflect a particular cognitive framework for understanding and creating journalism.

Powers (2012) argues that a multiplicity of discourses emerge as journalists technologically innovate, they define their work in ways that designate both novel technologies and alignment with journalism; however, this is uneven, and can be framed as disruptive, continuous, or opportunistic. Hacker journalism reflects this multi-vocality: as a sub-group of journalists who can have varying backgrounds (such as in technical or non-journalist fields), and varying skill sets (some might be ace programmers, while others might only focus on data acquisition), and have non-standard career pathways into journalism. Royal (2012) found that *Times* hacker journalists came from a variety of journalism and non-journalism backgrounds, described themselves by a variety of titles, and had a variety of expertise and duties within the newsroom, a finding replicated by Fink and Anderson (2015) across US newsrooms. Wibke and Rall (2013) argue that "data journalists" are comprised of programmers, journalists, and statisticians. Some consider the mastery of skills required in

order to define the field (Karlsen and Stavelin, 2014; Parasie and Daigral, 2013). Smit et al (2014) focus on journalists whose work consists of "information visualization" a term they argue refers to "all mental models of data" (p. 345), ultimately concluding that there is no perfect convergence of backgrounds working in this field. Applegran and Nygren (2012) use the term "data journalism" to discuss the combination of data analysis, programming and visualization.

However, others resist any definitional demarcation. DeMayer et. al (2015) argue for a discursive view of the term given the variety of identities and backgrounds of data journalists in French-speaking Belgium possess. The scholars conclude lack of coherence makes it difficult for these journalists to have a shared interpretive community. They find there is a divergence in attitudes toward data—as to whether the data is "ordinary" or doable by one person and within the normal temporal patterns of newswork, or whether the data is "thorough" or requiring the "collective mobilization of a range of skills (journalism, computer science, statistics, graphic design" (p. 441). Tredan (2014) argues that there is no perfect way nor any actual definition that articulates a coherent set of practical mastery. Along this line of thinking, Fink and Anderson (2014) has proposed thinking about data journalism as an "assemblage" –or that it is defined by the fluidity of material, cultural, and practice-based understandings.

"Hacker journalism" is not "data journalism," which may or may not invoke the kind of programming sophistication associated with advances in digital news storytelling and the associated hacker ideology, and instead may reflect the legacy of computer-assisted reporters who hoped to incorporate social science methods into journalism (Coddington, 2015). Holovaty is credited with coining "data journalism," and a number of "data journalism" handbooks (Bradshaw, 2013; Gray, Chambers, and Bounegru, 2012) and conferences use the moniker to describe skills associated with this high-level programming. Particularly within Europe, data journalism appears to be the predominant professional self-description for journalists who can program and who identify with hacker ethics, but it is also used as a self-descriptor by those who focus data analysis and visualization.

However, many journalists working in this space do not work with data at all—and in fact, may be coding in the service of an editorial project that has little to do with the visualization of quantitative information. Moreover, many of the technologists new to newsrooms are not data analysis, nor do they wish to be; similarly, many of the journalists working in this area are more interested in using programming to building novel solutions for storytelling that move far beyond structured data. Interactive quizzes, interactive storytelling that provides an immersive journalism experience replete with multimedia elements, news games, and beyond reflect a diversity in subject matter and in content that is not represented by "data journalism." What is really different about this subfield is the ability to create news applications that layer interactive features around data and storytelling in ways that prompt engagement from the user. Thus, in my comprehensive study of the field, found in *Interactive Journalism: Hackers, Data, and Code* (2016), I call hacker journalists "interactive journalists" and think more broadly about the convergence of hacks and hackers through a news production perspective, or what they create: "a visual presentation of storytelling through code for multilayers, tactile user control for the purpose of news and storytelling" (20).

Hacker journalism epistemology

One strategy to understand "hacker journalism" has been to look for epistemological differences as ways to delineate the subfield. Journalism's instability as a profession makes it malleable to influences from external professions and practices (Carlson, 2017), meaning that the entry of hacker journalism into the news industry creates the opportunity for new ways of thinking about journalism. Journalism can be considered a boundary object (Carlson and Lewis, 2015); boundary objects mean something to different to "different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation' (Star and Griesemer, 1989: 393). As such, journalism's inability to delineate bright lines around who "counts" or what is or is not journalism means that it is also a site of negotiation for and between various epistemologies, practices, and actors.

