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Autistic Social Software[1]

by danah boyd

I think 2004 will be remembered as the year that socially dysfunctional Silicon Valley nerds started getting venture capital to codify their own Asperger's Syndrome in the social interfaces that they created with services like Orkut and LinkedIn, and demonstrated thoroughly just how completely they don't understand human-human interaction, let alone computer-mediated human-human interaction. I noticed on danah's blog recently that AOL only lets you have 200 friends. First of all, 200? Not even a base two number! What's going on there! I can just hear Dustin Hoffman in Rainman: "Can't have more than 200 friends. Must discard a friend. Kmart sucks." - Joel Spolsky, ed.

OVERVIEW

As technologists, we often frame technological use rather than build technology based on users' practices and needs. In this talk, i step back and offer a different framing for what we have done and what kinds of values we have instilled in users. My goal is to challenge us to reconsider our approach so that we can truly meet the needs of people.

SOCIABLE MEDIA, SCI-FI and MENTAL ILLNESS

While "social software" has recently emerged as a phenomenon in the tech community, sociable media has been around since the beginning of the Internet. Email, BBS, Usenet, chatrooms, MUDs and MOOs all captured the imagination of technologists throughout the 1980s and 1990s. Alongside the development of these technologies, academics and pundits spouted off about the utopian dreams that could be fulfilled by these innovations. Their prescriptions mirrored the particular concepts set forth by science fiction, often without the richness that the writers were trying to convey. Idealists envisioned a world where embodied identity would not matter because online, no one would know that you're a dog.

While many science fiction writers try to convey the nuances of human behavior, their emphasis is on the storyline and they often convey the social issues around a technology as it affects that story. Building universal assumptions based on the limited scenarios set forth by sci-fi is problematic; doing so fails to capture the rich diversity of human behavior. Science fiction is not trying to understand human psychology in general; the authors are trying to tap into some aspect of human behavior in order to convey a story.

Extending those conceptual models to the world at large fails to handle the reality that our lives do not play out in a cleanly packaged narrative. From a human psychology perspective, sci-fi models are often naive and simplistic, tools for the story. Outside of sci-fi,

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[1] danah boyd, "Autistic Social Software," Supernova Conference, June 24, 2004. See http://www.danah.org/papers/Supernova2004.html.

human psychology has been a topic of contemporary cultural discourse for the last two decades and topics of human disfunction and mental illness have captured the mainstream imagination through science news articles and films. Remember, George Bush senior declared the 1990s "The Decade of the Brain."

Although all types of mental disorders hit the mainstream press, multiple personality disorder in particular captured the imagination of the public during the 1980s and 1990s. Multiple personality was perceived to be the canonical psychiatric disorder and films tried to capture what the disorder was about. Even Newsweek titled one of their articles on MPD "Unmasking Sybil: A re-examination of the most famous psychiatric patient in history."

Discussions of human psychology, mental disorders and multiple personality also appeared in studies of the Internet. Both Sandy Stone and Sherry Turkle, two famous sociable media researchers, considered the potentials brought on by digital interactions in terms of multiple personality. They saw the opportunity for "parallel lives" and "multiple selves" as empowering, freeing the subject from the restraints of the physical body in everyday life.

Sociable technologies not only supported, but encouraged pseudonymous participation; even today, we talk about it as a protective tool against privacy invasion. People were encouraged to fragment their identity into different pseudonyms so that they could properly contextualize their online participation. They were encouraged to develop multiple selves.

Guess what? People aren't that fragmented. While they may lead faceted lives, their control over what information to present when is very nuanced and cannot simply be partitioned into multiple identities.

Unfortunately, though, our earliest ideas about multiple personality have pervaded not only the discourse around but also the actual technologies of sociable media. Whenever i raise concerns about privacy or vulnerability, i'm often told that people should just create separate identities.

Think about how asinine that is. Why on earth should we encourage people to perform a mental disorder in the digital world? We do so because we've built technology that does not take into consideration the subtle nuances of the identity faceting with which people are already accustomed. As geeks, we were trained to separate policy and mechanism through systems courses. We rely on people to figure out the policies, not realizing that we've framed what is possible through our technology.

