How the Technological Design of Facebook Homogenizes Identity and Limits Personal Representation

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Introduction

Ever since its inception, people have used the technology of the Internet to represent themselves to the world. Sometimes this representation is a construction based on who they are outside the network, such as with a personal webpage or blog. Other times people use the built-in anonymity of the Internet to explore and engage alternative identities. This identity tourism (Nakamura, 2002) takes place within game spaces (e.g. MUDs, MMORPGs), chat rooms, or forums, as well as within those spaces already mentioned such as webpages and blogs. In each case, the underlying technology that facilitates this network society of digital representations is software. How this software is designed by its creators determines the ways that users can (and cannot) craft their online representation.

The most popular network space for personal representation is Facebook, the world's largest online social network. The site has more than 500 million active users and has become the most visited website in the United States, beating out Google for the first time in 2010 (Cashmore, 2010). Facebook functions as a prime example of what Henry Jenkins (2006) calls "participatory culture," a locus of media convergence where consumers of media no longer only consume it, but also act as its producers. Corporations, musicians, religious organizations, and clubs create Facebook Pages, while individuals sign up and fill out their personal profiles. The

information that organizations and people choose to share on Facebook shapes their online identity. How those Pages and profiles look and the information they contain is determined by the design of the software system that supports them. How that software functions is the result of decisions made by programmers and leaders within the company behind the website.

This paper explores how the technological design of Facebook homogenizes identity and limits personal representation. I look at how that homogenization transforms individuals into instruments of capital, and enforces digital gates that segregate users along racial boundaries (Watkins, 2009). Using a software studies methodology that considers the design of the underlying software system (Manovich, 2008), I look at how the use of finite lists and links for personal details limits self-description. In what ways the system controls one's visual presentation of self identity is analyzed in terms of its relation to the new digital economy. I also explore the creative ways that users resist the limitations Facebook imposes, as well as theorize how technological changes to the system could relax its homogenizing and limiting effects.

Methods

The developed world is now fully integrated into and dependent on computational systems that rely on software. Most critical writing about new media fails to explore this underlying layer of the system (Wardrip-Fruin, 2009). If we are to understand the effects of these systems, it is imperative that we investigate the

ways that software, through both its vast potential and its limiting paradigms of thought, leads to certain kinds of systems and not to others.

Matthew Fuller, in his volume "Software Studies \ A Lexicon," refers to this balance between potential and limit as "conditions of possibility." (Fuller, 2008, p. 2) Just as the principle of linguistic relativity theorizes that the structure of spoken or written language affects our ability to think (the Sapir-Whorf hypothesis) (Hoijer, 1954), so does the structure of computer languages affect the types of procedures and algorithms we can create in software. Given that software now "permeates all areas of contemporary society," (Manovich, 2008, p. 8) we need to consider this software within the context of its inherent limitations (both technical and cultural) as we investigate the media it enables.

Therefore, in this paper I will utilize a software studies approach, as outlined by Fuller and Lev Manovich, in my analysis of how Facebook homogenizes identity. Consideration will be given to the ways that the syntactic, economic, and cultural aspects of software development lead to certain types of human-computer interfaces. In addition, as part of this cultural aspect, I will also look at *who* is writing today's software, and how their histories lead to certain types of user experiences.

My viewing of Facebook for this paper took place between April and May of 2011. As Facebook is constantly changing the site, features discussed in this paper may change at a later date.

Literature Review

Software studies is a relatively young discipline, even for new media scholarship. The term was first coined by Manovich in *The Language of New Media* (2001), but has only come to refer to a particular methodological approach in the last few years. The *New Media Reader* (Wardrip-Fruin & Montfort, 2003) anthologized papers that explore the history of software as it relates to cultural history. Fuller's aforementioned 2008 volume was the first text published specifically about software studies. In 2009, Wardrip-Fruin published *Expressive Processing*, exploring how software drives narrative technologies such as games and digital fiction. This is the first book in a new MIT Press series on the subject, which is edited by Manovich, Fuller, and Wardrip-Fruin. The most recent edition in the series is a work that explores the relationship between programmability and ideology (Chun, 2011a).

Software studies first focus on the two most important aspects of software, data structures and algorithms (Manovich, 2008; Goffey, 2008). How programmers compose structures to hold data controls the internal representation of those data stored by the program, and thus has a significant affect on the way that data can be searched, presented, or stored. A fundamental unit of many such structures is the list, a flexible and "ordered group of entities (Adam, 2008, p. 174)." Algorithms, on the other hand, are abstract procedures devised by computer scientists to operate on that data, stipulating how the data flows through the program, and the methods for evaluating and transforming it into whatever the program requires (Goffey, 2008).

Other relevant topics within this paradigm include the relationships between computational power and social authority (Eglash, 2008), and the ways that notions of interaction disrupt the composition of algorithms, forcing modes of action on both the computer and its human counterparts (Murtaugh, 2008). A number of scholars have recently explored how race intersects with technology, including the notion of race *as* a technology (Chun, 2011b), the similarities between physical and digital gated communities (Watkins, 2009), and how aspects of modularity in UNIX relate to the structures of racism (McPherson, 2011).

In order to understand how Facebook homogenizes identity, it is also necessary to understand previous investigations of identity in network spaces. In general, identity functions as a "self-concept," or "the totality of the individual's thoughts and feelings with reference to himself as an object (Rosenberg, 1979, p. 8)." Identities are personal "sources of meaning" based on self-construction and individuation, and within the network society, organize around one's single primary identity before they combine to develop into collective identities (Castells, 1997, p. 6). These collective identities are supported by information communication technologies such as mobile phones, social networks, and electronic messaging systems.

