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Commentary

The new ecology of information: how the social media revolution challenges the university

In a searing critique of the Bush Administration, William Connolly identifies how an "evangelical-capitalist resonance machine" operated in diverse cultural sites to establish an ethos that defined a political project that ranged from individualised behaviours to global geopolitics (2008, chapter 2). Far from being a mechanical device, this machine, comprising individuals, media outlets, political groups, and corporate actors, is an "assemblage" that "imbricated, intercalated, infused [and] incorporated" its elements in ways that did not require centralised control but was more than the sum of its parts (page 1). In Connolly's formulation, this transformed our understanding of causality into an appreciation of how

> "relations of dependence between separate factors ... [morph] into energized complexities of mutual imbrication and interinvolvement, in which heretofore unconnected or loosely associated elements ... *fold, bend, emulsify, and resolve incompletely into each other*, forging a qualitative assemblage resistant to classical models of explanation" (2008, pages 39 – 40, emphasis in original).

Responding effectively to this social and political formation (which survives notwithstanding Obama's electoral victory) demands a counterethos that

> "must find expression in the work that we do upon ourselves as individuals and in a variety of collective processes such as state policies, inventive film, media life, church sermons, investment movements, work life, family life, consumption habits, modes of advertising, states laws, judicial appointments, electoral politics, and constitutional decisions. It must secure a foothold in several venues to establish a solid grip in any" (Connolly, 2008, page 16).

Media practices, because they are central to the capitalist assemblage, are one significant domain, and Connolly observes "we need to acquire new media skills to counter the political formula of the Christian-capitalist right" (2008, page 37). Identifying and developing such skills depends upon appreciating how the media has changed over time and is currently undergoing radical transformations.

From this stepping-off point, I want to consider how recent changes in media—brought on by developments in the World Wide Web, its impact on established news outlets, and the rise of social media—have dramatically altered what these "new media skills" might be. As such, I am concerned with the skills of *new media* rather than simply *new* media techniques. Moreover, given the prominence now being accorded to "impact" in the future audit of UK academic research, I want to consider what these "new media skills" might mean for the creation and circulation of critical work emanating from the university.

The death of newspapers and the end of journalism?

The way news and information is reported and delivered to citizens is undergoing profound transformations, especially in the United States and Europe. In 2008 – 2009 commentary has been rife with claims about 'the death of newspapers', the end of journalism, and the impact this crisis will allegedly have on democratic politics (Rosen, 2009). In the US the transformation of the media economy has been mapped on *Paper Cuts* (http://graphicdesignr.net/papercuts/), which records company closures and job losses in journalism. With high-profile newspapers like the *Christian Science Monitor* and *Seattle Post Intelligencer* giving up print and moving online, and the

Rocky Mountain News shutting for good after 150 years, the decline of traditional news outlets has been hard to miss. In the UK the local and regional press has been equally hard hit, with half of that sector facing closure in the next few years. It is clear the established outlets of the print media economy are vulnerable.

The reasons for this transformation are long and complex—a combination of structural changes in media throughout the postwar period and the cyclical pressures of the current global recession (Campbell, 2009a). The Internet has intensified the problem for traditional news organisations, but with advertising revenue, circulation, and readership in steady decline since the 1960s, the Web is not solely responsible for the demise of established news outlets. Nonetheless, the failure of corporate media to continue to produce vast profits has given rise to a claim that, if newspapers go under, we are in danger of losing a public good and community service, as though all branches of the mainstream media were staffed by contemporary versions of Carl Bernstein and Bob Woodward striving to expose a corrupt government (rather than the more common support for conventional power, as exhibited in *The New York Times*'s uncritical coverage of the rationale for the invasion of Iraq, for example).

These nostalgic concerns fail to appreciate how the consumption and production of news have changed in recent times. In 2008 more Americans got their news online than from print (*The Guardian* 2008), reflecting a trend in which people consume information not by reading individual titles but by searching the Web for specific articles from a variety of sources and then accessing them through a variety of platforms (increasingly the mobile phone). Titles like *The New York Times* have garnered tens of millions of occasional users, a total far in excess of their print readership. They have not, however, been able to 'monetise' this popularity to create new sources of revenue.