As we know, the Internet did not live up to the fantasy of a world where social identity no longer mattered. In "The Turing Game," Amy Bruckman showed that people performed their everyday identity through their personas even when they were trying to perform otherwise. Today, there is a technological tension between having a federated identity[2] (such as Passport) and continuing to build systems that make users build new identities with each new system. The debate around this has turned pseudo-religious, but every effort that i've seen still focuses on the technology not the people and practices. Because of this inverted focus, things like Access-Control Lists (ACLs) and open Friend of a Friend protocols (FOAF) are bound to fail. They aren't situated in people's lives.

AUTISM AND ATTENTION DEFICIT DISORDER

While earlier sociable media was couched in representations of science fiction and metaphors of popular psychology, contemporary sociable media is not devoid of these references. Social

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[2] A hypothetical system, never successfully built, in which a single database holds all your account information so that you can use the same logon information to access every website and account. *–Ed*.

disorders, albeit different ones, still frame many of our conceptions about human psychology. Consider the plethora of articles about autism and Asperger's during 2003-2004. For those who aren't familiar with Asperger's, it is a mild form of autism marked by normal intelligence and poor social and communication skills. Asperger's patients often systematize social activity in order to give it the structure necessary to be procedurally performed in everyday life. Recently, researchers have argued that Asperger's and autism run rampant in the Bay Area. It is important to note that Asperger's is often conflated with another one of mainstream media's pet "mental illnesses": Attention Deficit Disorder. ADD is often marked by an inability to focus on a given task, or, in the case of ADHD, a tendency to hyperfocus and then lose complete focus. Just as with multiple personality, mainstream media has made autism and ADD appear to be commonplace and everywhere.

Technologists have also adopted and promoted these concepts, marking them as valuable to the way of geek life. Many of you are staring at your laptops, multitasking.[3] Although you will only remember a fragment of this talk, you will probably tell me that you remembered the important part or that you were practicing your continuous partial attention. Some of you may already be ninja masters at this, but the majority of you are probably paying poor attention to both the computer task and to me. But you *want* to be a continuous partial attention ninja master because you've been told that all of the cool kids are.

While autism is not nearly as chic as ADD, there are aspects of it that are promoted in our culture. Geek culture has always eschewed ideas of acceptable social interaction and its members pride themselves on having the right to act any way that they want. Don't get me wrong - i've been a rebel all of my life. But there is a value in understanding social life and figuring out how to interact with people on shared terms.

SOCIALLY INEPT COMPUTERS

Just like their creators, computers are notorious for being pretty socially inept. Yet, with sociable media, computers take on a social role or become a mediators between people engaged in social interaction. Their position in social life does not inherently make technology any more sociable; their functions are intimately entwined with what people enable them to do. Thus, the onus is on the programmers to empower technology to operate in social life.

What does this mean for sociable media? We do not understand how social life really works. Thus, we make crude approximations for it and we make crude approximations for human psychology too. In the tech world, we often make these assumptions based on material like science fiction and pop psychology because we pride ourselves from being removed from an understanding of social life. Simplistic or mechanical understandings of social life are exactly what if you have autism.

From an autistic perspective, social life can and must be programmatically and algorithmically processed and understood on simplistic categorical levels. The nuanced relationships that people regularly manage in everyday life are boiled down to segmented possibilities. When we teach autistic children to engage in social life, we teach them things like facial expressions. We tell them that a smile means goodness; that a frown should be concerning. Step by step, we dissect social affect and try to formalize it so that these kids can

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[3] At computer conferences these days, like the one where this talk was given, it's not unusual for 80% or 90% of the audience to be using laptops for *something* during the presentations. *–Ed.*

understand the world. This is also what we do with computers. How different is this from asking "Are you my friend, yes or no?"

Consider, for a moment, the recent surge of interest in articulated social networks such as Friendster, Tribe.net, LinkedIn, Orkut and the like. These technologies attempt to formalize how people should construct and manage their relationships. They assume that you can rate your friends. In some cases, they procedurally direct how people can engage with new people by giving you an absolute process through which you can contact others.