The movement into online spaces, which started en masse with the launch of *Netscape Navigator* in 1995, has had a further broadening effect on identity. In its infancy, the web was primarily an anonymous space where anyone could adopt any identity without others connecting them to their offline selves. This allowed role-playing as alternative identities within chat rooms, MUDs, and bulletin boards

(Turkle, 1995). The option to role play in this way led to a more fully engaged act of identity tourism, where individuals try on different racial or gender identities, enabled by the anonymity of the network (Stone, 1996; Turkle, 1995; Nakamura, 2002). At first this tourism manifested primarily in text-based environments, but as technologies improved, evolved to extend into visual environments and representations, such as avatars (Nakamura, 2007). While such role playing holds potential promise for empathy and expansion of viewpoint (Zhao, Grasmuck, & Martin, 2008; McKenna, Green, & Gleason., 2002; Suler, 2002; Rosenmann & Safir, 2006), it can also lead to the reinforcement of stereotypes through the resultant suppression of gendered or racial discourse (Nakamura, 2002). Part of Facebook's current popularity originates from its exclusionary framework; the site's genesis as a boutique Ivy League network has led it to enable segregation along racial lines, and to its domination of use by upper class educated whites (Watkins, 2009; Hargittai, 2011).

Not all online identities are anonymous. Facebook's requirement (and enforcement) of real identity within their system makes it the locus of a significant shift away from anonymous online identity. Zhao (2006) refers to these online real identities as "nonymous anchored relationships," connections that exist within the online world but are supported by non-anonymous connections in the offline world. As Zhao explains, if the real world results in the presentation of "masks" that hide certain aspects of self, and the anonymous online world facilitates the lifting of that mask for the presentation of one's "true" self, the nonymous online world is somewhere in the middle, allowing people to present their "hoped-for possible

selves" (Yurchisin, Watchravesringkan, & McCabe, 2005). Zhao's 2006 study found that Facebook users tend to stress "group and consumer identities over personally narrated ones (p. 1816)." Another study explored this "hoped-for" concept in regards to racial identity, and also found that users use self-selected or autophotography to enhance or steer their online representations (Grasmuck, Martin, & Zhao, 2009).

These nonymous online spaces that use and reveal actual identities threaten individual's abilities to shift their online representations over time. Those newer to the internet (whether because of age or lack of exposure) are often slow to realize that the network retains whatever they post online. This makes individual change and exploration more difficult due to the perpetual storage and retrievability of the information they make public (Blanchette & Johnson, 2002; Mayer-Schonberger, 2009).

To date, no software studies-based analyses have been published about Facebook. Given Facebook's increasingly powerful position in contemporary society, it is essential that scholars begin to unravel the hows and whys behind the site's functionality. Doing so requires, among others, a software studies approach if we are to fully understand its role and power in the network society. Combining this approach with an analysis of Facebook's role in the shaping of identity should reveal new insights critical to understanding how social media function within digital culture.

Facebook's Ideology of Singular Identity and the Commodification of the Individual

Before unraveling some specifics regarding Facebook and identity homogenization, it's important to understand how and why the site focuses on nonymous relationships. According to Facebook CEO and founder Mark Zuckerberg, "having two identities for yourself is an example of a lack of integrity (Kirkpatrick, 2010, p. 199)." The design and operation of Facebook expects and enforces that users will only craft profiles based on their "real" identities, using real names and accurate personal details (Facebook, 2011). This ideological position of singular identity permeates the technological design of Facebook, and is partially enforced by the culture of transparency the site promotes. The more one's personal details are shared with the world, the harder it is to retrieve or change them without others noticing—and thus being drawn to the contradictions such changes might create. This is further enforced by the larger software ecosystem Facebook exists within, such as search engines, that index, store, and retain those personal details in perpetuity (Blanchette et al., 2002).

Why is Zuckerberg so bullish on singular identity? He says it's to encourage people to be more authentic, and that the world will be a better place if everyone shares their information with anyone (Kirkpatrick, 2010). Given that Facebook's servers are primarily constituted of data produced by the immaterial free labor of its members (Terranova, 2000), and that the monetary value of Facebook is the advertising usefulness of that data, it's no wonder that Zuckerberg prefers extreme transparency. The financial future of his company depends on it. Facebook now delivers more ads than Yahoo, Microsoft, and Google combined (Lipsman, 2011).

The more data they collect the more advertising dollars they can deposit (Manovich, 2008).

The value of that data is further enhanced by its connection to real identity, as well as the way that singular identity encourages the blending of one's disparate communities into one space. By disallowing alternative identities and multiple accounts, Facebook pushes its users to build networks containing people from their work, family, and friend communities. This discourages the code-switching (Watkins, 2009) that happens when people use different networks for different aspects of their lives, and instead forces them to consolidate their online (and offline) identities into a singular representation. It literally reduces difference by stifling interactions that might have happened in alternate spaces, but are now off-limits because of conflicts between social communities. For example, a user will resist posting something about their hobby interests because it conflicts with their work persona. Therefore, this blending begins to limit personal representation and is thus a significant step on the road to identity homogenization. Further, this limiting makes Facebook's users more useful instruments of capital, as a reduction of difference means marketing and product development tasks are easier and less expensive for corporations.

