

---

---

# ANTHROPOLOGICAL PERSPECTIVES ON KNOWLEDGE IN THE DIGITAL AGE

## **Digital Expertise in Online Journalism (and Anthropology)**

**Dominic Boyer**  
*Rice University*

### **Abstract**

*This article explores the connection between digital media practices and digital (self-) understandings in western news journalism today. I describe how German and US online journalists translate their experiential familiarity with a plethora of digital information and communication technologies into narratives of digital expertise that contrast their “non-linear,” “iterative,” “interactive,” and “network” modes of thinking from the journalistic expertise of traditional (broadcast) journalism. I view online news journalists’ narratives of digital expertise as exemplary of the cybernetic and informatic epistemologies that developed in the wake of the industrialization of computation before the Second World War and that exerted a profound influence over the analytic methods and theories of the postwar human sciences as well. I thus compare digital thinking in news journalism and postwar anthropology in order to illuminate how technically-enabled practices of knowledge formation influence expert modes of understanding human social life. [Keywords: Online news, digital media, cybernetics, expertise, anthropological theory]*

“Lineal thinking will always generate either the teleological fallacy (that end determines process) or the myth of some supernatural controlling agency.”

—Gregory Bateson, *Mind and Nature: A Necessary Unity*

## **Introduction: Cybernetics and Anthropological Knowledge in the Digital Age**

**T**he core of this article is an ethnographic exploration of the significance of digital media practices and digital (self-)understandings in contemporary western news journalism. For those of us following current trends in news production and circulation, this theme has a certain obviousness to it. Talk of an internet “revolution” in news is commonplace, and even those journalists who voice concerns about the short- and long-term effects of digital media upon the news industry seem resigned to the transformational power of those media. Likewise, digital culture seems an unavoidable destination for anthropological research and reflection today (e.g., Boellstorff 2008, Coleman and Golub 2008, Coombe and Hartman 2004, Kelty 2004, Mazzarella 2006, Reed 2005) just as digital media have become increasingly important instruments and environments of anthropological knowledge-making and communication (Kelty 2008).

Beyond the ethnography of digital expertise in news journalism, my secondary goal in this article is to suggest how we can connect anthropological research on digital knowledge to the status of digital knowledge within anthropology itself. No one would likely dispute some connection between our environments and practices of digital mediation and our interest here in exploring knowledge in the digital age. But what exactly is that connection? Can we go a step farther and think through the specific contribution of digital mediation to anthropological methods of theory and analysis? To answer these questions, we need to adjust for what I describe below as a certain Gramscian organic intellectual faith in the radical newness and transformational power of digital media. This is an ideological orientation that binds anthropologists of digital culture with other digital media practitioners (like online news journalists). And, for this very reason, it is important to trace anthropology’s own history of engagement with digital modes of understanding. I begin with a deeper (pre-internet) history of anthropology’s investment in digital methods and

analytics and move laterally from there into a comparison with how digital expertise is currently being formed in online news journalism.

Anthropology's engagement with the digital age surely began no later than Gregory Bateson and Margaret Mead's (and to a much lesser extent Clyde Kluckhohn's) active participation in the legendary Macy Foundation Conferences from 1946 to 1953. The Macy Conferences were an exercise in what Donna Haraway would much later term "cyborg theory" (Haraway 1991). Organized as a somewhat experimental venture into interdisciplinary communication between the sciences and social sciences, these ten meetings focused on the structures and operation of human and machine intelligence while never taking a human/machine distinction for granted. Here, in the primary crucible and amplifier of what came to be named, halfway through, as "cybernetics," long-standing anthropological interests in language and epistemology brushed shoulders with mathematics, engineering, Gestalt psychology, psychoanalysis, ethics, neuroscience, cellular biology, and an emerging "information theory." All the participants sensed a paradigm shift in the making, and they worked, albeit only with partial success, to solidify an analytical meta-language for their shared intuition that the sciences of mind, knowledge, and understanding were about to be radically transformed (Helms 1993, Dupuy 2000).

The central themes of the Macy Conferences were feedback, control, and circularity in the communication and behavior of "complex systems" both mechanic and biotic (see, e.g., Wiener 1948, 1950). A discussion over whether intelligence was primarily digital (discrete) or analogical (continuous) in nature was also pivotal. As Bateson recalled later, "In the early days of cybernetics, we used to argue about whether the brain is, on the whole, an analogic or digital mechanism. That argument has since disappeared with the realization that the description of the brain has to start from the all-or-nothing characteristic of the neuron. At least in a vast majority of instances, the neuron either fires or does not fire; and if this were the end of the story, the system would be purely digital and binary. But it is possible to make systems out of digital neurons that will have the *appearance* of being analogic systems" (2002:103). As Bateson's comment reveals, despite their varying disciplinary backgrounds, research interests, and frequent conceptual disagreements, the Macy participants tended to agree about a *fundamental systematicity* of their objects of reflection and about the role that *recursive informatic operations* played in shaping behavior.

As co-convenor Norbert Wiener explained in computational and thermodynamic idioms, cybernetics was interested in how organizational order was produced through recursive systemic feedback—feedback which countered an overall environmental tendency toward entropy or noise: “Thus the nervous system and the automatic machine are fundamentally alike in that they are devices which make decisions on the basis of decisions they have made in the past...The synapse in the living organism corresponds to the switching device in the machine...The machine, like the living organism, is...a device which locally and temporarily seems to resist the general tendency toward entropy. By its ability to make decisions, it can produce around it a zone of organization in a world whose general tendency is to run down” (Wiener 1950:33-4). In Wiener’s cybernetics, human neural and muscular organization—and even, although admittedly with greater uncertainty, social organization—became comparable to mechanical automata by likening both to the switching devices and systemic circuitry of electronic computation. This conceptual emphasis, shared by many of the Macy participants, on a recursive computational system as the model for intelligence and action is the essence of what I refer to below as a “cybernetic-computational” epistemology.

