

CHAPTER 2

SUSTAINING CRITICAL LITERACIES IN THE DIGITAL INFORMATION AGE: THE RHETORIC OF SHARING, PROSUMERISM, AND DIGITAL ALGORITHMIC SURVEILLANCE

Estee Beck

The University of Texas at Arlington

What does *sharing* mean in social media? Is the sharing of thoughts, videos, music, and other such digital compositions the sole purpose of sites like Facebook, Twitter, and SnapChat? Does sharing content with others imply a type of digital self or identity? Do social media companies also share in user-generated content by providing a space for people while at the same time taking and collecting metadata about their online activities? And, if this is the case, how do these companies share user metadata with advertisers and other third parties, like governments and large corporations? What is the role social media companies have in sharing how they benefit from user-generated data? Are these sites helping to sustain divisions in face-to-face relations because people reach for a screen during uncomfortable moments? Or, might it be true that these social media websites bring people closer together since people broadcast their lives to others on a regular basis?

Granted, social media encourages people to share information, to be digital citizens who comment on cultural, social, and political concerns in global and local communities. At the same time, many social media websites mine individuals' log data and web histories (albeit designed as a "personalized" experience) for billions of advertising revenue. On the surface, the opt-in rhetoric of *sharing*—connecting, networking, and supporting others—encourages people to engage with the proprietary and template-driven design to bring people together, not drive them apart. In many ways, the relationships people and social media sites forge rests upon a prosumer model of interaction. As people produce and

consume content in Web 2.0 spaces, they also become the users and products of social media because of the range of data tracking and surveillance technologies monitoring and recording user actions. The larger issue at stake with *sharing* in social media arises from contrary models of sharing from a prosumer perspective and the opaque, but oftentimes invisible, hand of capitalism. Sharing—built on ownership and control—allows for reciprocity, trust, and at its best, altruism. Yet, despite the best intentions of Silicon Valley’s attempt to capitalize on the rhetoric of sharing, a dark side reveals itself through capitalistic exploits of unpaid labor of its users and digital algorithmic surveillance to persuade people to certain actions and beliefs both online and off.

By examining the convergence of prosumerism as a response to shifts from the industrial era to the information era, and by briefly considering how rhetoric and composition scholars and the ideology of the open-source movement contend with prosumerism as a model without financial gain, I suggest that market-driven prosumerism will continue to thrive in the digital information age. However, I argue that it is up to educators, especially writing teachers, to sustain critical literacies in their classrooms in service of connecting, and possibly subverting, the market-driven prosumerism for an exchange benefiting humankind without financial incentive. Why do I make this argument? I believe the connection is important for writing teachers to make as oftentimes writing courses provide students with the means to consider possibilities for positive change to policy, procedure, and values—all with the power to enact such change through writing. One way we might facilitate such an opportunity is through a civic education by asking students to closely attend to the ideological freight in our online lives and spaces. However, it is first helpful to dive into historical considerations of prosumerism, then move to how such a model plays out on social media spaces with digital algorithmic surveillance—or how companies use mathematical formulas to track what people do online—to understand the larger role of writing teachers may play with critical literacy and civic education.

PROSUMERISM FROM THE INDUSTRIAL TO INFORMATION ERA

Prosumerism developed in the 1980s through American writer Alvin Toffler’s 1980 work *The Third Wave*, wherein he described civilization’s development in three waves: the agricultural revolution (first wave), the industrial revolution (second wave), and the information age (third wave). Each wave advanced and expanded as distinct political, economic, and social apparatuses to increase the social order, organization of activities for the common public, and sustainability of labor. For example, in the first wave, “land was the basis of economy, life, cul-