Community Pages and the Consolidation of Interest

Ever since Facebook opened itself up to the public in 2006 (abandoning its previous exclusivity to university students), it has steadily made changes to the way the site operates. In April of 2010, Facebook rolled out a new feature they call

'Community Pages.' Community Pages made it possible for Facebook users to 'like' topics (in addition to specific brands or groups who had been represented by Fan Pages), by allowing the creation of pages devoted to these (relatively) abstract concepts. For example, a user could 'like' hip hop music by linking their profile to the 'Hiphop' Community Page. These pages are not run by any one individual, but simply serve as collection points that gather links to everyone on the site who lists themselves as liking the genre.

The way that Community Pages interface with an individual's profile is significant. Prior to this change, each Facebook user had a series of text boxes on their profile where they could describe themselves. These boxes were labeled, and included headings such as 'Activities,' 'Interests,' 'Favorite Music,' 'Favorite TV Shows,' etc.. Users would fill these boxes with whatever text they desired. While often what they listed would fit the category (e.g. a list of TV shows in the TV Shows box), sometimes they would use them as methods of distinction or resistance (e.g. saying that they 'don't watch TV' in the TV Shows box).

When Community Pages were introduced, Facebook used them as a mandatory replacement for the previously open-ended text boxes. No longer could users write whatever they wanted in a text box to describe themselves. Instead they had to "connect" (link) their interests with Community Pages already in the system. During the conversion to the new system, users were offered the chance to convert what they had in their text boxes into Community Page links, but that option only worked when pages already existed with descriptions similar or identical to their own handmade lists.

The result of this change was significant. The old contents of many users'

text boxes were wiped out. Those users most affected were those who had used the

text boxes as methods of resistance or distinction (either by listing information that

wasn't actually related to the stated topic of the box, or by being unique in how they

described the information). Even those users who had been using the boxes as

Facebook intended found the bulk of their carefully crafted text deleted forever.

Why would Facebook enact such a change? There are two reasons, each

related to the other and both related to the commodification of the individual. First,

standardizing and linking everyone's interests to Community Pages makes it easier

to keep track of who likes what. "By interacting with these interfaces, [users] are

also mapped: data-driven machine learning algorithms process [their] collective

data traces in order to discover underlying patterns (Chun, 2011a, p. 9)." Second,

this standardization makes it all the easier to sell advertising to corporations

interested in targeting specific groups of people. For example, if an advertiser wants

to reach those who like hip hop music, under the old system they would have to

think of every label a user might choose to display that interest. This could include

band names, song titles, genre descriptions, musician names, etc. Under the new

system, all they need is the list of users already mapped as 'liking' the Hiphop

Community Page.

Community Pages are also an illustrative example of how data structures and

computational power lead to certain kinds of interfaces or modes of presentation.

Under an increasing pressure to monetize the data they store, Facebook looks for

ways to limit difference across the site. In fact, it's an imperative given the

exponential increases in data occurring with their current level of growth. As described above, being able to sell an advertiser a list of people that like Hiphop is more valuable than asking them to target specific keywords. Further, enabling their advertising algorithms to pre-identify potential targets of advertisements requires a consolidation of interest and identity—otherwise there's just too much data to sift through.

How Lists Limit the Self-Description of Gender

When a prospective user visits Facebook's homepage to sign up for a new account, they are asked six preliminary and mandatory questions. Those questions are: 1) first name, 2) last name, 3) email, 4) password, 5) birthday, and 6) gender. While above I have addressed issues related to questions of name and its relationship to Facebook's ideology of singular identity, here I want to start by focusing on this question of gender.

Facebook asks this mandatory question as follows: "I am:". For an answer, the user is presented with a drop-down list containing two choices they can select from: 'Male' or 'Female.' In other words, a user can say 'I am Male' or 'I am Female.' There are no choices to add your own description or to select a catchall alternative such as 'other.'

These limited choices exclude a set of people who don't fit within them, namely those who are transgender. Transgender individuals are uncomfortable with the labels 'man' or 'woman' for a variety of reasons, such as "discomfort with role expectations, being queer, occasional or more-frequent cross-dressing,

permanent cross-dressing and cross-gender living," as well as those who undergo

gender reassignment surgery (Stryker & Whittle, 2006, p. xi). Someone with a

transgender identity lives that identity as strongly as a man or a woman, and, while

some might choose to describe that identity as 'male' or 'female,' others prefer a

more complex description.   However, Facebook excludes them from listing that as

part of their user profiles. This exclusion puts Facebook at odds with other online

communities, such as Second Life, where the portrayal of gender is a function of the

way one constructs their avatar (although identifying as transgender within Second

Life can be fraught with prejudice and harassment (Brookey & Cannon, 2009)).

  If we accept that Facebook's primary motivation is to monetize its data and

to get its advertisements in front of eyeballs (Lipsman, 2011), then why do they

exclude an entire group from participating? Wouldn't the accommodation of as

many people as possible best serve their financial interests? I'll focus on three

reasons that lead to this exclusion.