The analogy of the operation of living organisms and machines was, of course, nothing new in itself and echoed western philosophical compressions of humanity and its operational artifacts dating back to Enlightenment materialists like La Mettrie (1748). However, the cybernetic-computational epistemology that was articulated and refined at the Macy Conferences was also historically specific in its connection to the experiments in computational design and electrical engineering that generated the first prototype electronic computers in the late 1930s. These experiments were accelerated through major governmental investments and military applications during the second World War, and Wiener himself said that he had come to the general principles of cybernetics through wartime research on the possibility of using radar feedback to improve anti-aircraft weaponry. Both the realities and fantasies of “machine intelligence” were matters of significant cross-disciplinary scientific attention and concern by the late 1940s. The military and civilian applications for electronic computation expanded rapidly (not least through the mathematical and design work of Macy participants and guests like Wiener, John von Neumann, Claude Shannon, and J.R. Licklider) and became increasingly a matter of public fascination,

aspiration, and anxiety in the early 1950s (see *Time* 1950, for example). In this respect, cybernetics can be interpreted as a kind of transposition of the epistemic models and research problems of electronic computation into other fields of scientific and human-scientific inquiry (Galison 1994, Latour 1987, Pickering 2002). Cybernetics did not invent the centering of electric schemata—including idioms of circuitry, charges, recursive functions, and feedback—in models of human rational process and behavior (Sigmund Freud's *Interpretation of Dreams* is a wonderful early example; 1900). But cybernetics did expand and, I would argue, cement the significance of these schemata. Its networks of practitioners and spokespersons elevated informational and communicational systematicity into a mystery worthy of further scientific and public attention (Heims 1993). In short, cybernetics transposed the nascent industrialization of electronic computation into a new ontology: one that invited new science to elaborate, refine, and specify it epistemologically (see Boyer 2005 for a parallel discussion of dialectical ontologies and epistemologies).

Across the 1960s and beyond, cybernetic insights, attentions, and postulates merged into new conceptual experiments and movements within a variety of fields in the human sciences, for example, Luhmannian systems theory in sociology or post-human, cyborg and informationalist trends in literary and cultural studies (Haraway 1991, Hayles 1999, Kittler 1990). Even outside the conceptual avant-garde, the importance of “communication” and “information” as objects of interest, research, and reflection in the human sciences swelled after the 1950s. In anthropology, one sees this perhaps most clearly not only in the maverick cyberneticism of Bateson himself (1987, 2002), but also in the rise and disciplinary dominance of symbolic, structuralist, and interpretive anthropologies. Despite their legendary arguments with each other, all of these anthropologies focused their analytical imagination on communicational and informational problems (at least in the sense of semiosis writ large) and in cases like Lévi-Strauss's structuralism, the presence of informationalist insight (for example in his theory of “hot” and “cold” societies, 1966) is more directly recognizable. The signature problem of postwar anthropology through the 1980s—culture—was often apprehended in cryptocybernetic terms. The Sahlinian model of culture is exemplary for its rigorous systems of binary (or “digital” in Bateson's sense) oppositions (1976), and even the more stubbornly “analogical” culture models, such as Geertz's, exhibit informationalist flirtations (e.g.,

2000:49-52). Even with the turn away from culture in the 1980s, the rising influence of French poststructuralist (particularly Foucaultian) theory assured cybernetic attentions a prominent place in anthropology. Two of the things that distinguished poststructuralism's analytical method were its concern with language and power (i.e., "discourse") as systems of co-constituting elements and its exploration of networks, nodes, linkages, lateral effects, and recursive operations within modern social formations (Foucault 1979). The influence of cybernetic and computational (now, "informational") epistemology upon postwar anthropology and the postwar human sciences is thus, in my view, deep and largely undisclosed. It is not so much the case that cybernetic-informational epistemology taught anthropology to be concerned with language and semiosis; rather, its saturation of the postwar human sciences "informed" the elevation of language and semiosis into signature concerns of postwar anthropology, and, more distinctively, it encouraged anthropologists to think about various aspects of semiosocial order (for example, "culture") in systemic, recursive, and informationalist ways (see, e.g., Collier 1975 or Rappaport 1971). This silent shaping of knowledge has led me to write elsewhere of a cybernetic and digital "unconscious" within postwar anthropological theory and practice (Boyer n.d.).

Yet, clearly this article is too short to explore this unconscious in the detail it deserves. My point has simply been to demonstrate that the intellectual roots of our contemporary digital attentions and analytics are historically much deeper than the explosive innovation and widespread implementation of "digital" (here in the contemporary sense of electrically-enhanced mediation) information and communication technologies (ICTs) in the 1980s and 1990s. Indeed, we could even go farther. Although the cybernetics movement of the 1940s and 1950s was a fantastically important conceptual watershed in scientific and human-scientific analytic paradigms, its own epistemic roots can be traced back into the electrical science and social science of the 19th century.

But, rather than pursue the problem of knowledge in the digital era in this direction, that is, into greater historical depth, I would like to now expand the discussion laterally through ethnography by examining how another kind of professional intellectual, online journalists, discuss the particular modes of expertise they have acquired through working in a multimedial digital ecology. This ethnography is based upon my research with German news journalists since the mid 1990s as well as upon a more

recent project investigating online news departments and the impact of digital information technologies in Germany and the United States. Through a comparison between online journalists' sense of their digital expertise and our (anthropological) own, I hope to highlight the importance of cybernetic-informational epistemology in contemporary intellectual and public culture. My ethnography focuses especially on two dimensions of how online journalists conceive the special nature of their expertise within journalism and public culture: (1) non-linear or networked thinking contrasted with organizational linearity and (2) a sense of being able to better manipulate and optimize informational "content" to suit communicational "medium."