Research suggests hacker journalists self-identify as having a common ideological perspective: they embrace an underlying orientation toward open source culture and project development. Coddington (2015) maps these divisions around openness, epistemology, vision of public, and the professional orientation of journalists (for a helpful breakdown see p. 337). Parasie (2014) suggests that programming journalism (or "hacker journalism") offers an epistemological challenge to traditional journalism because it pushes journalistic work toward hypothesis and data-driven research rather than news that relies on normative assumptions. In Germany, Weinacht and Spiller (2014) find practical and epistemological differences in their study of "data journalists"/would-be hacker journalists: they have different skill sets and a tendency to view the audience as able to assist in developing new trends and ideas. Other scholars reject these findings, and looking at more data-driven journalists in Norway, Karlsen and Stavelin (2014) suggest that despite different skill sets, there were many epistemological similarities between the professional norms of data journalists and traditional journalists.

Lewis and Usher (2013) provide a review of how hacker culture intersects with journalism, first by explaining the epistemological approach of hackers more generally. Hackers share a penchant toward openness and open source in sharing code and "building on the shoulder of giants," a concept discussed in Eric Raymond's open source manifesto, *The Cathedral and the Bazaar.*" At the center of open source is the source code, or the kernel of programming script from which projects are developed; users can access, modify, and freely distribute the source code, thus allowing for a successful idea to scale quickly as it is copied elsewhere or modified by others (Wynants and Cornelis, 2005: 15, Stallman, 2002). Open source is both practical, as an approach to transparent and participatory coding, and a philosophy, built on peer-to-peer collaboration and collective intelligence (Levy, 1997). Moreover, open-source development is motivated less by proprietary, profit-driven control, and more by a communal interest in the greater good (Turner, 2005), which provides an inspiration to innovate without placing overemphasis on final financial success, though that is of course a welcome result. Other motivations include non-monetary forms of reward, such as reputation, play, and sense of belonging (Himanen, 2001)—for hacker journalists, programming inside a newsroom is not likely to be as remunerative as programming in other corporate sectors, and as such, open source culture provides a different appraisal of success.

In addition, hacker culture challenges journalism's established professional norms. Some of the first "hackers" and the first "hacks" came out of MIT in the 1960s, and a "hack" was seen as a simple, unconventional, and creative fix to a problem; hacking was also associated with a desire to play and experiment, and in particular, a desire for "making" or "maker culture" reflects the joy of trying something new, taking a risk, and building on digital or material objects in novel ways (Kelty, 2008). An aura of avowed amateurism, whereby hacking and programming is fun rather professional, has in the past distinguished the technology "hack" from the paid, professional programmer committed to a corporate goal (Hamilton, 2014).

As Lewis and Usher (2013) argue, hacker journalists present an opportunity to begin adapting these values into professional journalism. The present day hacker ethic has come to reflect core values, such as *transparency* (coding in the open, with bug-tracking); *iteration* (continuously releasing unfinished code for beta-testing); *tinkering* (privileging play and experimentation, focusing on the *process* of work more than its outcome); and *participation* (encouraging input from the widest possible group of collaborators). Each of these core hacker values seem distinct from journalism, but also more amenable to journalism's professional ideologies and routines than may be first apparent (see Phillips, 2010). Usher (2016) argues that the potential of hacker journalism has been embraced by top newsrooms in five ways: see-it-for-yourself journalism, which is inspired by transparence; openness, or an approach to collaboration and sharing of journalistic practices with other journalists and news consumers; "built-it-journalism," whereby code to create tools that improve the process and products of newswork; "near-far journalism" where a news

consumer can use interactives to facilitate personalized understanding of broader stories; and by using a "narrative nutgraf" as embedded in interactives, which still have news and a story at their center.