  First is that Facebook is a designed space, and a designed space inherently

represents the ideologies of those who designed it. Despite software's propensity to

hide its actions and origins, this "invisibly visible" (Chun, 2011a, p. 15) entity is

something that, at its core, is created by humans. In other words, software is an

embodiment of the philosophies and cultures of its designers and how they think

(McPherson, 2011). While a demographic analysis of Facebook's programming staff

is not available, we know from more broad analyses that Silicon Valley is primarily

run by white men, with a significant underrepresentation from white women and

racial/ethnic minority males—especially in positions of mid- and upper-level

management (Shih et al., 2006, Simard et al., 2008). This analysis holds true in terms of Facebook's senior leadership; their executive staff is 15% female (with zero women in technical leadership roles), while their board of directors is 100% male (Facebook, 2011b,c). An industry that is failing to hire and/or promote women and minorities is unlikely to be run by individuals concerned with the politics of gender. The biases or prejudices that contribute to this situation, intentionally or not, have manifest themselves in this question of "I am:."

Second is that an important component of Facebook's popularity is the way it allows and encourages its users to form virtual gated communities. Craig Watkins (2009) explores this topic at length in chapter four of his book, *The Young and the Digital*. He, as well as Esther Hargittai (Hargittai, 2011), have found that lower class and Latino users frequent MySpace, while upper class, educated white users prefer Facebook. An important part of that preference is that white users desire exclusive communities that keep the "fake" people out. With this "I am:" question of gender, Facebook launches each profile with a degree of exclusion, and thus, potentially leading to its white users seeing Facebook as "safe" and "private," "simple" and "selective" (Watkins, 2009). Enabling those with alternative gender identities to accurately represent themselves on the site, not to mention foregrounding the issue as part of a mandatory question on its homepage, would not be supportive of the selective atmosphere Facebook has built, and from which it benefits.

Third is that the drop-down list is an interface paradigm born out of software. The "I am:" question allows everyone to make a choice, as long as it's one of the two options already presented. No accommodation is made for selecting

something other than male or female. A logical human solution to this problem would be to let everyone provide their own description. While a majority of people would still likely choose male/female, or man/woman, those who don't feel they fit in either of those categories could write their own description. As computer users, we tend to blindly accept this kind of interface without regard for its exclusions; this is one way that software is contributing to the homogenizing ways we think about and describe ourselves.

Drop-down lists, or other interface models that present a list of predetermined choices (e.g. radio buttons, check boxes) illustrate the way that new media interfaces are crafted in response to methods of programming as much, or more so than they are in response to notions of human-computer interaction. This crafting starts with how data is represented within software systems. The most common building block of software data structures is the list (Adam, 2008), such as an array (an ordered set of data accessible by numerical index). Arrays are typically of preset sizes, and in the case of the "I am:" question, would be of size two, one index for 'male' and the other for 'female.' The array serves to manage the data during the computational stage (e.g. waiting for and then grabbing the data from the user), but must eventually be stored. Storage occurs within a database, where each user likely receives a row of their own, and in which gender would be stored as a single table cell of data. While this cell could conceivably contain a string of text taken from the user, it is more useful for Facebook if they already know what could be in that box.

Knowing ahead of time what genders are possible, and limiting those possibilities to a known set enables a number of subsequent software-driven actions. First, it is easier for Facebook's search engines to index user data if they know what the options are, because searching through a finite list is much faster than searching through an unending list of custom personal descriptions. This means that faster searching algorithms can be devised. Second, it makes it easier to make comparisons across users. If everyone writes their own custom descriptions, then every spelling difference, every text case difference, and every difference of phrase makes it harder for Facebook to aggregate users into broader classifications. Aggregation is a useful tool for improving computational performance, as it limits data. Perhaps more importantly, aggregation better serves the needs of their advertisers who want to quickly and easily target whole classes of potential consumers.

Language Lists and the Representation of Racial and Ethnic Identity

If gender identity is limited to two choices, how does Facebook manage racial and ethnic identity? There are no specific questions within one's profile that ask for this kind of information, but there is a query in direct relationship to it: languages. At first glance, this question, just a couple below the gender drop-down, appears to welcome a self-description. It is listed as "Languages:" followed by an empty text-box. However, if one starts typing in this box they will find it quickly attempts to autocomplete what they're typing to match a pre-determined list of languages.

While there are quite a large number of languages available for autocompletion, many are still missing. For example, those who speak the Chinese languages of Min or Gan cannot select their language. These languages are spoken by 110 million Chinese people combined. The Ethiopian language of Gallinya, spoken by 8 million people, is also not available. If a user types Gallinya in the box anyway and hits Enter, the page refreshes and fails to list that language on their list. It acts as if they never typed anything at all.

While Facebook will likely continue to add languages over time, this method of choosing from a pre-determined list of choices is once again emblematic of an interface born from the programmatic thinking of software developers. In this instance, Facebook has setup a list much larger than the one for gender, but it is still a finite list. Therefore, while it presents similar problems to those posed by the gender question, it also presents additional problems. First, the list appears to be most exclusionary of non-western languages (I could not find an official language from North America or Europe that doesn't appear). Second, even when Facebook does have a match for a particular language, their spellings sometimes differ from those used by speakers of those languages (e.g. Facebook lists Kaqchikel, a language spoken by 500,000 Guatemalans, but doesn't list its alternate spelling Kaqchiquel). Finally, many regional dialects of the languages it does include are not listed.