The production of news has become similarly distributed. In Britain the controversy surrounding the police's handling of the G20 riots in March 2009 was made possible by an individual's private video being championed by a major new organisation (*The Guardian* 2009a). Similarly, the parliamentary expenses scandal was the product of an independent journalist's five-year campaign being purchased by a daily paper (*The Daily Telegraph* 2009), with the hundreds of thousands of documents subsequently released analysed by citizens in a 'crowd sourcing' experiment (*The Guardian* 2009b). Similar collaborations made global news, such as the video of Neda Agha-Soltan's death in Teheran circulating through the world's media after it was uploaded to YouTube (*The New York Times* 2009a). The claim that the financial problems of newspapers as corporate entities are synonymous with the alleged end of journalism as a critical practice thus misses many of the features central to news in the new media landscape.

Towards a new media ecology

The significance of the World Wide Web for critical journalism is that it has created a new ecosystem for information (Shirkey, 2008, page 60). Newspapers have seen the Web as simply a competitor in the existing ecosystem—thereby failing to appreciate that, in slashing the cost of publishing to near zero, the Web has largely removed the barriers to both the circulation of information and the possibility of social organisation. According to Clay Shirkey, "we are living in the middle of a remarkable increase in our ability to share, to cooperate with one another, and to take collective action, all outside the framework of traditional institutions and organizations" (2008, pages 20–21). Jeff Jarvis (2009) has argued that these developments have given rise to a "link economy" in which value is found through connections to networks of people and ideas. The link provides access to a conversation that is open, distributed, global, collaborative, and searchable. Together, these developments make up the social media revolution.

Above all else, the social media revolution is enabled by the separation of information from its means of distribution (Stacey, 2009). This is the feature occluded by those who wrongly equate the demise of newspapers (the means of distribution) with the end of journalism (the practice and information). Moreover, the public good of journalism in the age of the Internet comes from embracing the challenges of the new ecology of the Web, especially the vastly expanded possibilities of circulation and distribution. Shirkey (2009) has argued this recently by calling attention to how a 2002 *Boston Globe* investigation of child abuse by Catholic priests in Boston travelled from its Massachusetts origin to a global community of Catholics, mobilising social groups along the way and ending with the Church having to take action internationally (such as in the Irish government report on abuses in the Dublin Archdiocese).

Shirkey's argument is that it was the *forwarding* of the original article, rather than just its publication, that enabled people to mobilise and force authorities to act. Circulation was what gave the story value as a public good. So, although traditional media proprietors like Rupert Murdoch rail against the ease of Web circulation and linking (and propose financial and legal barriers to what they see as the 'promiscuous' use of their content), both Jay Rosen and Clay Shirkey (2009) demonstrate that in the new ecology of the Web this forwarding (or 'super-distribution') of information and its public reuse are a condition of possibility for the very democratic ethos and public virtue media proprietors say they are desperate to defend. Forwarding information to journalists to cross check and challenge their stories can make their stories better, and journalists' stories get forwarded to people who are the most relevant, thereby enabling social action.

This is not to claim, though, that the Internet automatically democratises society. Indeed, the "evangelical-capitalist resonance machine" Connolly identifies—especially the global networks of televangelists—has made extensive use of new media to propagate their bigotry. Likewise, Mathew Hindman's (2008) analysis of political blogs and websites pours cold water on the claim that these have necessarily made the American public sphere more inclusive. However, my point here is more limited and concerns the logic of two positions in the ongoing debate about the future of newspapers in the digital age. Traditional media proprietors who want to charge for online content (through micropayments or subscription services that constitute a 'pay wall', which can be a comprehensive barrier or a metered system like *The New York Times* is proposing to implement in 2011) justify the limit on circulation this will impose by saying it is the price of funding journalism that is a public good. In contrast, those who highlight the social value of 'super-distribution' argue that the unfettered circulation of and linking to this journalism is as much a public good as its original production. I side with the latter view and argue that charging for daily news content will not only fail to produce sufficient revenue to reverse the losses journalism has suffered but it will also undermine the sharing of information central to the new ecology of the Web.

The challenge for academics and universities

No sector of society will escape these social media revolutions. The question is how—despite not knowing what the end result of change will be—they will react to them and develop with them, so we need to focus on our place in this. Connolly (2008, chapter 3) calls for changes in the ethos of academic life as part of the development of a counter-ethos, and I want to argue that these changes have to include dimensions of both teaching and academic publishing.

