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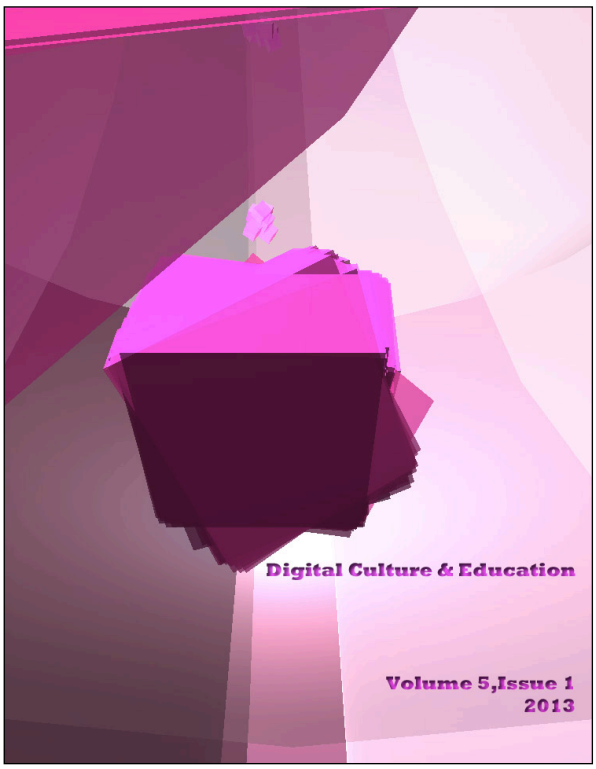


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# Towards hacker literacies: What Facebook's privacy snafus can teach us about empowered technological practices

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# Towards hacker literacies: What Facebook's privacy snafus can teach us about empowered technological practices

Rafi Santo

## Abstract

*This article highlights an emerging set of literate media practices that are simultaneously critical and participatory in nature. These practices, themselves natural responses to a shifting new media landscape, have echoes of existing media literacy paradigms, though are not fully encapsulated by them. Through an analysis of public reactions to Facebook privacy policy and feature changes that took place in the Spring of 2010, the article shows how what the author calls hacker literacies are currently being practised in situ. Hacker literacies, which draw their name from the practice of computer programmers that take existing code and reconfigure it according to their own values and for their own purposes, are unique in that they are not only empowered by participatory technologies, but empowered in relation to these technologies as well. Reactions to changes in Facebook during this time period illustrate the ways that the users of new media did not take for granted the design of these new modes of participation nor the intentions and interests of their creators. Their understanding of the malleability of this sociotechnical space and consequent actions resulted in its reformulation, a type of process the author argues will be crucial if there is to be a more fluid and equal distribution of media power in the digital age.*

**Keywords**: critical literacy, empowerment, Facebook, Hacker literacies, media literacy, new literacies, participatory culture, privacy, sociotechnical spaces.

What it means to be literate with communications media has always been a moving target (Hannon, 2000) – media shift and flux, as do the social practices that surround and shape them. In the 21st century, this is undoubtedly truer than at any point in the history of human communication. As a result, documenting and creating frameworks for understanding new literate practices with media is of increasing importance.

The "first wave" of these literacy frameworks, critical media literary, arrived after the flourishing of broadcast media including print, radio, television and film in the 20th Century. While these media offered societal benefit including new forms of popular culture and broadly accessible political news, they also presented risks associated with a centralised media system including political bias, propagation of problematic stereotypes, and ownership by corporate interests disinclined to address certain important societal issues. To some degree, critical media literacy emerged in response to instances of exploitation of these media by vested interests and the promotion of questionable cultural norms often found in their content. Recognising that broadcast media have commercial, ideological and political implications (Thoman, 2003), it advocates practices that empower citizens and consumers in relation to the messages of mass media, asking viewers to question the intent, assumptions and biases of media producers (Alvermann et al., 1999; Buckingham, 2003; Kellner & Share, 2005; National Association for Media Literacy (NAMLE), n.d.).

In the 21st Century, the advent of the Internet and the broader participatory culture surrounding it heralded a number of "second wave" media literacy frameworks, most

prominently the new literacies studies (Coiro et al., 2008; Gee, 2007; Kress, 2003; Lankshear & Knobel 2006; 2007), the notion of multiliteracies that focus on design (New London Group, 1996; Salen, 2007) and new media literacies (Jenkins et al., 2006). In this paper I refer to these complementary frameworks collectively as "participatory media literacies." Participatory media literacies recognise that distinct and empowering forms of engagement that have been present historically have new emphasis and importance in the world of new media (blogs, wikis, video games, social networks, virtual worlds, mobile media, etc.), and propose that a new set of skills should focus on how people can leverage and participate culturally through new media, allowing them to move beyond consuming culture to become producers of it as well.