### **Online News and Online Journalists: Organic Intellectualism in a Digital Register**

News journalism is experiencing what sociologist Eric Klinenberg describes as a "revolutionary period" in the transition to digital communication and information technology (2005). Over the past five years, the internet has become a central feature of virtually every news organization's strategy for short- and long-term survival. This trend began in fits and starts in the mid 1990s but was derailed or delayed, according to online news executives and journalists I have interviewed, by what are described as professional resistance, by institutional inertia, and by the collapse of technology markets in 2001 (see Boczkowski 2004, Paterson and Domingo 2008). Yet by 2004 and 2005, a renewed surge in internet advertising revenue and pressure from an institutional investment culture skeptical of old media (especially print media) viability, combined with a demonstrable migration of audience (especially younger audiences) toward online and other new media platforms, persuaded even the most resistant news organizations to invest more robustly in online initiatives. Online news investment in the United States and the United Kingdom has outpaced the rest of the world, but there is general agreement within western journalistic communities and across western journalistic generations that new digital information systems and platforms have profoundly reshaped the institutions and practices of newsmaking, whether for good or for ill.<sup>1</sup> In an era in which most western news organizations are shedding staff to meet investors' demands for profitability in the face of falling advertising revenues, online news

departments are experiencing growth. Online investments tend to be justified by predictions of future revenue growth since, for the most part, online initiatives have not yet developed sustainable revenue streams of their own and thus often depend on old media newscenters and revenue for their continued operation. As one department head confessed to me, “We don’t have a viable business model. Yet.”

In tandem with this process of technical transformation, journalists working in and with digital media, especially in Europe and North America, have increasingly come to establish specialized professional networks and institutions for themselves. For example, there is a vibrant blogosphere now devoted to online journalism, citizen journalism, news blogging, the future of journalism, and so on. And, an annual North American online news conference began in the late 1990s, which gradually evolved into the Online News Association (<http://www.journalists.org>), a professional organization that claimed over 1,600 professional and associated members in 2009. One international database of online news resources contained the names of over 19,000 online news organizations in 2006 (Deuze 2008:199). Journalists invested in digital media have meanwhile worked to refine and publicize a new (sub)professional identity for “online journalism” complete with a rich field of indexical distinctions between online journalism and “traditional journalism.” Of course, this project of identity-formation is typically selective and contingent, its apparently substantive and stable distinctions of “us” and “them” undermined by the fact that many journalists who would not willingly identify themselves as “onliners” have become, both by necessity and by inclination, skilled in the use of a wide variety of digital media platforms and technologies. Likewise, digital ICTs have been industrially standard in all western news production centers for over a generation. Nonetheless, self-identifying onliners tend to present themselves publicly as the future guarantors of the news industry, as the cutting edge of their profession who will broker the reinvention of news for the digital era. In their mission statement, the Online News Association announces, “We believe that the Internet is the most powerful communications medium to arise since the dawn of television. As digital delivery systems become the primary source of news for a growing segment of the world’s population, it presents complex challenges and opportunities for journalists as well as the news audience.”

The common thread within narratives of online journalism is a kind of Gramscian organic intellectual certainty in the inevitability of

technologically-driven revolution in media production, circulation, and reception—a revolution that is nevertheless susceptible to human knowledge and intentionality if managed by experts in new media (for academic analogues see Bell 1973, Balkhausen 1978, Poster 2000, among many others). George S.,<sup>2</sup> the internet strategy director of a US public radio broadcaster, startled me with his bluntness when he said, “Really, I don’t give a shit about the radio anymore. But I can’t say that around the station. Already I get a lot of pushback from the reporters, who think of the website as a waste of time, so instead of creating content themselves, they hand it off to the interns. But what they don’t realize is that they’re becoming dinosaurs and that in five years, the interns will have their jobs.” Hermann L., who occupies a position parallel to George’s at a regional public broadcaster in Germany, laughed broadly as he paraphrased investor Warren Buffett on the necessary collapse of print news, “Imagine that printing had never been invented and that we only had the internet today. And, I came to you and said, ‘I have a great business idea: we gather together all the news of the day, single the most important stories out, print them on giant, expensive printing presses, on paper, and then drive them with an *unbelievably* expensive fleet of trucks across the country, hand them out, and for all that, you can read today’s news tomorrow morning.’ Would you give me any money? [laughs] The newspaper is moving away from the news business and toward background stories with specific profiles; weekly papers will probably give up news altogether....[And] this pull toward online is going to eventually affect television and radio as well. The internet will be the center, and the other media—the other media will be satellites.”

In Gramsci’s model of organic intellectualism as the epistemic labor that accompanies and organizes new forces in social production (1971:5), one finds a helpful, if schematic, way of understanding how a new mode of professional consciousness could crystallize in tandem with the expansion of social practices of digital mediation. Gramsci would likely have anticipated something like George’s and Hermann’s millenarian narratives of new media given their practical and intellectual investment in the productive potentials of new media technology. Gramsci might also have expected their disdain for older productive techniques and technologies they saw their expertise as displacing. In this respect, Gramsci’s category is analytically more helpful than the distinction of universal and specific intellectuals favored by Foucault (1980). Online

journalists, like other professional intellectuals, may well be “specific” in their identification with certain technologies, domains of expertise, and technical practices. But what really distinguishes them intellectually, I would argue, is the particular cybernetic and informationalist epistemology in which they define their expertise. I turn now to ethnographic examples drawn from my research with online journalists in Germany and the United States that allow us to explore this epistemology-in-action in more detail.