As a site central to the production and dissemination of knowledge, the modern university finds itself occupying a position with many parallels to the established newspaper in the new media economy. I will suggest below that universities are largely failing to grasp the opportunities arising from these revolutions. This is because university managers are wedded to some very traditional modes of distributing information—with ‘distribution’ incorporating both aspects of teaching and the bulk of academic publishing—that need to be challenged. Of course, given the diversity in higher education, such generalisations always have exceptions. But I will argue that, if we are to progress as these revolutions shake down, universities are going to have to grasp the challenges and (most importantly) the opportunities that flow from breaking the link between information and distribution.

What happens to the university when we move from mass production to the link economy?

The forces of mass production have shaped universities. Knowledge is divided into disciplines, experts variously distribute content to audiences (often in lectures that resemble monks delivering sermons), and auditors judge their enterprise through measurements of supposed utility. It is hardly surprising, then, having detailed how the new ecosystem of the link economy transforms the creation of value, when Jarvis asks “Who needs a university when we have Google?” (2009, page 210). That is designed to take a professor’s breath away.

In claiming that coursework involves memorising facts obtained through search engines, Jarvis ignores the many educators who have always been concerned with process rather than product in learning. And he does affirm the cultural value of institutions of higher education. But his question is a great one if we want to address how our institutions are going to adapt. For Jarvis the link economy makes five demands:

- Produce unique content with clear value.
- Open up so you can be found—if you aren’t searchable, you won’t be located.
- When you get links and audiences, find ways to benefit from them.
- Use links to find new efficiencies—do what you do best, and link to the rest.
- Find opportunities to create value atop this link layer.

If you asked your average university administrator what this meant for them, they would probably suggest nothing more than a website redesign. Although I am one of the last people who would suggest universities should swallow whole the lessons from business studies (as wrong-headed attempts to do so are the cause of much anti-intellectualism in UK higher education at the moment), many of Jarvis’s principles should prompt us to think hard about what the social media revolution means for universities in the 21st century.

Thinking of research and scholarship in terms of producing “unique content with clear value” makes sense *so long as value includes cultural and social value, not simply economic*, and so long as the idea of creating “value atop this link layer” opens up creative possibilities for developing the idea of ‘curation’ in relation to how educators will use their expertise to enhance the process through which students and wider audiences engage with information (see Campbell, 2009b).

What does it mean to go from broadcasting to engagement?

Opening up in the link economy also means altering the ethos of teaching, moving it away from the broadcast structure of the lecture to new modes of student engagement. Professors will cease to be people who ‘profess’ and become people who curate flows of information, establishing the conditions of possibility for critical collaboration. Of course, not all university teaching proceeds by broadcast, and of course, there are many who strive for engagement now.

Still, a recent move by the Massachusetts Institute of Technology to small group teaching for its physics courses shows how persistent and popular the lecture as a mode of distribution has been among both students and teachers (*The New York Times* 2009b).

The important work of Michael Wesch (2008; 2009) demonstrates how the new structures of digital information can address common student complaints about the broadcast model. Wesch agrees that there are many educators who hope to subvert the system, but a combination of the physical learning spaces and the social structures of evaluation, promotion, and tenure mean that too many efforts at engagement are constrained by the limits of traditional institutions. Some proof of this is evident at my university, where the new 'learning centre' is dominated by two huge, 'fixed tiered-seat lecture theatres' that can hold hundreds at a time, and the refurbishment of a departmental teaching room brought rows of seats bolted to the floor, facing forward.

The new ecology of the Web and its impact on the structure of information requires a fundamental rethinking of pedagogy. However, this does not mean that education inevitably migrates online. Students are often initially against change because they feel it is a step towards a virtual process with no personal contact. What is needed, as Wesch argues, are ways to leverage the social media environment for a pedagogical process that is open, collaborative, linked, distributed, and above all else, engaging.

Why does academic publishing subscribe to pay walls?

If lectures are teaching's mode of distribution, then journal articles and books are the primary way academic research is circulated. But if the link between information and distribution is being broken, we have to ask whether the article and the book are the best means to achieve the desired end.

As the author of many articles and a number of books, I am far from being opposed to them as delivery vehicles. Like Robert Darnton (2009a), I believe there is a strong case to be made for books. The book, however, has long been under pressure (Modern Language Association, 2002). Universities that once subsidised their own presses have cut back, and libraries, which are the principal purchasers, have slashed budgets, meaning that the vast majority of research monographs containing original work will sell a few hundred copies at best. (I once heard a photographer bemoan the fact his expensive book had sold "only" 7000 copies—if only the bulk of academics could complain about such numbers!) The result is that getting research published via the book route has become more difficult.