It is unsurprising that Facebook hasn't been able to include all of the world's languages in its list. There are so many variations and versions that the task might be impossible. However, what is important about the missing languages, spellings, and dialects is that it illustrates the degree to which Facebook cannot preprogram

the identifiers of racial and ethnic identity that the world's population would use to describe themselves. That they try to anyway, using a limited choice interface model, ends up revealing their "lenticular logic," magnifying the ways that their abstractions of identity lead to technologies "which underwrite the covert racism endemic to our times (McPherson, 2011)." The result, then, is an interface that reduces, and therefore excludes, difference. By forcing individuals to choose particular spellings or dialects, or to not list their language at all, their identities are homogenized into smaller collections, all for the goal of making them easier to sort, search, and advertise to. This obfuscation of identity may enable some protective benefit, in terms of the way it protects their real identities from advertisers and others, but only at the cost of losing the potential for accurate self-description and the negatives that may entail.

Visual Representation, Reduction of Difference, and the Digital Economy

Facebook's reduction of difference and limiting of identity is not restricted to the data it collects and disseminates, but is also a product of its visual style. Every user's profile looks nearly identical, with only a small photograph and a list of increasingly homogenized identifiers to distinguish them. Where those elements reside on the page, the colors they're rendered in, their order of presentation, and even the background behind them are all predetermined. Almost zero customization is possible, leaving each one of Facebook's 500 million users looking more and more like the residents of a typical gated community, even though there is a world of difference on the other side of the screen.

This visual blurring of difference is a new trend across the Internet, one which Facebook appears to be leading. In the earlier days of the Web, individuals created homepages for themselves using the limited options available to them. Pages had blinking text, garish colors, low-resolution photographs, and poor typography. As the production tools used to craft webpages improved, so did the uniqueness of designs and personal representations. But in recent years, the use of Facebook profiles as one's personal space on the Internet has risen substantially. Because of the fixed visual design of these spaces, each individual represented literally looks the same.

Combining this visual homogenization with the reductions of difference described earlier blurs the "territory between production and consumption, work and cultural expression. ... Production and consumption are reconfigured within the category of free labor," and "signals the unfolding of a different logic of value (Terranova, 2000, p. 35)." This new logic is a digital economy focused on the monetization of the free and immaterial labor that each user gives to Facebook. In return, their Facebook profiles increasingly look like a cross between a resume and a shopping list, telling the world who they work for and what products they consume. As Chun writes so eloquently in her new software studies book *Programmed Visions* (Chun, 2011a, p. 13):

> You. Everywhere you turn, it's all about you—and the future. You, the produser. Having turned off the boob tube, or at least added YouTube, you collaborate, you communicate, you link in, you download, and you interact. Together, with known, unknown, or perhaps unknowable others you tweet, you tag, you review, you buy, and you click, building global networks, building community, building databases upon databases of traces. You are the engine behind new technologies, freely producing content, freely building the future,

freely exhausting yourself and others. Empowered. In the cloud. Telling Facebook and all your "friends" what's on your mind. ...

　　　　But, who or what are you? You are you, and so is everyone else. A shifter, *you* both addresses you as an individual and reduces you to a you like everyone else. It is also singular and plural, thus able to call you and everyone else at the same time. Hey you. Read this. Tellingly, your home page is no longer that hokey little thing you created after your first HTML tutorial; it's a mass-produced template, or even worse, someone else's home page—Google's, Facebook's, the *New York Times'*. You: you and everyone; you and no one.

Chun's *you* is the homogenized you. The you represented by a Facebook profile, the you whose identity is being reduced to a set of links—links pointing to Pages that enable the site's advertisers to sell you the latest and greatest products of late capital.

Ways Users Resist Profile Limitations

Despite Facebook's reductionist visual style, some users have found ways to resist it from within the system. For example, ever since the "new" profile was released in late 2010, the top of each profile now includes thumbnails of the last five photos a user was tagged in. For most, this tends to be a random collection of event photos, usually without any particular ordering. A few users, however, utilize their knowledge of how it works to construct singular images that stretch across their page from left to right, using the five photos combined with their profile image as tiles of a larger image (Figure 1). While this technique results in a more distinctive visual profile than the norm, it is still within the larger context of an extremely confined visual space that is the Facebook profile. For example, the user in Figure 1 is still confined to liking pages for movies, books, and other brands or media represented by Facebook Pages.

A more significant trend is the action of gender hacking. Using tools built into the major browsers for live editing of HTML and CSS, users are able to temporarily modify the "I am:" gender drop-down list elements.   A video on Facebook (Bayaidah, 2011) teaches people how to accomplish this (Figure 2). The technique allows users to add whatever descriptor they want to the drop-down box (Figure 3), be it 'Transmasculine,' 'Femme,' or 'Fierce' (Picher, 2011). While the drop-down modifiction will not persist beyond the first save, the act results in a permanent alteration of the user's profile; previous and future additions to their News Feed refer to the user with a gender-neutral pronoun such as 'their' instead of 'her' or his.' Technically, this is because users are changing the data in the 'value' field of each of their drop-down choices to 0 (1=Female, 2=Male). That the inserted value of 0 results in a gender-neutral self-description, even on past entries, clearly shows that Facebook has the code in place to allow such neutrality—even if they don't use reveal it in the interface. This is further evidence that Facebook prefers a limiting of gendered description even when they've taken the time to program a system with more options than two.

Other users take a more exclusionary approach. Popular options include refusing to list any personal information beyond the most basic required to gain the account, using false information to create profiles that don't adhere to Facebook's real identity requirement, or avoiding Facebook altogether. While these three options are resistive in nature, they also result in a less than full participation within the economy of Facebook. As the site continues to grow into a primary communication technology, those who resist in these ways may be at a distinct

disadvantage in areas such as job search networking or even regular social interaction.

