# RESEARCH NARRATIVE

*Seth C. Lewis, Ph.D.*
*University of Minnesota–Twin Cities*

My interdisciplinary research program explores the implications of digital technologies for the dynamics of media work and media innovation. In particular, I study the changing nature of journalism—its professional norms, values, practices, and roles in society—amid the rise of sociotechnical phenomena such as big data, social media, open-source software, and digital audience analytics. In exploring these issues, I draw upon a diverse mix of perspectives—from mass communication and journalism studies to the sociology of professions and science and technology studies—as well as qualitative and quantitative methods, allowing the research question to guide the research design. I also collaborate with an international set of experts, enabling me to extend my research agenda farther than would otherwise be possible working alone. This approach has allowed me to contribute to diverse literatures while maintaining focus on a core question that animates my work: How are emerging technologies, with their distinct properties and processes, associated with changes in news work, and what does that mean for how we understand the nature of journalism and its roles in society?

At the intersection of journalism and technology, my research has made several significant contributions to the academic literature:

First, I show how the news profession has been steered from "journalism" to "information"—a rhetorical and material pivot that puts less emphasis on professional exclusivity and opens the door to a more expansive view of what counts as news and who counts as a journalist (Lewis, 2012, *Mass Communication and Society*). Furthermore, I unpack this tension over who "controls" news in a digital age through a combination of sociological theories about professions, boundaries, and institutions, in a paper that was named ICA's Outstanding Journal Article of the Year in Journalism Studies (Lewis, 2012, *Information, Communication & Society*). These two studies inform how we think about new types of actors and activities entering the space of journalism, thereby reconfiguring the nature of news and its production—a line of research on boundaries of journalism that has continued in later work (Carlson & Lewis, 2015).

Second, and building on that foundation, my research shows how the developing role of data, code, and "hacking" (in the pro-social sense of the term) is not merely a *technological* transition in journalism—resulting in new kinds of applications, algorithms, visualizations, etc.— but also a *social* phenomenon that blends journalistic norms with the ideals and ethos of the open-source community (Lewis & Usher, 2013). This sociotechnical perspective sheds light on emerging exchanges at the intersection of journalism and technology (Lewis & Usher, forthcoming), as in the case of global grassroots networks of journalists and programmers, or "hacks and hackers" (Lewis & Usher, 2014).

Third, this line of research connects with and builds upon a series of papers on changing journalism practice. These articles, for example, articulate the role of user participation in reframing the boundaries of journalism innovation (Lewis, 2011); show how open innovation theory is connected with digital experimentation in online news (Aitamurto & Lewis, 2013); demonstrate how social media are implicated in evolving news norms (Hermida, Lewis, & Zamith, 2014; Lasorsa, Lewis, & Holton, 2012); and examine the time-lagged relationship between audience clicks and news placement online (Lee, Lewis, & Powers, 2014).

Finally, my latest research has focused on developing *conceptual* and *methodological* contributions that can inform research agendas in an era of big data and human–machine communication.

With regard to conceptual contributions, I have co-developed a model for interpreting the interplay of what we call the Four A's of cross-media news work: human social *actors*, technological *actants*, and distinct types of *audiences*—all of these interconnected through *activities* that define the production of news (Lewis & Westlund, 2015). As a sociotechnical approach, the Four A's model casts new light on how to understand human–machine interactions in journalism. Relatedly, and in a special issue on "Journalism in an Era of Big Data" that I recently guest-edited for *Digital Journalism* (Lewis, 2015), we suggested four conceptual starting points for investigating the consequences of big data for journalism: epistemology, expertise, economics, and ethics (Lewis & Westlund, 2015). These Four E's open up key research questions with regard to how data-centric practices alter journalistic ways of *knowing* (epistemology) and *doing* (expertise), as well as journalism's negotiation of *value* (economics) and *values* (ethics). In another vein of conceptual development, I co-edited *Boundaries of Journalism: Professionalism, Practices and Participation* (Carlson & Lewis, 2015), a book that draws on the sociological concept of boundary work to examine a journalistic field in flux. Elsewhere, I have applied the concept of reciprocity for rethinking matters of social media and society generally (Lewis, 2015) and the relationship between journalists and audiences particularly (Lewis, Holton, & Coddington, 2014).

With regard to methodological contributions, I have led efforts to explain how traditional communication research methods such as content analysis can be retooled to blend the best of both human and computational approaches in this emerging era of big data (Lewis et al., 2013). In one case, our research team applied this hybrid method of content analysis to a large dataset of tweets, revealing new ways of thinking about news sourcing practices on social media (Hermida, Lewis, & Zamith, 2014). These insights allow us to propose fresh possibilities for applying the "algorithmic coder" in content analysis (Zamith & Lewis, 2015).

In all, my work analyzes journalism and news work in an era of data abundance, shifting boundaries of professional practice, and rapid technological change. Ultimately, in studying issues of data, code, and computation, my goal is not merely to describe such changes in journalism, but to theorize about their larger meaning for the nature of public information in society.