The Web offers two opportunities here. The first involves replacing print publication with online publication, trading in the tactile page for the screen reader. Over time that might become more appealing as the technology of e-books and computer tablets develops, but the digitisation of the printed word has both aesthetic and utility limits, and that is even without considering the complex issues around developments like Google's book scanning project [see Darnton (2009b) for a negative view of this].

The second, and more significant opportunity for academia, comes from the digital publication (via commercial print-on-demand services) of monographs. But the question of reputations and how they are judged then looms large. The monograph remains important for how academics are judged by their peers for promotion. Having a book released by a university press is regarded as prestigious and a path to success, so opting to go with commercial operations like Blurb (http://www.blurb.com/) or Lulu (http://www.lulu.com/) is thought of as a form of vanity publishing and not (yet) professionally possible. The social structures would need to change, but there is no reason why digital publications cannot be edited and peer reviewed just like traditional presses while also providing the information in a printed form that is more widely available in a shorter time at a cheaper price.

While books are favoured in some fields, in the social sciences journal articles are increasingly the preferred mode of delivery. In geography in the UK, more than 86% of assessed research outputs were journal articles (Richards et al, 2009, page 3).

But with these articles a perverse business model is at work. Academics do the research and write the article. They then submit it to a journal that is edited by other academics, which sends the paper to fellow academics for review. Neither of those roles is paid directly; the tasks are regarded as part of one's professional commitments. If the reviews are good and the article is published, it appears in a volume that is then purchased by an academic who is an individual subscriber or by a university library that is an institutional subscriber, or it might come as part of membership to a professional association that has subsidised its publication. If a company owns the journal title published in this way, the profits are predominantly theirs.

If newspapers had operated this way there would be no crisis in journalism—if media companies could get content for free and then sell it back to the people who produced it in the first place, the return to investment ratio would have been phenomenal. With individual subscriptions of £25 – 50 per year, and institutional subscriptions often *ten times* that, journals have become lucrative enterprises for many commercial publishers, hence the proliferation of more and more specialised titles.

In the terms of the current debate about the 'death of the newspaper'—where this commentary began—this means that academic publishing operates a system of comprehensive and very high pay walls, behind which nearly all original research is corralled. The mainstream media would like to adopt a similar strategy in order to defend its print titles and contain the challenges of the Web. Towards the end of 2009 Rupert Murdoch and his lieutenants launched a public relations offensive to paint search engines and Web aggregators (who direct Internet traffic through the link economy to news sites) as 'thieves' and 'parasites'. It was an effort designed to pave the way for restricting free access to news corporation websites through various paid content models. Most assessments of subscription schemes for the Web conclude they have failed, or will fail, because they generate little direct revenue, drive traffic away, and undercut the value that arises from circulation (Campbell, 2009c).

We should view the economy of academic publishing in terms similar to the critique of paid content in the mainstream media. If the desire is for research to have an impact on the wider community, the pay walls that surround our principal distribution platforms (ie journals) are a highly restrictive barrier. If someone outside academia wanted an individual article that was found via search, the payment demanded would be anything but 'micro'. I searched for one of my articles on war photography and found the university press publisher of the journal charges £20/$30 for this single item. I would be surprised if anyone, especially outside academia, had ever made such a purchase.

The doubly perverse nature of the established economy of distribution stems from the fact that university managers are requiring academics to publish in these pay-wall-protected journals in the name of 'impact' while simultaneously demanding that the research in those articles has a wider reach beyond the bounds of the academic community.

The particular understanding of impact here is the 'impact factor', which measures the number of citations to articles published by a given journal over two years. Taking the total number of references to articles in one journal made by articles in other journals, divided by the number of articles published in the first journal, gives a number that is 'the factor'. For example, the highest impact factor in a human geography journal in 2008 was 3.967. That journal published sixty articles in 2006 – 07, and those articles were cited elsewhere 238 times.

What is immediately obvious are the very small numbers we are dealing with—sixty articles being referenced 238 times over two years. Citation is a subset of readership, so this does not report the total number of people who read an article without citing it. But even if the readership is substantially higher, that comes from a limited community—those who have access to the journals behind the pay wall. Numbers detailing online usage of academic journals are hard to come by, but one statistic I have seen (from another major geography journal) revealed that in a year this publication, with a few thousand global subscribers, had more than 150 000 article downloads—which in terms of Web traffic is pretty small, but hardly surprising given the way this content is blocked-off from a wider audience.