Over time, hacker journalism has become institutionalized, professionalized, and corporatized, as have hacker ethics as a whole (Mark Zuckerberg's motto for Facebook is "Move Fast and Break Things" (Foer, 2017). Teams have formalized within large newsrooms, projects reveal underlying homologies across news outlets (Astrid), and hacker journalists are cultivated from within – journalism students being taught code, journalists now learning to code, news organizations sponsor internal hackfests, and a specific repository for open source journalism projects has been created. Coders are welcomed and brought inside newsrooms rather than considered as outsiders who might transform news, the ethos that inspired the Knight Mozilla News Technology Partnership. Today, hacker journalists are often referred to as "unicorns" in job ads, but this is a misnomer, not only can unicorns be found, but they are all just like each other.

See also:
Data Journalism

References:
Appelgren, E. & Nygren, G. (2014). "Data Journalism in Sweden: Introducing New Methods and Genres of Journalism into 'Old' Organizations." *Digital Journalism 2*, 394–405.

Bradshaw, P. (2017, Aug. 13). "The Next Wave of Data Journalism." *Online Journalism Blog*. Retrieved: https://onlinejournalismblog.com/tag/next-wave-of-data-journalism/

Bradshaw, P. (2013). *The Data Journalism Heist.* Leanpub.

Carlson, M. (2017). *Journalistic Authority: Legitimating News in the Digital Era.* New York: Columbia University Press.

Carlson, M., & Lewis, S. C. (Eds.). (2015). *Boundaries of journalism: Professionalism, practices and participation*. New York: Routledge.

Coddington, M. (2015). Clarifying journalism's quantitative turn: A typology for evaluating data journalism, computational journalism, and computer-assisted reporting. *Digital Journalism*, *3*(3), 331-348.

Cohen, S., Hamilton, J. T., & Turner, F. (2011). Computational journalism. *Communications of the ACM*, *54*(10), 66-71.

Coleman, G. (2012). *Coding Freedom: The Ethics and Aesthetics of Hacking*. Princeton, NJ: Princeton University Press.

Cox, M. (2000). The development of computer-assisted reporting. Paper presented to the Association for Education in Journalism and Mass Communication, Southeast Colloquium: University of North Carolina, Chapel Hill.

De Maeyer, J., Libert, M., Domingo, D., Heinderyckx, F., & Le Cam, F. (2015). Waiting for Data Journalism: A qualitative assessment of the anecdotal take-up of data journalism in French-speaking Belgium. *Digital Journalism*, *3*(3), 432-446.

Ensmenger, N. (2015). "Beards, Sandals, and Other Signs of Rugged Individualism": Masculine Culture within the Computing Professions. *Osiris*, *30*(1), 38-65.

Felle, T. (2016). Digital watchdogs? Data reporting and the news media's traditional 'fourth estate'function. *Journalism*, *17*(1), 85-96.

Fink, K., & Anderson, C. W. (2015). Data Journalism in the United States: Beyond the "usual suspects". *Journalism Studies*, *16*(4), 467-481.

Flew, T., Spurgeon, C., Daniel, A., & Swift, A. (2012). The promise of computational journalism. *Journalism Practice*, *6*(2), 157-171.

Gray, J., Chambers, L., & Bounegru, L. (2012). *The data journalism handbook: how journalists can use data to improve the news*. Sebastapol, CA: O'Reilly Media, Inc.

Hamilton, C. (2013). Symbolic amateurs: On the discourse of amateurism in contemporary media culture. *Cultural Studies Review*, *19*(1), 177.

Himanen, Pekka. 2001. The Hacker Ethic and the Spirit of the Information Age. New York: Random House.

Holovaty, A. (2006, Sept. 6). A fundamental way newspaper sites need to change. www.holovaty.com, retrieved: http://www.holovaty.com/writing/fundamental-change/

Karlsen, J., & Stavelin, E. (2014). Computational journalism in Norwegian newsrooms. *Journalism practice*, *8*(1), 34-48.

Kelty, C. (2008). *Two Bits: The Cultural Significance of Free Software*. Durham, NC: Duke University Press.

Levy, P. (1997). *Collective intelligence: Mankind's Emerging World in Cayberspace*. Cambridge, MA: Perseus Books.

Lewis, S. C., & Usher, N. (2014). Code, collaboration, and the future of journalism: a case study of the Hacks/Hackers global network. *Digital Journalism*, *2*(3), 383-393.