### **“Das Sein prägt ja das Bewußtsein”**

On a warm bright summer day in May 2008, I sat with Helga S., the head of the online department of a German public broadcaster, in her office in a small western German city. Germany’s public broadcasting system is federalized with the *Bundesländer* (federal states) possessing their own public broadcasters or sharing them regionally (Humphreys 1994, Meyn 1994). And yet, public broadcasting policy in Germany is also coordinated at the federal level, with the minister presidents of the federal states meeting occasionally to negotiate a federal *Rundfunkstaatsvertrag* (“RStV,” broadcasting agreement) that governs broadcasting across the country. Helga and I were involved in a deep discussion of the major issue affecting the online departments of all the German public broadcasters in the Spring of 2008: the upcoming negotiations over the right of public broadcasters to create unique online material. Up until now, the RStV has only authorized online departments to offer *Programmbegleitung* (program accompaniment) for already broadcast radio and televisual material. Thus, for example, the text of a radio interview or a television clip could be placed on the public broadcaster’s website. But the online department could not research and develop its own “unique content” and then broadcast it. It was also mandated that the public broadcasters could spend no more than .75% of their entire budget upon online initiatives. The online departments that I researched were quietly lobbying for the relaxation of these *Fetteln* (shackles) in the upcoming RStV negotiations. Journalists argued to me that the old law missed the evolving nature of digital communications. An artificial separation between radio, television, and internet platforms, my interviewees said, made little sense in the era of digital radio, YouTube, and podcasting. But the leaders of Germany’s private broadcasting industry have argued vigorously that any

more aggressive move by public broadcasters to generate unique online content would allow publicly financed media to ruin commercial media markets. One online director, although himself a proponent of relaxing the restrictions on content generation and especially the budgetary limits, admitted that with the brand loyalty and financial strength of the German public broadcasting system (2nd in the world only to the BBC in terms of funding), they could rather easily dominate the German language internet news market were that their intention (although he also emphasized that market dominance was never an organizational priority for German public broadcasting).<sup>3</sup>

It was in this context that Helga described to me her organizational rationale for maintaining and strengthening independent online departments that worked with both radio and television departments rather than subdividing online expertise and placing it under the control of radio and television. At stake, she explained, were the public broadcasters' future organizational ability to manage platform convergence and new media. Online departments, Helga said, brought digital consciousness to broadcasting organizations.

HS:...There are ever more themes that are falling *between* the domains [of radio and television]...And as there are more of these themes that transcend the old structures, the more it becomes clear that the normal old linear organization doesn't work any longer. And that is the phase that we're in right now.

DB: Are you talking about convergence? That different media are growing together, perhaps into one medium with different platforms?

HS:...[breaking in] But that won't solve the problem. The fundamental idea that somehow everything belongs together won't solve your organizational problem. If you are a large media organization and are convinced that somehow things are going to grow together then somehow you need to be able to form unities. And this is where we come to a very important point. I believe that Onliners have special non-linear knowledge [*nichtlineäres Wissen*], which others do not share—the others have linear knowledge. “Das Sein prägt ja das Bewußtsein,” being imprints consciousness: this old Marxist principle is right in that respect. Organizations need this knowledge of non-linearity and this knowledge of the complexity of

information packets—that they need to be logically structured in a non-linear space, or otherwise they cannot be found. And this knowledge can't be splintered into radio and television. Because if, in the name of organizational unity, we dissolve this department, then there are only two possibilities. The competence will flow into other departments, or the competence will be dissolved in the process of flow or become mired, evaporating like drops on a hot stone, since the minority in any organizational culture often find it hard to hold their own against the many.

**DB:** This is a very interesting point. How does one learn this kind of non-linear thinking? Does it have something to do with the work, with the connection to the internet?

**HS:** Yes, yes, it's just as we learned linearity before. Based on my own professional experience, for example, I can tell you that the timeline exerts an enormous linear ordering effect over our organizational structures. The effect is constantly underestimated. The timeline reflects the programming sequence, and the departments then tend to think this way as well. And there is a truth to it. But when you are working in the internet or in another dialogical medium, then you simply *can't* think this way, in terms of a timeline (*Zeitstrahl*).<sup>4</sup> And I also think that what's really really important is that there are too few decision makers here that have practical experience with IT (information technology) projects—that is, with how complex IT projects are, that one basically has to conceptualize all the work procedures in advance, with how difficult it is to manage such projects in an iterative process. I have to explain to these decision makers why I began a project two years ago and then in the middle realized that I couldn't do what I thought I could do—because I always have to adapt myself to the project, and then I always have to justify why I deviated from the plan. But I have to deviate; I can't simply stay put. Yes, I find this paucity of experience in thinking in the terms of IT to be a great organizational problem [pauses]...because in non-linearity it somehow always comes back to an IT project somewhere. The basis is *always* IT.

This extensive exchange is exemplary of the autoanalysis of online journalism in several respects. The exchange suggests that the future viability of news organizations is dependent upon the special intellectual

and organizational capacities of online journalists. It also conveys the contrast that online journalists frequently assert between their minoritarian digital consciousness and expertise and those of the organizational cultures that they inhabit. Onliners often contrast the “iterative” networked nature of their expertise to the hierarchical, isolating, and inflexible institutions of broadcast media. This contrast makes sense, they say, because of how the just-in-time, decentered, interactive character of new media like the internet challenge the center-periphery organization and structured temporality of traditional news broadcasting. Echoing Wiener’s concerns with feedback and organismal learning, for example, Helga addresses the need of her own organization “for knowledge of the complexity of information packets” in order to make better operating decisions. Helga’s final reflections upon non-linearity are particularly interesting in this regard. She closes a distinction between distributed networks of information technology (“IT”) and non-linear thinking, drawing upon Marx to support her understanding that lived experience of work practice and technical environments shapes modes of consciousness and expertise. Non-linear thinking in this case signals a capacity to think at the level of a network of dynamic, mutually constituting elements and relations. Like Bateson, Helga rejects the ambition of linear thinking to correctly understand the technical and social ecologies of digital media in terms of stable chains of cause and effect. Helga’s conclusion, “The basis is *always* IT,” may not be intended as a radical collapse of the contingent mediations between technology and consciousness, but it does demonstrate the extent to which many online journalists understand the radically differential character of their expert knowledge when compared to that of traditional (broadcast) journalism. Onliners feel that they understand problems of informational architecture and circulation better than other journalists because they *live* the complexity of information in their digital media practices. IT is *their* basis, the practical knowledge which anchors their special identity and social importance, especially in an era in which news media organizations are becoming increasingly multimedial and real-time in their productivity.