While this approach certainly has its merits because it is computationally possible, i'm terrified when people think that this models social life. It's so simplistic that people are forced to engage as though they have autism, as though they must interact procedurally. This approach certainly aids people who need that kind of systematization, but it is not a model that makes sense universally to all people. Furthermore, what are the implications of having technology prescribe mechanistic engagement? Do we really want a social life that encourages autistic interactions?

We technologists are notorious for building software based on our own practices and values instead of constructing them based on people's values and needs. Yet, such an approach can often leave the mainstream at a loss, forced to subscribe to the views set forth by developers or fail trying. If we are really trying to build sociable media that supports social interaction, shouldn't we do it based on what social life looks like? Shouldn't we allow for the vast array of nuances that allow people to interact differently depending on their needs?

None of the articulated social networks model everyday life. Feel free to read my other work if you want to understand how these networks diverge from social life and the theoretical knowledge that they're purportedly built on. But realize that creating an open-source federated identity across these networks doesn't solve the underlying problems embedded in the technology. You can't cure multiple personality disorder in order to address autism. This is exactly what we're trying to do when we talk about FOAF.

This does not mean that simplistic models of daily life are not fun and cannot be toyed with. People love to see such slices of themselves. Why do you think quizzes like "Which Star Wars character are you?" are so popular? They're not insightful, but they provide for interesting reflection, opportunity for sharing and social play. They afford us the same opportunity for internal and shared conversation as tarot cards. That's not the same as having a meaningful model of someone's social psychology.

Simplistic models of human interaction pervade our industry. When technologies based on them are rapidly adopted, we tout the merits of those technologies, without stopping to consider what people are actually doing with them.

FRIENDSTER'S SUCCESS

Consider Friendster. It was developed as a dating site. The expected usage scenario was simple: get people to map out their social network so that single people could be introduced to other single people in a trusted environment. Guess what? For the majority of users, this scenario did not resonate. Even those who used the "introduce" feature often did so to introduce mutual friends so that they could connect on the site.

What was successful about Friendster had nothing to do with its original purpose or design. Instead, users saw it as a flexible artifact that they could repurpose to reflect their social practices. As i learned how people embedded Friendster into their daily lives, i was fascinated by how it manifested itself as so many different tools to so many different people. Some saw it as an information gathering tool, allowing them to learn about friends and

strangers. Others saw it as a performance tool and a venting site. It was also used as a gaming device, a distribution channel for the drug dealer, an anti-depressant for the voyeur, a popularity contest for the wannabe prom queen. Many also saw it as a cultural artifact necessary for all water cooler discussions.

For a while, Friendster decided to limit acceptable behavior on its site. Their reason was valid: server load problems. Due to ever-increasing downtimes and poor performance, access was limited. Yet, efforts were made to control what users did and how. This stopped the load problem by off-putting early adopters. Many of the earliest adopters grew bored and disenchanted with the site: it no longer provided them with the range of interactive opportunities that drew them there. Yet, it continued to spread to new user groups whose practices differed and they found new mechanisms for interaction on Friendster.

Consider the hundreds of students from Singapore and Indonesia who create Friendsters for their teachers so that they can write testimonials about them. While the myriad of Fakesters haunted Friendster a year ago, today's Friendster is filled with underage users and fraudulently constructed people who represent the arch nemeses of these teens' lives.

The simplicity of Friendster allowed it to be repurposed over and over again. Its popularity did not validate its underlying model, articulated social networks or the values embedded in the technology. Its success validated that people love flexible artifacts that allow them to reflect on themselves and their social situation. Friendster's popularity was viral because of its flexibility, not because people bought into the values set forth by the company.

In the last year, hundreds of companies have decided that social networks are the hot thing and must be incorporated into everything. I'm often told that social networks are the future of the sociable Internet. Guess what? They were the cornerstone of the Internet, always. What is different is that we've tried to mechanically organize them, to formalize them. Doing so did not make social networks suddenly appear; formalization meant that they became less serious, more game-like. All other Internet social networks are embedded into another set of practices, not seeking an application to validate their existence.