In practice, while critical media literacy would focus on preparing a person to ask how a cable news programme might contain political bias, participatory media literacies would aim to equip them with the ability to engage in authentic blogging practices within a broader online community so that they could spread their own political views and contribute to a larger civic ecology. Both of these paradigms are crucial, and there remains an enormous amount of work to be done to engage youth, not to mention the broader public, in practices they have identified as important.

bodies of literature such as these is necessarily an imperfect project – implicated are not just areas immediately at hand such as media literacy, digital literacy, new literacies, and new media literacies but also affiliated fields such as new literacy studies (Brandt & Clinton, 2002; Hull & Schultz, 2001; Street, 1993), critical literacy and pedagogy (Janks, 2000; Luke, 2004; Morrell, 2002) and situated cognition (Brown, Collins & Duguid 1989; Greeno, 1997; Kolodner, 2006), to name a few (for an overview of the relationship between many of these fields see Gee, 2009).

Even within just the critical media literacy and participatory literacies space there is a great diversity of practices and perspectives, not all of which fit neatly within the characterisation I offer above. For example, as new media technologies have emerged, many affiliated with critical media literacy have come to see the process of media production, as opposed to solely critical reading, as deeply implicated in its project (Avila & Zacher-Pandya, 2012; Buckingham, 2003; Janks, 2000). At the same time, these kinds of field level characterisations, though imperfect, have similarly been used before to make large trends visible (see: Gee, 2009; Westbrook, 2011) and allow us a degree of perspective needed to build upon them and explore new areas of conversation.

For example, the current conversation concerning empowerment through technology has seldom incorporated ideas about empowerment in relation to technology, a notion that science and technology studies explores (Lievrouw, 2003; Croeser, 2012) but one largely absent in the literacy space. Too rarely are questions asked about what agendas are implicit in the very design of new participatory digital tools, the sort of question critical media literacy would ask about a media message and that has similarly been asked by technology scholars such as Langdon Winner for many years (Winner, 1986). Rarer still is the recognition that participatory media literacies can be used to advocate for substantive changes to the design or norms of these sociotechnical spaces and tools when they fail to align with a person's values.

This state of affairs is one that leaves youth and adults alike vulnerable to emerging forms of risk and media manipulation that are already coming to characterise the digital age. Privacy issues and the nature of access to personal information by third parties have become central to discussions around new media (boyd & Hargittai, 2010; Wall Street Journal, 2010), individuals in the design field are coming to a greater understanding of how software is norming sociality in ways users are largely unaware of (Mackay, 1991; Lenhart et al. 2010), and questions are arising about ways that participation in corporate online spaces might be understood from the perspective of exploitation of labor (Sholz

& Liu, 2010; Peterson, 2008). These issues, to name only a few, are growing problems in our increasingly technologically mediated society. And these trends may worsen unless our conceptions of what it means to be literate with media shift.

Drawing from many of the strengths of the critical media literacy and participatory media literacies traditions, there lies the potential to address this problem by engaging young people in a "third wave" media and digital literacy framework I refer to as hacker literacies (Santo, 2011; 2012). Hacker literacies, a synthesis of existing practices and mindsets, are characterised by empowerment in relation to participatory technologies such that the design and norms of sociotechnical spaces and the intentions of their creators are not taken for granted, but rather are seen as malleable avenues for expression of the individual user's, as opposed to solely the designer's, values and agendas. In short, hacker literacies take critical reading and rewriting practices that prior media literacy paradigms have advocated for in relation to messages and asks that we apply these to the emerging technologies that increasingly mediate our participation in the world.

In this study, I examine reactions to a series of privacy-related changes made to the popular social network site Facebook in the Spring of 2010. I argue that these reactions themselves constitute examples of hacker literate practices and can point out some of the tensions and opportunities that arise as these practices are enacted in situ. Through an analysis of over 250 posted reactions to articles relating to Facebook's actions on popular news sites, I document the varied ways in which people did not take for granted the design of Facebook nor the intentions of its creators, the forms of advocacy and action that emerged from understandings of Facebook's malleability as a platform, and the ways that new media facilitated a sharing and seeking of resources to respond to the situation.

Overall, the data reveals a complex constellation of empowered technological literacies that include skills, beliefs and values that governed people's relationships to a popular participatory media space, practices I argue are likely to become needed in order to promote a more fluid and equal distribution of media power in the digital age.