**“It’s not about radio. It’s about content.”**

Online journalists’ feeling of release from the spatiotemporal “linearity” of broadcasting into more networked, dynamic, and interactive modes of

understanding and action is accompanied by a sense that they possess a special expertise in reconfiguring and mobilizing relations between information signals and the channels that carry them. As with Helga's identification with non-linear thinking, a cybernetic language and social imagination is often prominent. I once asked Rosie R., a US newspaper journalist who was, by her own account, a "convert" to online journalism, whether she felt there was anything that distinguished online journalism as a practice. She replied, "The core of what we do is delivering the content best-suited to the medium...If we were to say we were experts in anything, it would be in adapting the content to the medium." "Information" and "content" are, unsurprisingly, core informational categories that frequently serve as tropes denoting the objects and products of journalistic labor (tropes that, to a certain extent, have replaced older tropes like "news" and "stories"). "Mediums" meanwhile are appreciated for their multiplicity and dynamism but most often treated as passive conduits for information content. An epistemic capacity to separate "content" from "medium," as well as a practical capacity to optimize "content" across "medium," is conceived as a great professional advantage by online journalists and one often hears traditional journalists generically criticized or ironized for their inability to understand, to paraphrase Nicholas Negroponte's critique (1995) of Marshall McLuhan, that content rather than medium is the message of the digital age. The non-onliner is regarded as someone whose expertise is imprisoned within a single configuration of medium and content, whereas the very essence of online expertise seems to be the ability to emancipate content from such medium dependency and instead to reimagine and repurpose content across a variety of different "platforms." As George S. explained, "It's not about radio, it's about content. If we can reconceptualize our newsroom as a mini-wireservice<sup>5</sup> feeding out to different platforms then, we're going to be much better off in the long run."

Nevertheless, the complex ecology of content and media in the digital era is widely recognized to be exceedingly challenging. Online journalists are keenly aware of the abundance of messaging in the digital era and frequently discuss, much in the spirit of the Macy Conferences, the problem of maintaining a clear signal amidst an entropic ocean of informational "noise." As Rosie put it, "The challenge is that as people become over-saturated with news, as there are more and more sources of news, from the big branded news producers to the independent blogger,

citizen journalists, whatever you want to call them, we have to figure out how we can cut through the clutter and provide some clarity to people as to what's important." The image of providing clarity, of a special capacity to identify significance within informational clutter, takes the practices of thematic selection and message filtering that have long been aspects of news journalism and elevates them to new jurisdictional importance at the core of the identity of online journalism. Hermann L. noted likewise how the digital ecology of information shifted the vocational profile of the journalist, "the amount of information on the same topics is growing explosively. And that brings the journalist into a role that he perhaps did not have before, namely...to tell me what of this information is really important, what is believable, and what is trustworthy. Before it was more the role of the journalist to publish something that without his research would not have existed, but today the role is increasingly to evaluate the material that others are generating. And to organize it. For, the end consumer is still the way he always was, with limited time and with limited competence." Recognizing the necessary transformation of journalism is itself, as noted above, an essential element within narratives of online practice. It marks digital expertise as a departure from past practice and norms, as a mode of knowledge better adapted to the new informational and communicational ecology. Moreover, digital expertise makes "content" susceptible to journalistic agency, and this, together with the relatively inert quality of "mediums," enables online journalism to operate creatively and effectively despite the operational challenges of messaging in the digital age.

As one might imagine, the generalized opposition we have just encountered between "digital" (online) expertise and "traditional" (broadcast) expertise weakens when it is historicized. Both sides of the opposition, after all, reference modes of electronic mediation. As Raymond Williams noted in his prescient book on television (1974), the first large-scale installations of electronic media appeared in the 19th century and then to enable lateral networked communications within a specific institutional field: the military. It was not until much later that electronic media were reorganized into the dominant radial modes familiar to us from terrestrial radio and television broadcasting. That lateral modalities of electronic communication have risen again with the expansion of the internet should perhaps be seen less as a world-historical rupture (although it often seems that way to contemporary media professionals and audiences) than as a

rebalancing of proportions between the lateral and radial potentials of electronic mediation.<sup>6</sup> For, even in the heart of contemporary digital information technology, for example at Google, one can witness powerful tendencies toward informational centralization and radiality, even given the astounding lateral and dialogical potentials that appear to inhere in internet-based communication.

But historicization is not an analytic move that often appears in self-representations of online journalistic knowledge and practice. The organic revolutionary sensibility of online journalism guarantees that the cybernetic and informationalist idioms and dispositions of online journalism are relentlessly presentist and future-oriented. For this reason perhaps, they merge rather seamlessly into market and commercial language as well. There is, for example, persistent discussion of conceptual and technical “innovation” and organizational “optimization” in online journalism. At the 2007 Online News Association meetings in Toronto, the plenary panel focused on how best to adapt news journalism to recent digital media like news aggregators (e.g., Google News), blogging, and social networking software (e.g., Facebook, MySpaces) and debated how best to foster a spirit of innovation in news journalism. One panelist, a blogging specialist, observed, “Journalism is the culture of infallibility. If you get something wrong in a story, then why do you exist? So, if you get something wrong with the platform that supports the story, it feels terrifying. And I think that’s the hardest thing to work against.” The executive editor of the Los Angeles Times online edition then explained the challenges in getting her group to “think more like a start-up,” and a representative of google news exhorted his colleagues to a more nimble, experimental approach to operational change, “the pursuit of perfection can really derail innovation...You need to make changes on a real-time basis...Rather than trying to plan in advance for every contingency, you just need to go out and do it.”