The emphasis placed on journal impact factor as a measure of a journal's importance has been regularly criticised, even by research scientists who are sometimes seen as favouring quantitative measures (see *British Medical Journal* 2004; Colquhoun, 2007; *PLoS Medicine* 2006). These objections note how the statistics can be manipulated, but most importantly they reveal that, although the impact factor has become an indirect scale of quality, playing a big part in career evaluations, it does not square with the judgements of quality that peer review panels make (Richards et al, 2009). Journal impact factor is not the only quantitative measure of how academic research circulates. The delightfully named "Publish or Perish", which is free software from Harzing.com, uses Google Scholar to provide data. But whatever measure or package is used none can get around the fact they are only measuring some form of significance within a tightly restricted community.

How can we really have an impact?

To drive academic research into journals behind pay walls contradicts the growing emphasis, especially in the UK, on such research having significance beyond the university. There is much that is disturbing about this government-inspired effort which, as one newspaper headline put it recently, is designed to weed out "pointless" studies (*The Guardian* 2009c). It depends either on a remarkably narrow understanding of 'impact' that makes economic value primary, or it depends on an extremely vague sense of impact (such as contributions to 'quality of life') that will be impossible to specify in the quantitative terms so badly desired by the auditors.

The problem with this bean-counting approach is also that it relies on a broadcast model not dissimilar to the relationship between the student and the lecture. Researchers are supposed to, prior to their work, complete an "Impact Summary and Impact Plan" detailing who will benefit and how. This implies the one-way transmission of known findings to a passive audience, something that is underpinned by an extensive university bureaucracy tasked with enabling 'knowledge transfer' and 'public engagement' (usually understood as involving the mainstream media). This bureaucracy is designed to extract academic research from the subscription silo to which the demand for journal publication has condemned it. When you factor in the enormous amount of time it takes to satisfy such bureaucratic demands, combined with the long lead times of academic publication (one to two years), then everything is stacked against the stated goal of impact in the broadest sense being achieved. So what should be done?

The first thing to say is that thinking through the issue of impact in its broadest sense must *not* involve questioning the legitimacy of research or scholarship on what at first glance might appear to be an obscure topic. It's common for nonacademics to have a swipe at people in 'ivory towers' pursuing things not popularly understood. But who is to say, prior to its circulation, development, and reception, what will become significant, how it will become significant, and when it will be significant?

That said, we can guarantee obscurity for academic research by cutting it off from the collaborations and engagements taking place in the distributed, global conversation that the new information ecology of the Web makes possible. It is counterproductive for university managers to insist—especially in the name of impact that assumes quality—on research being published by restricted outlets. None of this leads to the conclusion that we abolish book publishing or end academic journals. It is not an either/or choice. What it means, though, is we have to modify those modes of distribution so they can take advantage of what the Web can do for publishing and then connect them with other networks of communication, dissemination, and engagement.

Some of this is already happening, as detailed by Michael Nielson's (2009) interesting account of the disruptions in scientific publication. Specialist blogs, video channels, web journals of visualised research, and new ways of managing and searching papers are all emerging as researchers explore the new distribution possibilities enabled by the Web. I was recently part of a consortium that proposed such a model for the editorship of a major journal in international studies, but the governing association was not convinced by the evidence for a new approach (see Grayson, 2009).

Some time ago academics moved against the restrictions of commercial journals by promoting open-access alternatives. While successful in some areas, these initiatives failed to defeat the traditional system because they could not offer, as new start-ups, the same reputational economy of the established outlets. But a journal is just a means of distribution, with its research value coming from its editors and the peer review system. When those individuals and their practices are prepared to jump the pay wall and publish content free on the Internet, then we will have the makings of true open access and the widest possible impact, without the need for any bureaucracy to make it so. And making research available in this way will feed back into changing the practice of teaching away from the broadcast model and towards an ethos of communication and engagement with publics at large.

Connolly notes that in the construction of a counterethos to the resonance machine that governs our politics, change "would be energized by micropolitical efforts to visualize a better future" (2008, page 116). Embracing the dynamics of the social media revolution in the production and distribution of information generated through our work in universities would be one such micropolitical effort. Who knows where it might lead?

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