ture, family structure, and politics” (p. 21) with clear divisions of labor among the various classes in societies, and with many people assuming the role of a jack-of-all-trades. The second wave expanded on the foundation of the common public by introducing mass industrialization and consumption, introducing skilled laborers, and centralizing governments and economies. The third wave synthesized the labor practices of the first and second waves with consumers performing the tasks of specialized laborers (e.g., a grocery self-checkout lane places the labor of scanning and bagging groceries upon the buyer instead of relying upon the skilled labor and knowledge of a grocery store checkout clerk). Additionally, the function of labor in the third wave assumes a do-it-yourself ethos based on the notion that people can fulfill many of their everyday tasks as empowered individuals. Consequently, corporations, businesses, and non-profits outsource labor to consumers with the hype of self-reliance, adaptation to changes, and educational resilience for learning how to make and create products without compensation for labor. Thus, the prosumer is a person who produces labor to consume goods and services that are also available in the marketplace. IKEA’s build-your-own furniture, self-service gas pumps, automated teller machines (ATMs), store-purchased medical kits (diabetes, pregnancy, etc.) are just a handful of examples of prosumerism. While many of Toffler’s ideas are rooted in the historical and cultural mechanisms of his day (e.g., he makes mention of refrigerators with 1-800 numbers for people to call to repair their products on their own), much of what he forecasted has become commonplace in the information age. Currently, millions of people in high-technology cultures live in the third wave and are prosumer citizens.

With the development of the do-it-yourself culture in the 1980s, and the evolution of the World Wide Web turned Internet in the 1990s, prosumerism has expanded in scope from Toffler’s early contributions. In straddling the shift from the industrial revolution to the information age during the 1980s, prosumerism congregated around the labor practices of products and services from the industrial era before moving into online spaces. With the rapid development of old media (telephones, televisions, and their corresponding networks), information distribution began a de-centralization process during this period. This development fostered the spread of DIY culture through various communication channels, periodicals, radios, telephones, and televisions through paid advertisements. The first home pregnancy test advertisement appeared in *Made-moiselle* magazine in 1978 (National Institute of Health, n.d., p. 7). And, Service Star Hardware aired a 30-second spot in 1982 promoting their do-it-yourself discounted items available in their stores (Service Star, n.d.). Gradually advertisements featured products and services promoting consumer labor as a way to save time and money. In the case of do-it-yourself culture, self-help books and

information saturated bookshelves during the 1980s and 1990s, and big-box retailers promoted ways for consumers to build and create at home instead of relying on craftsperson labor. When the World Wide Web came into existence in 1994, the infancy of the network allowed people to create static websites using HTML; however, subscription-based companies like CompuServe, Prodigy, and America Online helped popularize the Web for people. From 1994 to 1999, the Web experienced rapid growth; companies, governments, and organizations latched onto online spaces and began commercializing websites with advertisements. Most of the early adopters of online advertising, especially for websites without a subscription, made claims that the advertising helped pay for server space and other overhead costs. But, the practice of marketing to people online became institutionalized, and in order for advertisers and programmers to understand how people interacted with marketing content (and websites in general), tracking technologies developed to monitor user actions. The prosumer model evolved from its origins; Internet companies relied upon the unpaid labor of people clicking around online to generate revenue.

Despite the fact that Toffler's prosumerism is grounded in the shifts of socioeconomic customs from agriculture and industrialization to the information economy, ultimately prosumerism is a sharing culture. Boundaries blur among production and consumption with the production of goods and services among specialists and non-specialists. Yet, it is worth considering Toffler's theory to articulate the gap between what he thought presumption would be and what it has become in the digital information age. For Toffler, prosumerism was the rise of transferring activity upon consumers in an act of displacing labor from producers. While this model is active in the digital information age, there is also another form of prosumerism where the exchange of ideas, goods, and services benefit humankind instead of corporate financial interests.

OPEN SOURCE AND COMMODITY PROSUMERISMS IN WEB 2.0 SPACES

With the prosumer model's institutionalization within Internet cultures, by the time Web 2.0 took off during 2002-2004, the do-it-yourself culture did not disappear. On the contrary, the rhetoric of sharing positioned prosumerism as a viable economic model for digital commerce. One early social media space, Friendster, encouraged its users to connect through a friend network and share content and media within that chain of connections. While Friendster experienced financial and technological issues from 2004-2006 (Fiegerman, 2014) and nearly left the social media landscape in the United States, the social media upstart developed technological processes that were later approved for U.S. patents.

One such patent (Lunt et al., 2009), “Method for sharing relationship information stored in a social network database with third party databases,” allowed for third-party databases to access content in Friendster’s databases through an identification token to better target information to particular users. In this particular case, Friendster invented a method for third parties to access primary database content with the help of an intermediary ID tag. I speculate here that this invention arguably transformed how social media providers viewed sharing of information with others—a means for a revenue stream.