Yet, interestingly, later in the debate, all of the panelists uniformly condemned another dominant trend in online journalism toward republishing news agency feeds in lieu of producing original “unique content.” The blogging specialist contrasted an innovative and productive strategy of content management with informational automation when he declared, “If a site is just taking the wire content and reprinting it, they don’t deserve any traffic because that’s lame. That’s not journalism. You’re just having your robot machine repurpose it.” His colleagues applauded

and then echoed his point with their own critiques of algorithmic selectivity, arguing that good news journalism necessitated some artisanal or simply human investment in processes of selection, filtering, and republicization. Both the blogging specialist and his colleagues emphasized a praxiological understanding of the communicational and informational value of online news, yet it was an understanding that, unlike, for example, Marxian praxiology, did not seem overly concerned about the draining away of productive energies into spectral forms of mediation (see Boyer 2007). Where Marx drove a wedge between production and circulation in his critique of capital, the social ontology intuited within online journalism typically sees no contradiction. True to its cybernetic imagination, production is always already situated within the dynamic exchanges of a circulatory “system.” In Niklas Luhmann’s terms (2000), media are envisioned as “autopoetic,” self-generating at the level of a system of elements, forces, linkages, and operations.

### **Conclusion: Digital Expertise as Ideology**

In closing, I would like to return to the question of how to tie the anthropology of digital knowledge to the presence of digital knowledge in anthropology. The key to this connection comes in learning how to understand the formation of digital expertise in online journalism and anthropology as “ideological” in a very specific sense of that term. Contrary to much later wisdom, with *Ideologie* Marx meant not just the deformations of false and class consciousness and not just the “taken for granted” assumptions structuring knowledge (cf. Lukács on “reification” [1971] and Bourdieu on “doxa” [1990]). “Ideology” represented also, at a very basic level, a shielding of knowledge to its relational, social contingencies in order to create the stable ontic field of forces and forms requisite for all further action (and thought). Marx was interested, for example, in how Adam Smith was able to generate his labor theory of value at the precise moment that he did, and Marx reasoned that this great revolution in political economic theory had everything to do with the fact that institutions of industrial wage labor were leveling out the practical distinctions between different kinds of productive activity in Smith’s lifeworld (Marx and Engels 1978:240). As modes of labor became more interchangeable with one another and more monetarized, it became possible for Smith to intuit the homogenization of labor and to

articulate universal theoretical categories of Labor and Value that took little heed of qualitative distinctions between different modes of productive activity. Theoretical truth (the labor theory of value) reflected an emergent social truth (the industrial interchangeability and monetary interconvertibility of wage labor).

Of course, Smith did not himself perceive this ideological mediation of his theoretical work. He didn't recognize the environmental, historical transformation of productive activity that allowed him to think labor as Labor. Good bourgeois imperial presentist that he was, Smith felt Labor was a transhistorical, universal fact-as-it-was. Yet, this was no personal failure of "false consciousness" on Smith's part for the reason that, in Marx's concept, all knowledge (including expert knowledge) incorporates an invisible phoropter, a series of differentially refractive ideological lenses, the curvature of each ground by different aspects of productive activity, that aligned together guarantee a subjective experience of factual clarity and truthfulness. Although some might think themselves capable of recognizing the existence of the phoropter, none of us, according to Marx anyway, would be able to fully comprehend or experience our specific lens configuration since ideology's principal operation is to mark the domain of "the real" that exists beyond mediation. Put another way, there is no knowledge without ideology since who thinks or acts outside of some intuition of "the real"? Marx's analysis suggests that ideas emerge at the level of material relations and very much defined by specific social and historical configurations of productive activity, but these ideas are then transformed, through the *camera obscura* of ideological refraction, from contingent relational judgments into absolute universalist judgments. Practical intuition becomes truth through ideology.

I have suggested already that the cybernetic insights of both 20<sup>th</sup> century anthropology and of 21st century online journalism share a common environmental, historical legacy in the industrialization of electronic computation in the mid 20th century. They share further historical contingencies to be sure, not least postwar postimperial nationalism, which, in alliance with Keynesian statecraft, further projected a sense of national boundedness and systematicity within which individual citizens were mobile, circulating, productive elements.

But these contingencies, while undoubtedly highly significant, are also remote in many respects from the day-to-day practices and situations of

professional and institutional life. To argue for a direct causal relationship between industries of computation or politics of nationalism and cybernetic epistemology would be to miss, as Marx himself often did, many vital processes of epistemic mediation along the way. I would argue that with professional intellectuals like online journalists and anthropologists, we must also look for the ideological dimension of their digital expertise in their mundane productive engagements of instruments, artifacts, and discourses of digital information. As professional actors who work constantly and collaboratively with digital ICTs, perhaps it should not surprise us that online journalists understand their non-linear networked subjectivity at a very intuitive level (“the basis is *always* IT”), even though they retain confidence in their ability to flexibly manipulate content and media to “cut through” the dynamics and density of digital information enveloping their practice. Their experiential familiarity with digital ICTs, their productive reliance upon them, translates online journalists’ practical intuitions of networked subjectivity and content/medium management into the definitions and discourses—and, ultimately, into the truth—of digital expertise and digital power that we have just explored.