Lewis, S. C., & Usher, N. (2016). Trading zones, boundary objects, and the pursuit of news innovation: A case study of journalists and programmers. *Convergence*, *22*(5), 543-560.

Parasie, S., & Dagiral, E. (2013). Data-driven journalism and the public good: "Computer-assisted-reporters" and "programmer-journalists" in Chicago. *New media & society*, *15*(6), 853-871.

Parasie, S. (2014). "Data-driven Revelation? Epistemological Tensions in Investigative Journalism in the Age of 'Big Data'." *Digital Journalism*. doi:10.1080/21670811.2014.976408

Phillips, A. (2010). Transparency and the new ethics of journalism. *Journalism Practice* 4(3): 373–382.

Powers, M. (2012). "In Forms That Are Familiar and Yet-to-Be Invented" American Journalism and the Discourse of Technologically Specific Work. *Journal of Communication Inquiry*, *36*(1), 24-43.

Raymond, E. (2001). The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary. Sebastopol, CA: O'Reilly & Associates, Inc.

Reavy, M. (1996). How the media learned computer-assisted reporting. Paper presented to the Southeast Colloquium, Newspaper Division, Association for Education in Journalism and Mass Communication, Roanoke, VA.

Royal, C. (2012). The journalist as programmer: a case study of the *New York Times* interactive news technology department. *#ISOJ: The official research journal of the International Symposium for Online Journalism*, *2*(1): 5–24

Smit, G., De Haan, Y., & Buijs, L. (2014). Visualizing news: Make it work. *Digital Journalism*, *2*(3), 344-354.

Stallman, R. (2002). *Free Software, Free Society: The Selected Essays of Richard M. Stallman*, edited by Gay, J. Boston, MA: GNU Press

Star, SL, Griesemer, JR (1989) Institutional ecology, 'translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907–39. Social Studies of Science 19(3): 387–420.

Trédan, O. (2014.) "Quand Le Journalisme Se Saisit Du Web : L'exemple Du Datajournalism." [When journalism takes hold of the web: the example of data journalism] In *Changements Et Permanence Du Journalisme [Change and Permanence of Journalism]*, edited by Florence Le Cam and Denis Ruellan, 199–214. Paris: L'Harmattan.

Turner, F. (2005). Where the counterculture met the new economy: the WELL and the origins of virtual community. *Technology and Culture 46*(3): 485–512.

Usher, Nikki. (2016). *Interactive Journalism: Hackers, Data, and Code.* Chicago: University of Illinois Press.

Weber, W. & Rall, H. (2013.) "'We Are Journalists': Production Practices, Attitudes and a Case Study of the New York Times Newsroom." In *Interaktive Infografiken*, edited by Wibke Weber, Miguel Burmester, and Ralph Tille, 161–172. Wiesbaden, Germany: Springer Vieweg.

Weinacht, S. & Spiller, R. (2014.) Data Journalism in Germany. *Journalism*, *59* (4), pp.411-433.

Wynants, M. & Cornelis, J. (2005) *How Open is the Future? Economic, Social and Cultural Scenarios Inspired by Free and Open-source Software*. Brussels: Brussels University Press.

Further readings:

Coddington, Mark. (2015). Clarifying journalism's quantitative turn: A typology for evaluating data journalism, computational journalism, and computer-assisted reporting. *Digital Journalism*, *3*(3), 331-348.

Lewis, S. C., & Usher, N. (2014). Code, collaboration, and the future of journalism: a case study of the Hacks/Hackers global network. *Digital Journalism*, *2*(3), 383-393.

Usher, Nikki. (2016). *Interactive Journalism: Hackers, Data, and Code.* Chicago: University of Illinois Press.

Author Biography

Nikki Usher, PhD, is an associate professor at The George Washington University. Her most recent book is *Interactivce Journalism: Hackers, Data, and Code* (University of Illinois Press), and she is the author of *Making News at The New York Times* (University of Michigan Press), winner of the 2015 Tankard Award for best book of the year. She has been a fellow at Columbia University's Tow Center for Digital Journalism and the University of Missouri's Reynolds Institute for Journalism and is the author of over two dozen journal articles focusing on the future of journalism.