## Defining hacker literacies

Prior to grounding this concept empirically in lived practices, a project the central section of this paper will address, it is first necessary to first briefly situate and then clearly define hacker literacies.

At their core, I believe that the critical media literacy and participatory media literacies movements have a common inclination that drives them: people should be actively engaged in processes of making meaning of and through the media that surround them. Born of this common space as well, hacker literacies can be characterised as contributing to a 'third wave' of media literacy scholarship that aims to bring critical perspectives into the new media space, in addition to drawing on established traditions in critical literacies (Janks, 2000). Karen Wohlwend and Cynthia Lewis (2010) argue for a critical engagement within online participatory cultures that examines how the desire to belong in emerging online affinity spaces or fan groups interacts with agency in those spaces. A recent edited volume by Julianna Avila and Jessica Zacher-Pandya (2012) highlights many cases of how educators are working at the intersection of critical and digital literacies.

Hacker literacies builds off these as well as both older and more recent calls for increased understanding of the implicit biases of designed technologies. Constructionist learning theorist Seymour Papert argued as early as 1980 that educators were getting it wrong about the role of technology in education as he discussed the LOGO learning

environment: "In most contemporary educational situations where children come into contact with computers the computer is used to put the child through the paces, to provide feedback and to dispense information. The computer is programming the child. In the LOGO environment the relationship is reversed: The child, even at preschool ages, is in control: The child programs the computer" (Papert, 1980). Papert argued through not only his writings but through development of projects like LOGO that taught computer programming that youth should not take for granted the design of technology and the need to understand its malleability.

More recently, public intellectuals have picked up on this insight that people, and especially youth, must understand how technology is formulated and designed if they wish to avoid or push back against the bias of its designers. In his book Program or Be Programmed, popular writer Douglas Rushkoff (2011) states that "As technologies come to characterize the way that we live and work, the people programming them take on an increasingly important role in shaping our would and how it works. After that, it's the digital technologies themselves that will be shaping our world, both with and without our explicit cooperation. (p.8)"

Where I diverge from both Papert and Rushkoff is in the narrowness of their proposed solution to the truth pointed to in the above quote – both argue that people need to learn computer programming, a highly technical response and really just one of many available social, legal and technical tools that can be used to respond to and "rewrite" technologies that are misaligned with a person's values.

In putting forth this construct of hacker literacies, I take inspiration from these thinkers as well as from many within the critical media literacy and participatory media literacies traditions. I define the term in this way: empowered participatory practices, grounded in critical mind-sets, that aim to resist, reconfigure and/or reformulate the sociotechnical spaces and tools that mediate social, cultural, and political participation.

These "critical mind-sets" include perceiving how values are at play in the design of these spaces and tools; understanding how those designs impact the users of those spaces and tools; and developing empowered outlooks, ones that assume that change is possible, in relation to those designs rooted in an understanding of their malleability. Critical mindsets, in short, are about critical "reading" of sociotechnical spaces and tools.

"Empowered participatory practices" include making transparent for others the values at play in and effects of sociotechnical designs, voicing alternative values for these designs, advocating and taking part in alternative designs when spaces and tools are misaligned with one's values, and engaging in processes aimed at changing those digital spaces and tools whether on the social, legal, or technological level via social, legal or technological means. Empowered participatory practices, then, are about critical "re-writing" of sociotechnical spaces and tools.

## Context of Investigation and Methods

This study largely aims to take the notion of hacker literacies out of a theoretical space in order to operationalise and ground it in an authentic context where it is practiced. What is referred to by some as "The Facebook Privacy Debacle of 2010" (Beale, 2010) was selected because it offered a natural example of the kinds of mindsets and practices outlined above, was participated in by a large numbers of Facebook users with a range of cultural and technological backgrounds, and finally because the situation ultimately resulted in changes being made to Facebook as a result of user, media and governmental responses (Sengupta, 2011; Zuckerberg, 2010).

While Facebook has a long history of tensions with users around privacy issues (boyd & Hargittai, 2010), the particular situation that occurred in the Spring of 2010 resulted in what was arguably the greatest negative reaction up to that point both among users as well as the press and governmental actors. In late April of that year, Facebook announced at their annual F8 conference features known as Instant Personalization and Social Plugins, both of which aimed to leverage a user's personal connections within Facebook to extend into their usage of third party websites, such as the now ubiquitous "Like" buttons (McCarthy, 2010) strewn across the web. A lack of clarity in terms of what user information was shared with third parties in this process was the antecedent to an extended public backlash that included Facebook's user-base, government actors including Senators and regulators at the Federal Trade Commission, activist groups such as MoveOn.org and a range of journalists from both technology oriented and mainstream news sources.