It is quite possible that parallel modes of experiential familiarity and practical intuition contributed to the cybernetic unconscious of the postwar human sciences as well. But this is a question whose answer lies beyond the scope of this article. Therefore, a next logical step in the analysis of anthropological knowledge in the digital age would be a deeper historical, ethnographic, and theoretical engagement of the role of digital ICTs in academic life (e.g., Kelty 2009), a conversation that has already begun to take shape in fields like communications and library science (see Gradmann and Meister 2008). We might link, for example, the rising intuitiveness of cybernetic and informationalist social theory to the more highly networked, fast-time modalities of academic labor with which we have become all-too-familiar since the 1970s. We might also consider the much-contested legacy of French poststructuralism in anthropology as a symptom of the limits of this intuitiveness, expressing the tension between our obvious existence as messaging, publicizing media professionals and our relative lack of professional investment with the full instrumentarium and circuitry of new media. Of course, this “lack” is changing even as I write this. Anthropology, and, more importantly, anthropologists, are increasingly accessing and exploring

digital culture whether through ethnography of virtual environments (Boellstorff 2008, Malaby 2009), blogging (Reed 2005, 2008), hacking practices and politics (Coleman and Golub 2008), and open source movements (Coombe and Herman 2004; Kelty 2004, 2005; Kelty et al. 2008), or through new digital modalities of anthropological conversation (via social networking sites like Facebook and blog communities like <http://savageminds.org>) and publication (<http://www.culanth.org>). What I hope that I have successfully demonstrated here through my case study of digital expertise in online journalism is that it is not only possible but necessary to link the truth regimes of expert knowledge to the experiential and material conditions of expert knowledge practices. Analyzing this connection will help us to understand in a more nuanced way why various schemata of expert knowledge take the specific forms and contents that they do. And, of course, this goes for dominant paradigms within anthropological theory as well.

#### **ACKNOWLEDGMENTS**

I gratefully acknowledge the Alexander von Humboldt Foundation in Bonn, Germany, which funded much of the research upon which this essay is based. I would also like to give special thanks to my colleagues at the Institut für Kulturanthropologie und Europäische Ethnologie at the Goethe-Universität Frankfurt, especially to Prof. Dr. Gisela Welz, for their constant support and inspiration throughout my research. Some of the ethnographic material was presented at the 2007 AAA conference, and I thank Patrick Eisenlohr, Webb Keane, and William Mazzarella for excellent comments in that context. Debbona Battaglia, Alex Dent, Jim Faubion, Cymene Howe, and two anonymous reviewers for *AQ* were exceptionally helpful and inspiring in the making of this article. My deepest thanks goes to the German and US journalists who shared their expertise with me in the context of my fieldwork.

#### **ENDNOTES**

<sup>1</sup>I emphasize “western” here pointedly since at least to date trends such as audience migration to internet news sources have had a much larger impact in European and North American news journalism than anywhere else in the world. For example, the release of a Pew Research Center report in December 2008 (Pew 2008) showing that for the first time more US residents (40%) surveyed reported getting most of their national and international news from the internet than from newspapers (35%) kindled fierce debates in news professional circles over the inevitable decline and perhaps even death of the newspaper. Yet, these debates paid little heed to the fact that newspaper circulation and advertising revenues are still generally rising across Asia, Latin America, and the Middle East (see <http://www.wan-press.org>). In general, western news journalists assume the trajectory of global news is following their own, and so they speak of universal conditions of transformation.

<sup>2</sup>All interviewee names are pseudonyms.

<sup>3</sup>As of the publication of this article, it appears that the limits on unique online content production in German public broadcasting will be upheld for the foreseeable future. The twelfth RStV (which went into effect on May 1, 2009) upheld the current restrictions on online content production to “*sendungsbezogene*” (broadcast-related) material.

<sup>4</sup>Helga is talking here both about the organization of work process into narrowly defined functional tasks and about the temporal organization of broadcasting via programmed timeslots.

<sup>5</sup>George is taking as his model news agency organizations (“wires”) like the Associated Press, which typically produce different versions of the same news stories configured for the temporal and textual needs of different news platforms (e.g., short, fast bulletins for news television and longer texts with image bundles for newspapers).

<sup>6</sup>By the “radial” potentiality within electronic mediation, I mean a typically unidirectional hub-spokes pattern of messaging from a broadcast locus to a field of receivers. I am contrasting this to the “lateral” potentiality, which refers to electronic mediation’s parallel capacity for bidirectional or multidirectional messaging within a network of producer-receivers. Terrestrial radio and television broadcasting is a classic example of radial communication and telephony a classic example of lateral communication. However, one finds these potentialities recreated in new digital ICTs as well, if often with greater flexibility and hybridity—podcasting, for example, is a radial mode of communication and SMS (text messaging) a lateral mode, with more recent hybrids like Twitter balancing the two potentialities in interesting ways.

## REFERENCES

- Balkhausen, Dieter. 1978. *Die dritte industrielle Revolution: wie die Mikroelektronik unser Leben veränderte*. Düsseldorf: Econ-Verlag.
- Bateson, Gregory. 1987. *Steps to an Ecology of Mind*. Northvale: Jason Aronson.
- \_\_\_\_\_. 2002. *Mind and Nature: A Necessary Unity*. Cresskill, NJ: Hampton.
- Bell, Daniel. 1973. *The Coming of Post-Industrial Society: A Venture in Social Forecasting*. New York: Basic Books.
- Boczkowski, Pablo. 2004. *Digitizing the News: Innovation in Online Newspapers*. Cambridge: MIT Press.
- Boellstorff, Tom. 2008. *Coming of Age in Second Life*. Princeton: Princeton University Press.
- Bourdieu, Pierre. 1990. *The Logic of Practice*. Stanford: Stanford University Press.
- Boyer, Dominic. 2005. *Spirit and System: Media, Intellectuals, and the Dialectic in Modern German Culture*. Chicago: University of Chicago Press.
- \_\_\_\_\_. 2007. *Understanding Media: A Popular Philosophy*. Chicago: Prickly Paradigm Press.
- \_\_\_\_\_. (n.d.) “The Life Informatic.” Unpublished ms.
- Coleman, Biella and Alex Golub. 2008. “Hacker Practice: Moral Genres and the Cultural Articulation of Liberalism.” *Anthropological Theory* 8(3):255-277.
- Collier, George A. 1975. “A Reinterpretation of Color Nomenclature Systems.” *American Ethnologist* 2(1):111-125.