By the time social media became significantly popular in 2004, prosumerism had long been an economic concept promoted as a method of empowerment and individualization. Why pay or wait for a specialist when Jane Doe can perform the labor and feel a sense of reward in the process? In many ways, the tectonic shift from specialized work to individual endeavors represented a de-centering of separation and elitism. People in various social classes—who also had access—could control the creation of products and services through DIY culture and participatory culture (Jenkins, 2006). Within rhetoric and composition, Daniel Anderson (2003) suggested prosumerism empowers students to be creators in digitally mediated spaces. This statement, born out of a historical transition from alphabetic to multimodal content in the discipline, echoes much of the rich disciplinary discourse around new media literacies (Hawisher & Selfe, 1999, 2000; Selfe, 1999a, 1999b) and later multimodality (DeVoss, Cushman, & Grabill, 2005; WIDE Research Collective, 2005; Wsocki et al., 2008) and multiliteracy (Selber, 2004). These situated discussions developed in response to the changing landscape of composition practices, with considerable advocacy of educating students and colleagues on how to write for various audiences using multiple digital tools (e.g., audio, video, animation, and text). For example, within this edited collection, Liza Potts chronicled how fans of media content co-produce material fan-fiction and distribute such work in various networks, and in some cases, as Potts mentioned, create new content.

It is here I also want to tease out a fine distinction between the prosumerism I see happening in the discipline of rhetoric and composition, especially within computers and writing, and the prosumerism I view as a market-driven practice. The type of prosumer practice that has been developed and encouraged by scholars and teachers in rhetoric and composition represents, in my mind, a rhetorically based process that is also divergent from prosumerism in most social media spaces. Within rhetoric and composition, I view prosumerism as a type of open-source practice. By open source, I do not mean the traditional associations of universal access and free licenses of software, but the ideological banner driving open-source work: interactive and dynamic sharing of content that benefits and improves systems, processes, individuals, and societies as the *currency* for the

exchange of information. Content creators assume responsibility for the creativity and labor of a project or service for educational purposes and/or for open distribution, not necessarily for third-party revenue (unless the creator builds this into the design model). In the global and economic workplace, I view the type of prosumerism happening in social media spaces as a commodification of human activity and engagement with goods and services. Unlike open-source prosumerism, where content creators develop material for inquiry and information, commodity prosumerism tends to rely upon exploitation. Such exploitation in this prosumer model results from the establishment of an unpaid labor system. In the example of social media, tracking technologies monitor user movement and activities, collect such data, and use the data for various reasons including analytics and site usage, but also for revenue—all without passing such profit on to the users in the form of payment for their time on the site.

To understand the seductive lure of commodity prosumerism, it is necessary to comment upon how the capitalist fantasy of controlling resources engenders desire and control of economic wealth. Sociologists George Ritzer and Nathan Jurgenson (2010) argued that prosumer capitalism benefits companies and people who originate products and services to amass capital in the marketplace. In their definition, Ritzer and Jurgenson pointed to production (Marx) and consumption (Baudrillard) as a co-dependent method for the everyday person to both create and consume. Taken further, Baudrillard's notion of consumption relies upon the annexation of production by producers to create desire and need in consumers. Essentially, producers create the products, market the demand, and seduce consumers into needing the product to fulfill their desires. Seen this way, producers develop goods and services and then create demand, thereby conditioning consumers to need the products. Taken one step further, producers market goods and services under the ethos of do-it-yourself to shift the expense of labor onto consumers. In turn, producers control not only the fantasy of desire and wealth, but also the distribution of labor in a free-market economy. By controlling labor, producers deepen their commitment to the prosumer model since such practices yield cost savings and maximize profits.

Such concepts are consistent with approaches in political economy practices. In his work on presumption and surveillance, critical media theorist Christian Fuchs (2011) critiqued the problems with capitalist behaviors in Web 2.0 spaces. He argued that traditional capitalist models of economic exchange between the public and the owners, left over from the industrial revolution, provided a need of supply and demand of resources and goods. But in Web 2.0 spaces, presumption distorts the traditional capitalist model because social media producers deliver content based on algorithmic calculations, personalized for user categories, and for the purposes of creating demand for advertisers' products and services.