This study focused its analysis on the comments posted by individuals on nine news articles or blog posts written in the Spring of 2010 that addressed privacy issues associated with Facebook's actions during that period. 280 comments made by 242 individuals in the comment sections of these articles and blog posts were selected and analysed. Six of the articles came from two mainstream news sources, The New York Times and The Washington Post, and the remaining three came from two prominent technology reporting sites, TechCrunch and Mashable. Equal numbers of comments, 140 from each category, were sampled from the mainstream news sources and the technology sites, with greater comment counts on each article accounting for fewer articles being sampled from the technology reporting sites. Little is known about the demographic makeup of this particular sample, although it is safe to assume that those who posted on the technology-related news sites were more likely to be avid users of social media and more likely to be connected to technology development and business, as those are the two foci of those sites.

Data were not selected with the intention of garnering a representative sample of all Facebook users, but were rather chosen for the likelihood that the literacy practices at the focus of the research would be present in some form. The goal here is not to say that all or even a significant portion of Facebook users displayed hacker literacies in reaction to Facebook's actions at that time, but rather to show the shape of those literacies as they were instantiated in context.

The data were analysed both at the discourse and content levels, with the unit of analysis being the full comment posted. In order to gain insight into the tone of the conversation, discourse was analysed for stance (Hodsdon-Champeon, 2010) taken by commenters towards Facebook as either a company, service, or sociotechnical space, with all comments evaluated as either positive (+), negative (-), mixed (±) or neutral (~) towards Facebook.

On the content level, a coding scheme was derived based on the definition of hacker literacies outlined earlier. Three broad themes emerged in the codes. The first is Perception of Embedded Values in Design, concerned with the ways that individuals pointed to the effects of the design and policy changes and the values these connected to. This is akin to "critical reading". The second is Advocating and Taking Action through Empowered Outlooks, in which users recognised the malleability of the sociotechnical space and advocated either for changes to the design of Facebook or other actions in response. The third category, New Media as Means of Change, captured the ways that individuals participating in these comment threads used that new media space and others as a means of sharing, seeking and enacting strategies to deal with the changes Facebook had made. These latter two codes are concerned with the nature of "critical rewriting" of Facebook.

A subset consisting of 40 of the comments was coded by a colleague and revealed reliability at 81.75% accuracy.

## Findings & Discussion

### *Perception of Embedded Values in Design*

> They are not redefining privacy, they are debasing the language of privacy. George Orwell understood this principle completely: newspeak.
>
> -Anonymous Poster, posting on Mashable.com

> And what's the point of a social network where you have your friends if you don't post anything fearing it can be public without previous warning?"
>
> -I'm Dario, posting on Mashable.com

If tinkering and changing the formulation of sociotechnical spaces and new media tools is at the core of hacker literacies, seeing that a space or tool isn't currently meeting one's expectations is an important precursor to that. Central to these sorts of perceptions is a sometimes explicit, although often tacit, understanding that technology is always an embodiment of values, that these values play out in designs, and that those designs impact the experience of the users of technology.

In his book *Code and Other Laws of Cyberspace* Lawrence Lessig (1999) argued that much like the legal code constrains and affords behaviour, computer code similarly functions to structure the ways that we interact in the online world. This led to his popular dictum "Code is Law". More than a decade earlier though very much in the same spirit, Langdon Winner (1986) argued that all technology is imbued with politics.

The above quote referencing George Orwell, posted in the comments on Mashable, is an example of how in reactions to Facebook's decisions people very much understood Lessig and Winner's insights in explicit ways. At the same time, many of the reactions indicated a more practical, and personal, orientation – people suddenly felt like Facebook was less useful for them, as the second quote above referencing a disinclination to post information indicates. Another poster wrote:

> By making a connection on FB, I'm invading that connection's privacy: revealing that connection's identity to the world, making the person behind that connection searchable.
>
> -fjpoblam, posting on Techcrunch.com

Beyond considering Facebook less useful and being disinclined to use it, this individual pointed to specific design implications that could result in personal and professional issues arising through the simple, and central, act of adding someone as a "friend" after the new privacy settings were implemented. This evidences a form of thinking in which a person links the particular designs of a tool or space to the kinds of behaviours that are now possible, or not, and the implications this has for the user – a cornerstone of how critical reading of technology takes place in hacker literate practice.