- Coombe, Rosemary J. and Andrew Herman. 2004. "Rhetorical Virtues: Property, Speech, and the Commons on the World-Wide Web." *Anthropological Quarterly* 77(3):557-572.
- Deuze, Mark. 2008. "Toward a Sociology of Online News." In C. Paterson and D. Domingo, eds. *Making Online News: The Ethnography of New Media Production*, 199-209. New York: Peter Lang.
- Dupuy, Jean-Pierre. 2000. *The Mechanization of the Mind: On the Origins of Cognitive Science*. Princeton: Princeton University Press.
- Foucault, Michel. 1979. *Discipline and Punish*. New York: Pantheon.
- \_\_\_\_\_. 1980. *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977*. New York: Pantheon.
- Freud, Sigmund. 1900. *Die Traumdeutung*. Leipzig: F. Deuticke.
- Galison Peter. 1994. "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision." *Critical Inquiry* 21:228-66.
- Geertz, Clifford. 2000. *The Interpretation of Cultures*. New York: Basic Books.
- Gradmann, Stefan and Jan Christoph Meister. 2008. "Digital Document and Interpretation: Re-thinking "Text" and Scholarship in Electronic Settings. *Poiesis Prax* 5:139-153.
- Gramsci, Antonio. 1971. *Selections from the Prison Notebooks*. New York: International Publishers.
- Haraway Donna. 1991. "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century." In D. Haraway, ed. *Simians, Cyborgs, and Women*, 149-81. London: Free Association Books.
- Hayles, N. Katherine. 1999. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: University of Chicago Press.
- Heims, Steve J. 1993. *Constructing a Social Science for Postwar America: The Cybernetics Group, 1946—1953*. Cambridge: MIT Press.
- Humphreys, Peter J. 1994. *Media and Media Policy in Germany*. Providence: Berg.
- Kelty, Christopher. 2004. "Culture's Open Sources: Software, Copyright, and Cultural Critique." *Anthropological Quarterly* 77(3):499–506.
- Kelty, Christopher. 2005. "Geeks, Internets, and Recursive Publics." *Cultural Anthropology* 20(2):185-214.
- \_\_\_\_\_. et al. 2008. "Anthropology of/in Circulation: The Future of Open Access and Scholarly Societies." *Cultural Anthropology* 23(3):559-588.
- \_\_\_\_\_. 2009. "Collaboration, Coordination, and Composition: Fieldwork after the Internet." In J. Faubion and G. Marcus, eds. *Fieldwork isn't what it used to be*, 184-206. Ithaca: Cornell University Press.
- Kittler, Friedrich A. 1990. *Discourse Networks 1800/1900*. Stanford: Stanford University Press.
- Klinenberg, Eric. 2005. "Convergence: News Production in a Digital Age." *Annals of the American Academy of Political and Social Science* 597:48–64.
- La Mettrie, Julien Offray de. 1748. *L'Homme Machine*.
- Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge: Harvard University Press.
- Lévi-Strauss, Claude. 1966. *The Savage Mind*. Chicago: University of Chicago Press.
- Luhmann, Niklas. 2000. *The Reality of Mass Media*. Stanford: Stanford University Press.

- Lukács, Georg. 1971. *History and Class Consciousness: Studies in Marxist Dialectics*. Cambridge, MA: MIT Press.
- Malaby, Thomas. 2009. *Making Virtual Worlds: Linden Lab and Second Life*. Ithaca, NY: Cornell University Press.
- Marx, Karl and Friedrich Engels. 1978. *The Marx-Engels Reader*. R. C. Tucker, ed. New York: Norton.
- Mazzarella, William. 2006. "Internet X-ray: E-governance, Transparency, and the Politics of Immediation in India." *Public Culture* 18:473-505.
- Meyn, Hermann. 1994. *Massenmedien in der Bundesrepublik Deutschland*. Berlin: Edition Colloquium.
- Negroponte, Nicholas. 1995. *Being Digital*. New York: Vintage.
- Paterson, Chris and David Domingo, eds. 2008. *Making Online News: The Ethnography of New Media Production*. New York: Peter Lang.
- Pew Research Center. 2008. "Internet Overtakes Newspaper as New Outlet" (online at <http://people-press.org/report/479/internet-overtakes-newspapers-as-news-source>)
- Pickering, Andrew. 2002. "Cybernetics and the Mangle: Ashly, Beer, and Park." *Social Studies of Science* 32(3):413-437.
- Poster, Mark. 2000. *The Information Subject*. London: Routledge.
- Rappaport, Roy A. 1971. "Ritual, Sanctity, and Cybernetics." *American Anthropologist* 73(1):59-76.
- Reed, Adam. 2005. "'My blog is me': Texts and Persons in UK Online Journal Culture (and Anthropology)." *Ethnos* 70(2):220-242.
- \_\_\_\_\_. 2008. "Blog This: Surfing the Metropolis and the Method of London." *Journal of the Royal Anthropological Institute* 14:391-406.
- Richardson, George P. 2001. *Feedback Thought in Social Science and Systems Theory*. Philadelphia: University of Pennsylvania Press.
- Sahlins, Marshall. 1976. *Culture and Practical Reason*. Chicago: University of Chicago Press.
- Time* magazine. 1950. "The Thinking Machine." January 23. (Available online at <http://www.time.com/time/magazine/article/0,9171,858601,00.html>)
- Wiener, Norbert. 1948. *Cybernetics, or Control and Communication in the Animal and the Machine*. Cambridge: MIT Press.
- \_\_\_\_\_. 1950. *The Human Use of Human Beings: Cybernetics and Society*. New York: Avon Books.
- Williams, Raymond. 1974. *Television: Technology and Cultural Form*. London: Fontana.