In their current version, social networks are a performance device. We construct our identity in terms of other people. We collect friends and communities to signal who we are, what we believe in. We pad our blogrolls with people that we admire.[4] These signals say a lot of things, but they do not say anything about our actual social network - our trust relationships or information flow.

People often ask me where those early adopters of Friendster went. Sure, some went to Tribe.net or MySpace or other social networking tools, but the vast majority of them just went back to their pre-Friendster lives, no longer using any such tool. They weren't into Friendster for its social networking capabilities; they were into it because it fit into their lives.

SITUATING TECHNOLOGY IN PRACTICE

I was asked to talk about the future and i have to say that i'm a little frustrated. There's a tendency to follow the hype, perfect it, fix technological problems. But, in doing so, i fear that we lose track of the bigger picture. What makes sense in this domain is not to perfect the technology and deal with the social consequences later or to build a bazillion replications, as though mimesis will bring cash flow. Instead, we must step back and think about what social

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[4] A blogroll is a list of *other* blogs that you put in the margin of your blog, usually blogs you read frequently, or blogs of friends, or blogs that you hope will link back to you. –*Ed.*

practices we're aiming to address and what values we're inserting while trying to address them. We've learned a lot during this iteration, but yet we have learned nothing.

The most successful sociable technologies are those that fit into people's lives and practices; they fill the gaps that people have rather than creating artificial needs. Email and Usenet emerged to provide geeks with a mechanism for communicating one-to-one and one-to-many; they filled a need. Youth in Europe and Asia figured out how SMS could be manipulated to meet their needs and the technologists followed their lead as new versions were developed. Even LiveJournal was based on a standard practice: journaling. It too evolved based on what it was that LiveJournal users were doing both online and off and the practices that exist there no longer resemble journaling.

In other words, it is not to say that we can predict what technology will fit into people's lives but we can learn from the technologies out there in order to evolve our own.

There are three ways to make technology work in the context of people:

1. Make a technology, market the hell out of it and demand that it fit into people's lives. When this fails, logroll. In other words, bundle it with something that they need so that they're forced to use it. Personally, i think that this is pretty disgusting, although i recognize that it is the way that the majority of our industry works.
2. Make a technology, throw it out to the public and see what catches on. Follow the people who use it. Understand them. Understand what they are doing and why and how the technology fits into their lives. Evolve to better meet the needs and desires of the people who love the technology.
3. Understand a group of people and their needs and then develop a technology that comfortably embeds itself within the practices of those people. Make technology ubiquitous.

Personally, i believe that the latter two approaches are the conscientious way of designing sociable technology. The third approach is the common mechanism used by researchers in industry while the second can be the contribution that social software makes when it stops and pays attention to what it has produced rather than just throwing out more technology to fix technology problems.

We are talking about technology meant for people to engage with other people. Users may do the darndest things, but they're only peculiar when you try to understand it in your framework. Reframe what they are doing in their framework. Instead of demanding that they behave like we want them to behave, try to understand why they chose a path that is different than ours. When we can understand their perspective, we're halfway there.

The trick then is to design from that perspective, to truly get it, not just be tolerant of it, to iterate our technology based on their perspective since they're the ones who are evolving the practices. When we ::groan:: about those darn users, we're missing the point. They're not interacting with technology to prove a point to us. They're interacting with technology because it fits into their framework of the world. Understanding that, really getting that... that is the key.

I'd like to conclude with a quote by Douglas Adams in "Stop Worrying and Learn to Love the Internet"—"Working out the social politics of who you can trust and why is, quite literally, what a very large part of our brain has evolved to do."

Social software has the potential to truly reform the technology development process. Startups all around us are throwing technology out to the masses and they're using it, challenging us with their unexpected uses. We can either turn our backs on them as we beg

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for venture capital money using our frame of reference or we can be true to them and convince the world that this is a more conscientious and valuable long-term approach, for everyone involved. I vote that we focus on the people and stop asking them to engage in autistic practices. Let's empower them to use their nuanced approaches to social life in a meaningful way.

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