In another case, a poster named Melliodora wrote about an incident in which his Facebook profile photograph was used in an advertisement for a major beer company without his consent, and he was portrayed, in his words, as "having no class and no style" in that advertisement. Apparently a person he was "friends" with on Facebook entered a contest that allowed the company to access Melliodora's, as a "friend" of this person, profile pictures, and presumably other people's photographs as well. Regardless

of the legality of the picture's usage, it is clear that Melliodora felt taken advantage of as a result of the design of Facebook's privacy settings.

Others moved towards an even more explicit and collectively oriented interpretation of the new designs put forth by Facebook, and inferred specific principles that the company was operating under when it made them:

> Facebook is not an altruistic, community-building website; it's a private, for-profit company that wants to make more money by exploiting the personal information it has access to.
>
> -Colleen, posting on *The New York Times*

This reaction evidences an orientation that is beyond a consideration of how one individual is adversely affected by any specific feature - it assumes a larger profit-oriented principle governing the design decisions Facebook made based on an exploitative relationship with its user-base, contrasting this with 'altruistic, community building' values.

On the level of design principles, some posters even went so far as to articulate themselves what they saw as alternative values that Facebook should adhere to in its designs:

> This is a democracy - give people choices before making their private lives public - automatically.
>
> -Ali Eorse, posting on *The New York Times*

> The majority of FB, Flickr, and Yahoo users just don't know enough to be vigilant about checking their setting - and they shouldn't have to be.
>
> -Nina Gerwin, posting on Techcrunch.com

> It's about striving to protect a user's information rather than providing API access to it. If Facebook is a circus, we want a Walled Garden.
>
> -Jimi's Brain, posting on Techcrunch.com

In some respects, the varied perceptions within the data of design effects and embedded values move up a trajectory of critical understanding of Facebook. On one end, individuals are seeing how a new design is inconvenient or changes behaviour in undesired ways. From there, understandings develop about how a new design might have negative unintended consequences, or even allow exploitation on the personal level. Notions then emerge of what a person sees as the values and intentions behind these new designs. Finally, once at the level of values, alternatives to what is seen as the current reality can be voiced, evidencing a move from critical mindsets to empowered participatory practices.

This last step, the voicing of alternative values, is central to hacker literacies as it stems from an implicit understanding that these spaces are indeed malleable. If people do not believe that something can be changed, there would be no inclination to suggest that alternative values guide its design. Having such an empowered view forms the basis for engagement in advocacy for new formulations of a space, something we have long seen in critical literacy practices that now is making itself visible in situ in sociotechnical spaces.

## *Advocating and Taking Action through Empowered Outlooks*

The notion that a sociotechnical space is malleable forms the bedrock of an empowered outlook that sees possibility for action on occasions when these spaces are misaligned with what a person values. This notion of possibility and empowerment draws centrally from Freire and Macedo's (1987) idea of "reading the word and the world", which was primarily concerned with shifting people's understanding of the world as inevitable or having a "way that it is" to understandings that emphasise the socially determined nature of reality, and the agency that is implicit in that worldview.

Three categories advocacy and action based in such an agentive worldview were revealed in the analysis. The first was oriented towards individual actions that one can take in response to Facebook's behaviour. This often took the form of calls to refrain from posting certain information on one's personal profile, suggestions of deleting one's account, and calls for others to take personal responsibility, as evidenced by this individual's comment:

> If users are concerned with privacy they need to make an effort to educate themselves on the new policy.
>
> -Richard Soper, posting on Mashable.com

The sentiment of this comment, which persisted through all of the reactions across the four news sources, very much aligned with libertarian notions of political engagement, wherein the individual citizen, given freedom and choice, can determine her own destiny according to her values, and avoid things that are undesirable or create her own means of response to them.

A second category of advocacy and action was aimed at creating alternative models that Facebook might follow in order to become better aligned with what their users might want, such as this suggestion for how Facebook should reconfigure its privacy settings:

> I'd like to see Facebook adopt a much more simple model: - Share with my Friends. - Share with Friends of my Friends. - Share with everybody. If you want to go crazy granular on settings under those buckets, great. But at least at a high level I can choose one of 3 things and feel mostly comfortable. That's enough for most users.
>
> -Chad Whitney, posting on Mashable.com

Most common was the suggestion that Facebook should adopt an "opt-in" model when making changes to the kinds of information that can be shared. Rather than defaulting users into settings that made their information more rather than less public, a practice that Facebook has a engaged in on numerous occasions (boyd & Hargittai, 2010), many suggested that Facebook make these possibilities available for people to choose to opt into if they so desired.