The more people engage with sites like Facebook, Google, Twitter, and even Amazon and Netflix, the more these companies collect consumer information data for billions in advertising revenue. This model is a problem for the public because of the time and energy people place into using these products with little to no compensation. Facing the facts of living and working in a capitalist society means people contend with unfair labor practices. For the corporate owners, there is great incentive to use computer algorithms to monitor, classify, and track people online. Such a model provides an exceedingly healthy revenue stream in the digital information age. Otherwise put, prosumers under this model are really the products of a social and cultural advertising delivery system designed to stimulate desire and create need.

It then becomes far easier to overlook these practices as people attend to daily habits and responsibilities. Why actively question or resist multi-trillion dollar methods of collecting consumer data when we can just settle for the latest hot product or app to show off to family and friends? Put another way, when we fail to consider the inherent problems with this model, our energies to resist, subvert, or develop alternative models of interaction recede into our collective backgrounds. As writing teachers, we also miss opportunities to engage in civic education to consider the highly complex methods and methodologies of interrogating macro systems of power. If we are committed to teaching students digital critical literacies, then we also need to attend to the systems that bind us to a rhetoric of sharing for a market-driven prosumer economy.

DIGITAL ALGORITHMIC SURVEILLANCE

Social media spaces deploy commodity prosumerism through digital algorithmic surveillance. Digital algorithmic surveillance, a term originally introduced by sociologists Clive Norris and Gary Armstrong (1999), describes how surveillance technologies store, categorize, and sift through complex datasets through step-by-step procedures for specific results. Many of the algorithms social media sites use, including the now retired Facebook PageRank algorithm, categorize people based how they interact (e.g., clicking, pressing, and talking with the sites through their screen technologies). In addition, algorithmic surveillance takes form through tracking technologies like cookies and web beacons that are in a sense identifying tags associated with websites and people's web browsers and computing machines. In an age of digital algorithmic surveillance, it is normative for Internet companies, especially social media sites, to personalize information for people.

In his research on Facebook, activist Eli Pariser (2011) claimed the company filtered content on people's screens through data collected using digital algorithmic

mic surveillance. This “filter bubble,” as Pariser called this occurrence, works by using algorithms to rank characteristics like how many times a person clicks on information or interacts with another person on the site, and even calculates this data over a period of time. The danger of this practice, as Pariser argued, arises when the personalized filtering systems—driven by algorithms—change people’s cognitive frameworks—or, in rhetorical terms, persuade people. Filtering systems do so by presenting content that reinforces people’s existing values and beliefs from data harvested from their machines, which also limits their access to contrary information. Filtering content through surveillance techniques consequently limits the public’s engagement with political, economic, social, and cultural events and ideas, but also hides how personalization works underneath the interface:

While the Internet has the potential to decentralize knowledge and control, in practice it’s concentrating control over what we see and what opportunities we’re offered in the hands of fewer people than ever before. . . . What’s troubling about this shift toward personalization is that it’s largely invisible to users and, as a result, out of our control. (p. 218)

Pariser does not explicitly discuss prosumerism within the filter bubble, but instead comments upon the division and replacement of human labor with algorithms. Indeed, the algorithms tend to perform the labor of sorting through large quantities of information in replacement of human labor. Arguably, the quick computational processes algorithms offer frees up time, labor, and energy for people in their everyday lives when working with digital technologies. From a civic standpoint, I argue commodity prosumerism forms the basis for many of the algorithmic processes in social media sites. The underlying ideological assumption of digital algorithmic surveillance is not one of agnostic values of learning how people interact with site content (such content includes advertising, friend and page/group suggestions, and recommendations for products and services), but for social media producers to classify and categorize people into distinct classes in order to deliver content relevant for people in that social and cultural class. Ultimately, the filter bubble—while a concern for online democracy and civic interaction—is an important model for businesses to rake in revenue. By relying on a commodity prosumer model for personalization in social media sites, questions about humanistic practices of agency, decency, and respect of the common good become paramount concerns for the public.