How Technological Changes Could Relax Facebook's Homogenization of Identity

Given the degree to which the homogenization of identity is an essential component of Facebook's bottom line, it's illogical to presume they want to reverse the trend. However, to the extent that some of the conditions described in this paper are solely the product of programmatic thinking, there is room for improvement. In particular, any feature of the site that limits choice could be written to limit choice less, or to allow nearly unlimited choice. Limits are ultimately the results of decisions made by programmers to implement a feature in a specific way. In the cases of the gender or language questions, for example, the site could allow users to enter any text they want without loosing the aggregation characteristics of the current method. Doing so would require algorithms that perform pattern matching on those entered texts, looking for ways to programmatically make the connections between items that humans so easily do. Alternate spellings of a specific language could be combined under one link while still allowing the user to spell it how they want to. Varied transgender descriptions could still be collected into a subset of identifiers. Such an approach might also be limiting of self-description, but it would be much less so.

Another change that would likely make a more fundamental difference is an expansion of the demographics of software developers. As Shih (2006) points out, the ranks of computer scientists skew heavily towards white men. While there are

certainly exceptions, white men educated in US engineering schools tend to have a certain view of the world. Adding people of various colors and genders to the programming staff (especially in positions of leadership) would change the final product because each and every feature we see on Facebook is the result of a human decision. If we want our software to be more inclusive of racial, ethnic, and gendered viewpoints, then we need a broader demographic bringing their varied contexts to the table when designing the system and writing their code.

Summary

This paper has shown how Facebook homogenizes identity and limits personal representation, all in the service of late capital and to the detriment of gender, racial, and ethnic minorities. The company employs its tools of singular identity, limited self-description, and consistent visual presentation in order to aggregate its users into reductive chunks of data. These data describe people not as the complex social and cultural constructions that they are, but instead as collections of consumers to be marketed to and managed. There are many reasons the company has made these choices, including the demographics of its software development staff and its capitalistic imperative to monetize its database. However, to fully understand how this new digital juggernaut functions it is important to analyze the core component at the heart of it: software. Software is built by humans but also produces new types of thinking that lead to specific types of interfaces. In the case of Facebook, these interfaces are taking the vast promise of an internet-enabled space of tolerance and, in new ways, imposing age-old practices of

discrimination. By exploring software as part of our larger cultural history we can begin to envision new ways of thinking that might help us break away from old ideas in our new digital culture.
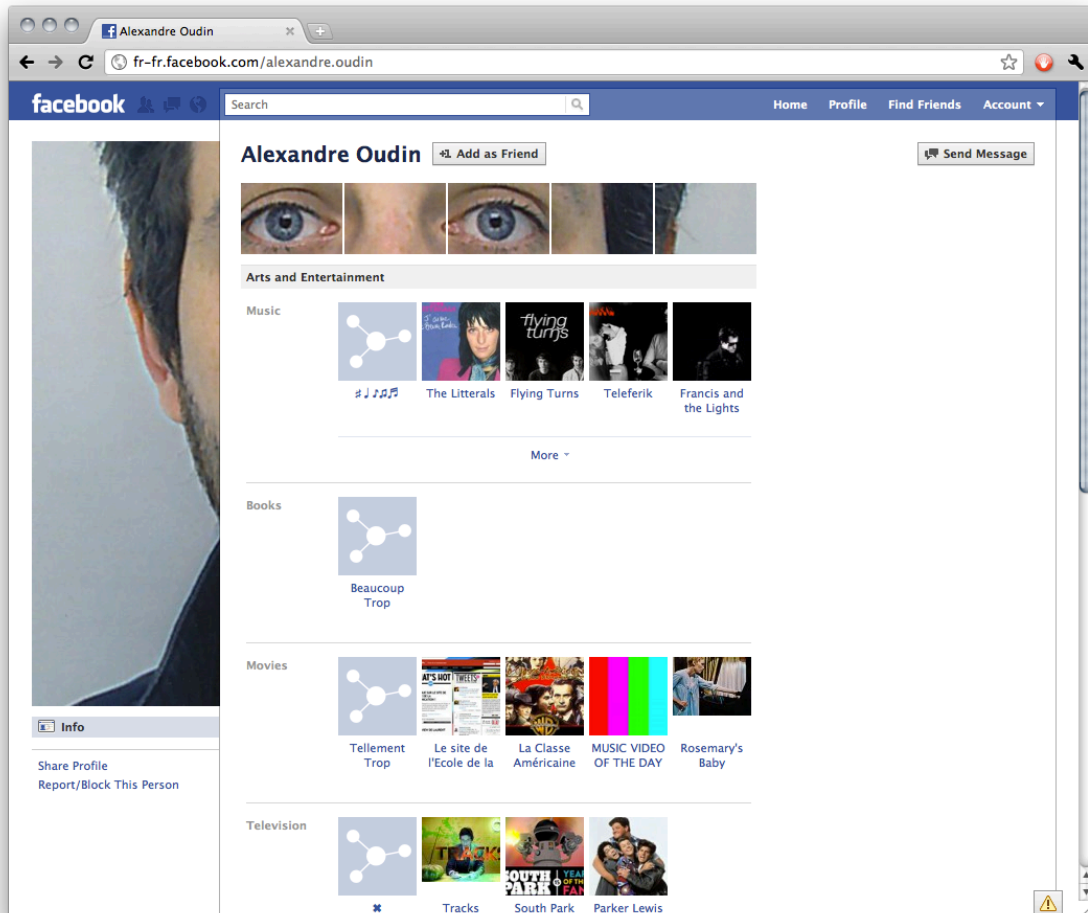
Acknowledgements