These sorts of design suggestions evidence a different notion of agency and understanding of the possibilities for reconfiguring sociotechnical spaces than those individuals that suggested that users simply educate themselves on the new policies or just leave Facebook. One can imagine these suggestions emerging from the experiences of individuals that had encountered a wide range of changes to Facebook prior to this one. They evidenced an understanding that Facebook was completely capable of implementing new designs, and via their suggestions these individuals in some respects

positioned themselves as advisers to Facebook's architects, or as advocates exerting public pressure for specific policy decisions and self-regulation on the part of Facebook.

Finally, numerous individuals voiced the need for collective action to explicitly exert pressure on Facebook to change how it operated. Many of these had less implicit trust in Facebook's either ability or desire to self-regulate than those that suggested alternative policies and designs. Common in this category were calls for governmental regulation, mass exodus from Facebook, and suggestions that users collectively join sites deemed more respectful of privacy. The individual below advocated for a group action that displayed a deep understanding of the underlying market logic on which Facebook operates:

> We are taking the fight to Facebook. We know how the info game is played, so every week we're going to change a detail on our Facebook profiles en masse to throw off their marketing data.
>
> -Amy Stein, posting on Mashable.com

The collective actions more often seemed to align with traditional notions of community organisation and civil disobedience, to desires for regulation of powerful entities and to treating Facebook like a traditional utility such as electricity or telephones with all of the attendant implications for consumer rights.

These varied responses, on the level of individual action, policy and design recommendation and collective action serve to complicate what hacker literacies look like when enacted in practice. There is clearly not only one response here that qualifies as empowered. Rather, underlying the differences in these responses were a range of value systems, understandings of what it means to be empowered and decisions about what an appropriate reaction to the situation was. At the core of each of them though is a notion that there is something that can be done in the face of a sociotechnical space that is misaligned with one's values, an idea central in distinguishing hacker literate practices as ones that are not only critical but also participatory.

## *New Media as Means of Change*

A unique property of hacker literacies is linked to the technological space in which they have formed, that being the fluidity with which the technological tools and spaces move back and forth from being in the role of norming behaviours of users through their designs to being themselves the means to change those very designs. In the context of this investigation, we saw examples of people first understanding that Facebook was norming their behaviour in some way, but then others that used Facebook as the very means of changing the platform. In the example noted in the previous section of a woman that advocated large groups of people changing profile information to "throw off their marketing data", a link to a page that had been set up on Facebook to coordinate these efforts was shared. Others again shared more individualistic approaches to using Facebook as a means of resistance:

> In my profile all my "about me" fields now contain: "As protest to Facebook's constant change in privacy rules, I have removed this field."
>
> -Dude, posting on Techcrunch.com

Facebook, though, was far from the only new media tool that individuals were employing to share, seek or enact responsive strategies. Some shared custom tools that

had been created to make transparent which information was currently being publicly shared, potentially inadvertently, by a Facebook user:

> Lots of tools emerging now to turn the balance of power back to consumers. Here's ours, for FF and Chrome users who want to change settings to "Friends Only" and keep them there - http://onebuttonrule.com/ Gets to *all* settings, works *automatically* to react to Facebook's changes.
>
> -Ginsu, posting on Mashable.com

During the month that followed Facebook's F8 announcement, tools like this spread widely on the web. Reclaim Privacy, a tool recommended by a user commenting on Techcrunch, provided an open source and itself completely transparent way to provide awareness of Facebook user privacy settings. The designers of this tool were quite explicit in wanting to create a technical response to Facebook's changes that embodied the values that they saw missing in Facebook itself:

> Our privacy policy is not long:
> we never see your Facebook data
> we never share your personal information
> Simple. After the scanner is downloaded from reclaimprivacy.org, it operates entirely between your own browser and Facebook.
>
> -ReclaimPrivacy.org, retrieved May 2011

At the time of this writing, the Reclaim Privacy tool had been shared using Facebook's own "share page" feature over 270,000 times (ReclaimPrivacy.org, retrieved November 2012).

On analysis it also became clear that the comment sections analysed on these four news sources were themselves spaces where people were leveraging new media to seek and share response strategies. Given the confusion that ensued after Facebook's announcement, the media sources and the larger ecology of information around them, including these comments, became an important space to clarify that confusion, share resources and information and mobilize efforts like those that have been mentioned. 16% of all posts analysed either shared or sought information and strategies to deal with the changes that Facebook had made.