Social media users have already seen the effects of digital algorithmic surveillance from the alteration of Facebook algorithms in a research experiment conducted by Adam Kramer, Jamie Guillory, and Jeffrey Hancock (2014). In

their study, “Experimental Evidence of Massive-Scale Emotional Contagion through Social Networks,” the three researchers altered Facebook algorithms for approximately 700,000 Facebook users in a controlled study to learn if people experienced emotional reactions to experiencing more positive or negative content through their screens. (See Tabetha Adkins’ chapter in this collection for further discussion of Kramer, Guillory, and Hancock’s study and its ethical implications.) The altered algorithms either limited or increased positive posts in the control group’s Facebook newsfeed. As a result of this experiment, the researchers determined people did respond to the limitation or increase in positivity in the feed. Those who experienced fewer positive posts posted less frequently in Facebook and did not contribute as many positive posts, and vice versa. Of course, social media and Internet companies altering content is not a new invention as danah boyd (2014) elsewhere reported, but all too often, algorithmic alterations in social media spaces persuade people to certain actions, thoughts, and feelings—as the emotional contagion experiment suggests. In an age of sharing content online, social media producers have, in a sense, conditioned consumers. People share content to connect with loved ones, colleagues, and acquaintances, all the while as algorithms categorize people into social and cultural classes from data harvested from computing machine data. In turn, algorithms provide content to people reflecting a composited digital self.

American culture and media theorist John Cheney-Lippold (2011) argued this is a form of “algorithmic identity” in which algorithms categorize people from “use-patterns online” resulting in social sorting, which is consistent with what I call the “invisible digital identity,” or the identity computer algorithms create about us (as cited in Beck, 2015). These classifications cause people to have unequal and uneven experiences online, which hint at implications of discrimination and censorship (Guzik, 2009; Introna & Wood, 2004). The relationship between prosumerism and digital algorithmic surveillance helps people better understand the shifting models of sharing, capitalism, and participatory action in social media spaces.

This is all not to argue that digital algorithmic surveillance as a force in social media leaves users with little agency, lest this become a discussion skirting around technological determinism. In many ways, the politics and economics of social media leave the power to control information exchange to the owners of these sites where digital algorithmic surveillance is concerned, since users of these sites do not have access to create or modify these algorithms. However, individuals do have a visible agency in social media. By visible, I mean the type of agency where people share content for other people to engage with online. Within this edited collection, Tabetha Adkins discusses how West Virginians used Tide’s Loads of Hope Facebook public page to denounce Tide’s decision

to not send Loads of Hope into the regions of West Virginia affected by Freedom Industries' toxic dump of 4-methylcyclohexanemethanol (MCHM) in the Elk River, which left approximately 300,000 individuals without access to clean water. As Adkins suggested, the influx of comments on the Facebook page represents a type of social activism where people can rally for production action for the common good. Additionally, Les Hutchinson wrote in this collection about her decisions to choose anonymity in Twitter as an act of agency in order to play with a dynamic and fluctuating identity online.

Although individuals have some say in how to engage in social media spaces, I maintain that in the case of commodity prosumerism and digital algorithmic surveillance, there's an edge of hard determinism at play. It is difficult for me to get past the notion that the invisible and opaque processes that order online spaces also regulate social and cultural interactions. This is especially at play with commodity prosumerism and digital algorithmic surveillance when sorting and classifying individuals results in people experiencing specific advertisements, recommendations, friend suggestions, and content delivery. This is not to say that people do not have the agency to disrupt, subvert, or challenge these coded processes under the interface. Quite the contrary, under a soft determinist stance, people do have the opportunity to participate in ways that offer productive decisions in the moment and in the long term. Through the lens of Judy Wajcman (2015) in her book *Pressed for Time*, she mentioned how scholars in science and technology studies have expressed consideration for soft determinism because technology does have social effects. Admittedly, I struggle with my own relationship with social media technologies, at times participating in issues of social justice and activism, but also knowing my actions in spaces like Twitter and Facebook become commodities for these companies. This is also why I wrestle with hard and soft determinist stances toward technology.