Figures

Figure 1: An example of a Facebook profile hack by Alexandre Oudin, using the last five photos across the top in conjunction with the profile photo to break out of the conventional visual style of a typical profile.
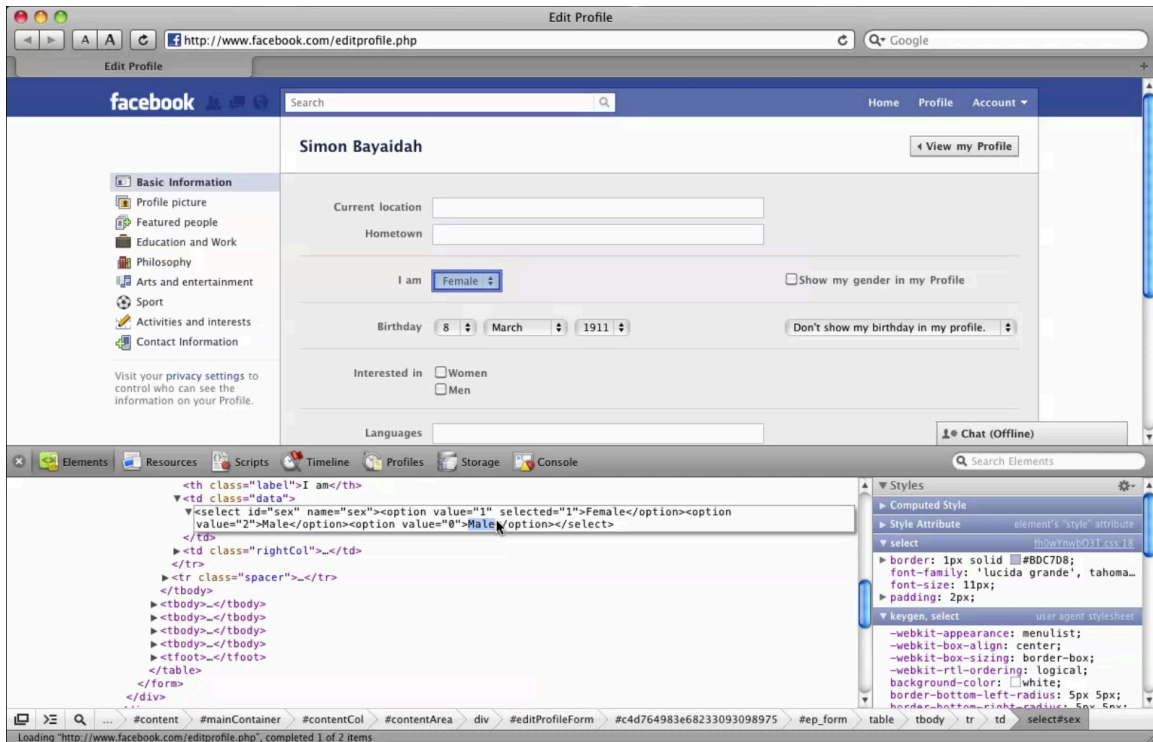
Figure 2: A screenshot from Simon Bayaidah's video on how to hack the gender drop-down dialog in the Facebook profile editing interface. Such editing allows not only a temporary addition to the drop-down choices, but also triggers Facebook to automatically use gender-neutral pronouns when describing the user's actions in their News Feed.

Figure 3: Rae Picher's example of gender hacking the Facebook Profile editor based on the technique outlined by Simon Bayaidah (Fig. 2). This image was used on her Facebook note titled *Facebook's Gender Binary Got You Down?*

Works Cited

Adam, Alison. (2008). Lists. In Fuller, Matthew (Ed.), *Software Studies \ A Lexicon* (pp. 174-178). Cambridge, Mass.: MIT Press.

Bayaidah, Simon. (2011, July 4). Gender Neutral (video). *Facebook.com*. Retrieved from: http://www.facebook.com/video/video.php?v=549384115767

Blanchette, Jean-Francois & Johnson, Deborah G. (2002). Data Retention and the Panoptic Society: The Social Benefits of Forgetfulness. *The Information Society, 18*, 33-45.

Brookey, R.A. & Cannon, K.L. (2009). Sex Lives in Second Life. *Critical Studies in Media Communication 26*(2), 145-164.

Cashmore, Pete. (2010, Dec 30). How Facebook Eclipsed Google in 2010. *CNN.com*. Retrieved from http://articles.cnn.com/2010-12-30/tech/facebook. beats.google.cashmore_1_google-buzz-social-layer-gmail-users

Castells, Manuel. (1997). *The Power of Identity: Information Age, Vol. 2*. Malden, Mass.: Blackwell.

Chun, Wendy Hui Kyong. (2011). *Programmed Visions: Software and Memory.* Cambridge, Mass.: MIT Press.

Chun, Wendy Hui Kyong. (2011). Race and/as Technology, or How to do Things to Race. In Nakamura, Lisa & Chow-White, Peter (Eds.), *Race After the Internet*. New York: Routledge. (forthcoming)

Eglash, Ron. (2008). Computing Power. In Fuller, Matthew (Ed.), *Software Studies \ A Lexicon* (pp. 55-63). Cambridge, Mass.: MIT Press.