## *Stance & Notions of Responsibility*

It was not unexpected that the most predominant stance towards Facebook, characterising 55% of all responses, was negative, with neutral responses or those that did not reference Facebook at all at 32%. However, significant differences emerge when we contrast the stance of comments on The New York Times and The Washington Post with those on Mashable and TechCrunch. Figure 1 shows that over 75% of comments in the mainstream news sources were negative towards Facebook, as compared to just above 40% on the technology focused sites.

A number of explanations are possible here. One would be that posters on the more mainstream news sites were more likely to be less technically savvy, and as a result, more frustrated, than those on the technology sites. Another is the possibility that posters on the technology sites were more connected to the development of and business around social media, and were as a result more sympathetic to Facebook's position.

A final explanation stems from the particular cultural outlooks often found in the technology world. Many of the positive stances towards Facebook in the technology

reporting sources were not necessarily praising the site, but rather defending it from what some saw as unfair blame. The following comments from one poster illustrate what was a clear, if minority, voice:

> …if you dont like what facebook has done with its privacy policy then dont use facebook anymore.
>
> I just dont get whats so bad about facebooks privacy settings. For one, if you dont want something seen, you can make it private fairly easy. Also, if you dont want it to be seen by other people, then DONT PUT IT ON THE INTERNET!
>
> -Richard Soper, posting on Mashable.com

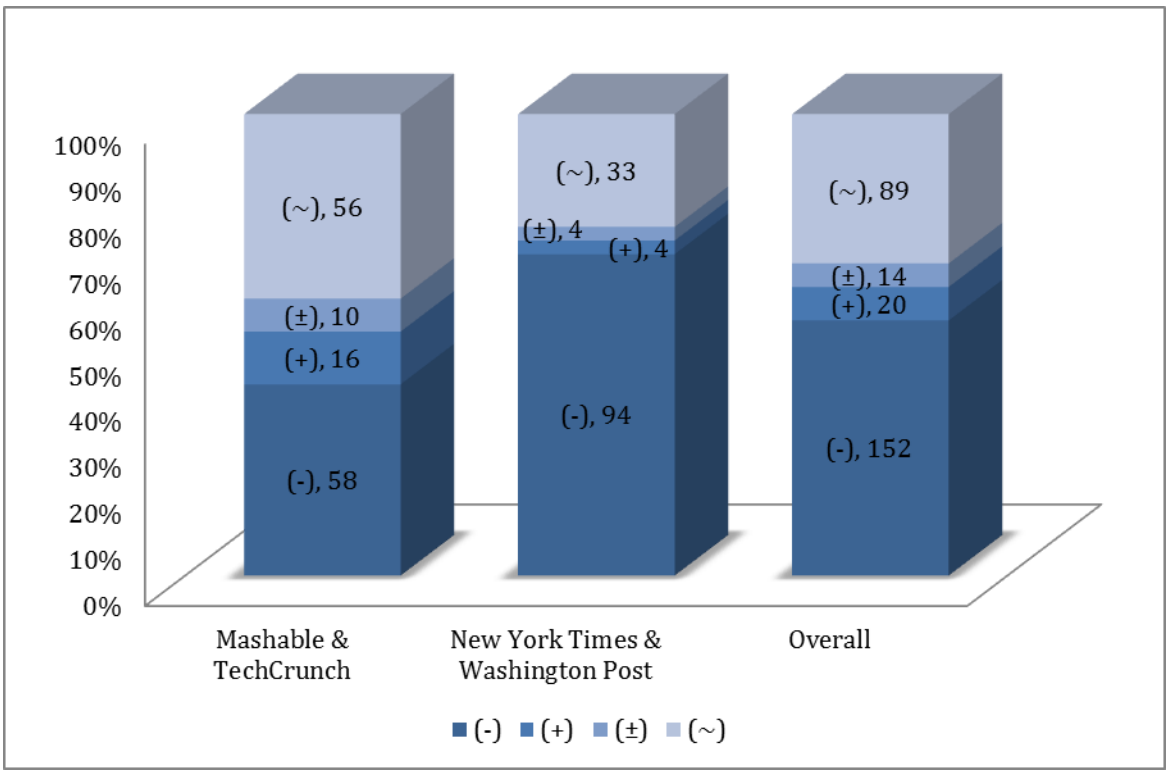


**Figure 1:** Stance Towards Facebook

These responses and others that were less forceful again showed the ways that notions of personal responsibility, as opposed to collective responsibility that would implicate Facebook or governmental regulators, characterised parts of the discourse. This is not to say that all the comments that had individualistic orientations were positive or even neutral in their stances towards Facebook – many of them were quite negative, such as those that advocated simply deleting one's account in response. Rather, the divergent stances of the participants in mainstream and technology news sources allow another avenue of insight into this larger tension, on display in many of the other areas of the results, of collective versus individualistic responses to Facebook's actions.