At times, it is difficult to assess similarities and differences in the open-source and commodity prosumerisms at play in social media spaces. For example, when a student or teacher shares open-source prosumer projects like a 30-second public service announcement video created in class by a student (or students) on a social media network, I value the contribution as an educator deeply vested in training people to become rhetorically savvy writers of media content. I also know that the video will become a commodity in that social media space. However, introducing open-source prosumption in social media spaces also means reconceptualizing the civic force of such spaces. Essentially, by introducing such projects in spaces that ultimately constrain remuneration or fair compensation of labor, this leaves open individual and collective agency to develop social media spaces that pay people to post content. Such a social media space, at the time of writing this chapter, already exists: tsū. This social media application works by paying its users money

for posting content and growing its network—money taken from advertisers, but money also returned to users for their labor on their network.

SUSTAINING CRITICAL LITERACIES IN SOCIAL MEDIA SPACES

When individuals participate in any social media site, they are active prosumers; they give their data—their unpaid labor—away to social media companies under the appeal of *sharing* content with others online. Social media sites using commodity prosumerism also make it difficult for people to understand how companies profit from user data. However, since educators, researchers, and students in high-technology cultures often use social media, it is crucial to sustain critical literacies as a mode for civic education.

Critical literacy approaches to the teaching of digital technologies within rhetoric and composition has often involved examining the ideological freight embedded in the architecture and code of such systems within our field. As rhetoric and composition specialist Joseph Janangelo (1991) reminded us, power inequities thrive in online spaces because of abuses of surveillance systems. For Cynthia Selfe and Richard Selfe (1994), interfaces mark sites of contact zones where raced and classed boundaries exist and oppress marginalized populations. Drawing attention to student participation in computer-mediated environments, Kristine Blair (1998) and Donna LeCourt (1998) examined sites of conflict and discourse practices among diverse student populations to illustrate how ideologies inform participation in virtual spaces. Of course, these contributions provide relief from the ideological forces that assert control over others by modeling participatory methods of critical literacy engagement with students. In some instances, students critiqued technologies in ways that reinforced their own worldviews, which is a common practice critical pedagogues routinely experience in classrooms. However, the takeaway from these scholarly contributions give meaning to rethinking perspectives about our own beliefs and the ones embedded in our screens. As educators discussing critical technology literacies, we've focused on teaching students as a primary audience for critical education. However, it is also crucial that readers of this chapter turn toward the public, to consumers in general, to educate people both online and offline about prosumerism and digital algorithmic surveillance, along with how critical literacies help people make informed decisions about participation in social media.

Computer algorithms have enormous potential to inspire and shape discourse activities of people, but these algorithms do so at the expense of cultivating economic, political, and social scripts designed to persuade citizens toward certain pathways of thinking and action. An example occurred during the collective re-

porting of citizen activists around the August 2014 police shooting of 18-year-old Michael Brown in Ferguson, Missouri. Taking to Twitter, millions of people expressed opinions about the shooting and the later real-time events of the police militarization of the city in the greater St. Louis area. Many tweeters reported that the Ferguson hashtag (#Ferguson) dominated their Twitter streams, while news on Facebook focused on the ALS Ice Bucket Challenge, a media campaign event whereby participants dumped ice water on their heads and bodies for donations to ALS research. Because Twitter uses real-time tweets, the events in #Ferguson on Twitter helped keep the spotlight on racial inequity and use of police force on peaceful demonstrators in town. However, because Facebook uses complex algorithms to curate news items on newsfeeds, many tweeters reported that Ferguson received hardly any attention within Facebook and pointed out that the ALS ice bucket challenge dominated their newsfeeds. The political and social outpouring on Twitter since the shooting of Michael Brown illustrates algorithmic manipulation. Journalist John McDermott (2014) argued that the implications of this algorithmic disparity between Facebook and Twitter are considerable given the reliance of the sites to provide information to millions, as he argued:

The implications of this disconnect are huge for readers and publishers considering Facebook's recent emergence as a major traffic referrer. Namely, relying too heavily on Facebook's algorithmic content streams can result in de facto censorship. Readers are deprived a say in what they get to see, whereas anything goes on Twitter. (2014, para. 3)

Not only is censorship a concern for all that use Facebook, but the algorithmic practices of the social media space also affect people's attention toward certain social and political issues over others at the expense of cultivating civic responsibility and action. If end users are unaware of this type of algorithmic persuasion occurrence in Facebook and in other websites, information literacies efforts led by librarians, for example, become hindered because people are unable to access, evaluate, and use diverse knowledge bases to form a more democratic digital and real-life society. Therefore, taking civic action helps loosen some of the scripts and allows citizens to assert control in less democratizing spaces online.