Facebook. (2011, May 2). Statement of Rights and Responsibilities. *Facebook.com.* Retrieved from http://www.facebook.com/terms.php.

Facebook. (2011, July 4). Executive Bios. *Facebook.com.* Retrieved from http://www.facebook.com/info.php?execbios

Facebook. (2011, July 4). Factsheet. *Facebook.com.* Retrieved from http://www.facebook.com/info.php?factsheet

Fuller, Matthew. (2008). *Software Studies \ A Lexicon*. Cambridge, Mass.: MIT Press.

Goffey, Andrew. (2008). Algorithm. In Fuller, Matthew (Ed.), *Software Studies \ A Lexicon* (pp. 21-30). Cambridge, Mass.: MIT Press.

Grasmuck, S., Martin, J. & Zhao, S. (2009). Ethno-Racial Identity Displays on
    Facebook. *Journal of Computer-Mediated Communication 15*, 158-188.

Hargittai, Eszter. (2011). Open Doors, Closed Spaces? Differentiated Adoption of
    Social network Sites by User Background. In Nakamura, Lisa & Chow-White,
    Peter (Eds.), *Race After the Internet*. New York: Routledge. (forthcoming)

Hoijer, Harry. (1954). *Language in culture: Conference on the interrelations of
    language and other aspects of culture.* Chicago: University of Chicago Press.

Jenkins, Henry. (2006). *Convergence Culture: Where Old and New Media Collide.*
    New York: New York University Press.

Kirkpatrick, David. *The Facebook Effect.* New York: Simon and Schuster, 2010.

Lipsman, Andrew. (2011, May 4). U.S. Online Display Advertising Market Delivers
    1.1 Trillion Impressions in Q1 2011. *comScore.com*. Retrieved from
    http://www.comscore.com/Press_Events/Press_Releases/2011/5/
    U.S._Online_Display_Advertising_Market_Delivers_1.1_Trillion_
    Impressions_in_Q1_2011

Manovich, Lev. (2001). *The Language of New Media*. Cambridge, Mass.:MIT Press.

Manovich, Lev. (2008). *Software Takes Command*. softwarestudies.com. Retrieved
    from http://softwarestudies.com/softbook/manovich_softbook_
    11_20_2008.pdf (draft)

Mayer-Schonberger, Viktor. (2009). *Delete: The Virtue of Forgetting in the Digital
    Age.* Princeton, NJ: Princeton University Press.

McKenna, K. Y. A., Green, A. S., & Gleason, M. E. J. (2002). Relationship formation on
    the Internet: What's the big attraction? *Journal of Social Issues, 58*(1), 9–31.

McPherson, Tara. (2011). U.S. Operating Systems at Midcentury: The Intertwining
    of Race and UNIX. In Nakamura, Lisa & Chow-White, Peter (Eds.), *Race After
    the Internet*. New York: Routledge. (forthcoming)

Murtaugh, Michael. (2008). Interaction. In Fuller, Matthew (Ed.), *Software Studies \
    A Lexicon* (pp. 143-148). Cambridge, Mass.: MIT Press.

Nakamura, Lisa. *Cybertypes: Race, Ethnicity, and Identity on the Internet.* New York:
    Routledge, 2002.

Nakamura, Lisa. (2007). *Digitizing Race: Visual Cultures of the Internet*.
    Minneapolis, MN: University of Minnesota Press.

Picher, Rae. (2011, July 4). Facebook's Gender Binary Got You Down? *Facebook.com.* Retrieved from: http://www.facebook.com/notes/rae-picher/facebooks-gender-binary-got-you-down/10150166319923922

Rosenberg, Morris. (1986). *Conceiving the Self.* Malabar, FL: Robert E Krieger Publishing Co.

Rosenmann A. & Safir, M.P., (2006). Forced online: Push factors of Internet Sexuality: A preliminary study of online paraphilic empowerment. *Journal of Homosexuality, 51*(3), 71-92.

Shih, Johanna. (2006). Circumventing Discrimination: Gender and Ethnic Strategies in Silicon Valley. *Gender & Society 20*(2), 17-206.

Stone, A.A. (1996). *The war of desire and technology at the close of the mechanical age.* Cambridge, Mass: MIT Press.

Stryker, Susan & Whittle, Stephen. (2006). *The Transgender Studies Reader.* New York: Routledge.

Suler, J.R. (2002). Identity management in cyberspace. *Journal of Applied Psychoanalytic Studies, 4*(4), 455-459.

Terranova, Tiziana. (2000). Free Labor: Producing Culture for the Digital Economy. *Social Text 18*(2), 33-58.

Turkle, Sherry. (1995) *Life on the screen: Identity in the age of the Internet.* New York: Simon & Schuster.

Wardrip-Fruin, Noah & Montfort, Nick (Eds.). (2003). *The New Media Reader.* Cambridge, Mass: MIT Press.

Wardrip-Fruin, Noah. (2009). *Expressive Processing.* Cambridge, Mass: MIT Press.

Watkins, Craig. (2009). *The Young and the Digital: What the Migration to Social Network Sites, Games, and Anytime, Anywhere Media Means for our Future.* Boston, MA: Beacon Press.

Yurchisin, J., Watchravesringkan, K. & McCabe, D.B. (2005). An exploration of identity re-creation in the context of Internet dating. *Social Behavior and Personality, 33*(8), 735-750.

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior 24*: 1816-1836.