This tension is important as it relates to how we understand the way criticality is conceived in hacker literacies. What I argue for in this paradigm is not a particular response driven by a particular set of values; rather, the underlying value of hacker literacies is of seeing sociotechnical spaces and new media tools as themselves imbued with values and as inherently malleable to whatever values people bring to the technology. Implicit in this is an understanding that seeking to promote critical mindsets does not mean imposing one's particular ideological stance on others, but rather giving

them the tools (or revealing the tools they already have) to engage intentionally in the world.

## Conclusion

There are a number of promising trends one can point to with regards to hacker literacies. The first relates to existing voices within academia, journalism and parental discourses that exhibit modes of thought associated with critical digital participation. The second has to do with contemporary movements associated with technology culture itself.

If we look at current journalistic, blogging, and parental discourses, one might contrive a fragmented conversation already in existence that highlights many of the modes of thought associated with hacker literacies. On the far end of the spectrum, media theorists in academia and technology watchers close to industry have been publicly writing and blogging for some time about what social practices and values various participatory technology platforms promote through their features. Examples of this include media scholar Danah Boyd and the civil liberties group Electronic Frontier Foundation. And in both technology focused and more mainstream news outlets, there exist robust conversations regarding issues relevant to this paradigm, as the research in this study shows. More recently, Common Sense Media, a parent media education organisation, launched a campaign based on the idea that "every kid needs to be digitally literate by 8th grade," to quote their chief executive officer, James Steyer (Common Sense Media, 2011). Indeed, in the critical media literacy space we might view newspaper ombudsmen and media watchdog groups as having occupied a similar role as individuals like Boyd or organisations like Common Sense Media during the development of that movement. All of these stakeholders have the potential to help create a culture that regularly asks what kind of social practices and values media participation promotes and whether those line up with those of the user and the culture at large.

The other place that we can look to with a degree of optimism is technology culture itself. There exist many practices that make places like Silicon Valley potentially more amenable to hacker literacies than the traditional media industry associated with print, television, radio and film. In general, the diverse ecology of the Internet has made web developers and their associated investors much more attuned to user experience and desires as a key factor in determining features and functionality. With a potential competitor a click away, participatory web sites are often in "perpetual beta," an environment where untested features are regularly rolled out and users are treated as "co-developers" (O'Reilly, 2005). On a technical level the features are relatively easy to change, and so on a social level a culture of responsiveness to user desires has developed. At the same time, we cannot conflate wanting a better widget on the part of the user as wanting a participatory experience that embodies that values they want to live by, as so often more base desires for ease and function overshadow living according to more deeply held values.

Another positive trend within technology culture are numerous movements focused on positioning both youth and adults in positions of power in relation to technology through a celebration of "tinkering", design and protection of the open web. Most prominent is the increasingly mainstream "Maker" movement, exemplified by Make Magazine and Maker Faires that take place around the globe and which celebrate "do it yourself" (DIY) attitudes with regards to technology. The movement is well characterised by an associated popular motto: "If you can't open it, you don't own it." DIY practices might involve reconfiguring existing devices to serve new functions,

repurposing parts from multiple existing technologies to create entirely novel inventions, or simply taking raw materials as the basis for both analog and technological creations.

Similarly, the Webmaker initiative, launched two years ago by prominent technology organisation Mozilla, maker of the popular Firefox browser, promotes hacker literate practices among both youth and adult populations globally through engagement in web design. Finally, the nature of the web as a designed technological space vulnerable to undesirable reformulations was brought to mainstream consciousness in the highly visible fight around and ultimately defeat of the SOPA and PIPA legislation in early 2012, an instance which has signalled a more coherent mainstream digital liberties movement (Croeser, 2012).

It's my hope that the positive trends identified with regards to the development of a culture that engages in hacker literacies come to prove more resilient than the challenges, and I believe that educators, academics, technologists, parents, and youth all have a role in making that hope come to pass, as do bloggers, fan fiction writers, makers, gamers, and cultural participants of all sorts. As vested and powerful interests move from dominant role in the realm of mainstream media and advertising into new digital and technological spaces, stakeholders from many sectors will have a role to play.

While I believe the sorts of participatory cultures associated with digital technologies cannot, by virtue of their many to many structure, be dominated by a single vested interest completely, without incorporating critical practices into participatory ones, people may find themselves living in a technologically mediated culture dictated by interests other than their own.

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