An example of civic action occurs in the work of communications and gender scholar Safiya Umoja Noble. In 2012, Noble reported in *Bitch* magazine the results of a Google search for "black girls." Instead of results showcasing positive websites that embraced black identity and provided role models for young black girls, the top result in Google was SugaryBlackPussy.com. While she may not consider herself a critical pedagogue, Noble brought these search results to her

students to show the power structure of search processes in Google. By bringing this example into the classroom, she called attention to the values Google replicated in its search results and discussed how to subvert those values to promote more equitable and diverse results for black girls and women. This is not to say that Noble's work changed the way Google's search results operated, since such results are based on any number of signals such as geographic location, IP address, web search history, and so forth. However, in examining and making space for dialogue about the practices inscribed by Google in the classroom and in a national feminist magazine, Noble's pursuit for political and social justice yielded positive results and an excellent example of critical pedagogy in action by analyzing algorithmic features in search engine spaces and sharing such information in a national and public publication.

Thus, it is here that educating our students, as part of a civic position, about the many-layered definitions of *sharing* in social media, open-source and commodity prosumerism, and digital algorithmic surveillance leads people (both producers and prosumers) to make productive changes in participatory Internet cultures. The manner in which people may address such topics develops through sustaining critical literacy. Drawing upon Stuart Selber's (2004) work in *Multiliteracies for a Digital Age*, civic engagements may include the following:

- Educating individuals about prosumerism in national publications, not just academic journals: What might well-placed articles in publications in both liberal and conservative periodicals do for promoting awareness and encouraging people to advocate and challenge commodity prosumerism in social media sites?
- Volunteering or contributing funds to national non-profit organizations like the American Civil Liberties Union (ACLU), Electronic Frontier Foundation (EFF), and FreePress to support efforts to curb digital algorithmic surveillance online.
- Raising awareness by writing in local newspapers, either by contributing columns or by writing letters to the editor about unpaid labor in social media, but also addressing how people may conceptualize and critique the power structures in social media and understand the myriad institutional forces that profit from such sites.
- In local communities, talking to neighbors, community members, and acquaintances about why and how commodity prosumerism is designed to persuade people to need and desire products and service in social media.

Taking time to advocate and educate community members and the public about the implications of consumer prosumerism and digital algorithmic sur-

veillance must be at the forefront of civic engagement. As educators, we have a responsibility to inform the public about these issues while honoring our field's history of encouraging open-source prosumerism. It is no longer enough for writing educators to discuss these concerns in scholarly journals and venues. Instead, scholars and educators must expand into public spaces and help individuals develop and acquire the literacies necessary to subvert digital algorithmic surveillance and make productive decisions about sharing content on sites that use commodity prosumerism. We must also cast a critical eye toward technologies that may use individuals' labor without compensation or attribution. Learning how commodity prosumerism and digital algorithmic surveillance shapes content, persuades people to actions and beliefs, and redirects cognitive frameworks will become increasingly important in the next decade as more advanced technologies develop with algorithmic processes.

New media literacies, whether they focus on developing search literacies, visual literacies, or Web 2.0 literacies, involve a host of political, social, technological, and cultural conditions across several domains of life. The acquisition and sustainment of theoretical and process-oriented social literacies support larger societal goals of democracy and freedom from oppression. Certainly learning how to identify, analyze, and possibly subvert structures of power can enable critical consciousness, and sustaining critical literacies in digital spaces is further needed as computer programmers and engineers continue to find ways to build a sharing web. Educators play important roles in teaching students and the public about such literacies through national, regional, and local outreach about necessary skills for the general population in today's digitally driven information environment.

On the whole, making educational inroads with students and the public regarding such critical literacies and civic education brings about the potential to change the rhetoric of sharing and the market-driven prosumer culture into a diversified sharing digital information age. Not that open-source prosumerism becomes the de facto model for exchanging information, experiences, and emotions, but it instead gains prominence in mainstream networked cultures. By attending to the student ventures that bring change, we can indeed create a sharing web for the benefit of humankind.

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