Illusions of Ambiguity: Signaling Presence and Representation of Gender Identities on a User-Generated Programmable Media Website

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Abstract: The Scratch website (http://scratch.mit.edu) is an online community where young people share interactive stories, animations, games, music, and art created with the Scratch programming environment. Using the lens of signaling theory, I challenge illusions of ambiguity that are constructed in the spaces of gender-anonymous public user profiles and online practices that should not necessitate the communication of gender identity. To this end, I explore several questions related to online gender signaling, both generally and in a case study of Scratch, a user-generated programmable media website: (1) How is gender signaled online? (2) How is gender presence and participation signaled on the Scratch website? (3) How does participation on the Scratch website inform gender representation? (4) How might the design or practices of the Scratch website be modified in response to issues of gender presence, participation, and representation?

Introduction

Scratch (http://scratch.mit.edu) is a new programming environment that makes it easy to create interactive stories, games, music, and art – and share these creations with an online community (Maloney et al., 2004; Maloney et al., 2008). A main goal of Scratch is to enable young people to engage in construction-oriented, gender-unconstrained acts of personal expression (Kafai, 1998; Peppler & Kafai, 2005; Resnick, 2007). At the end of 2007, two colleagues and I interviewed an active member of the Scratch online community, a twelve-year-old girl from Europe. For an hour, the four of us discussed her experiences with the website, including issues regarding identity and gender. This experience led me to carefully consider the ways in which identity is signaled in online contexts, particularly this case of an online context designed for young people. Here, using the lens of signaling theory, I challenge illusions of ambiguity that are constructed at the boundaries of gender-anonymous public user profiles and online practices that should not necessitate the communication of gender identity. To this end, I explore several questions related to online gender signaling, both generally and in the particular case of Scratch, a user-generated programmable media website. The four questions are: (1) How is gender signaled online? (2) How is gender presence and participation signaled on the Scratch website? (3) How does participation on the Scratch website inform gender representation? (4) How might the design or practices of the Scratch website be modified in response to issues of gender presence, participation, and representation?

How is gender signaled online?

Int:	There are lots of people on the website and lots of people look at your projects. Do you think that they know that you're a girl?
R:	Well, many people, when they write about me or tell someone about me, they often think that I'm a boy. Sometimes I create the effect of a boy. And my name is like that, too! So I don't expect people to think I'm a girl, well, to know I'm a girl. Except somebody I told about or somebody saw it somewhere that I am a girl.

(*Interview with 12-year-old female Scratch community member*)

To start thinking about how gender is signaled online, we must first problematize gender. The practice of equating gender to biological sex, with its quotidian omnipresence communicated through application forms and bathroom doors, does not sufficiently account for difference within genders. Essentializing women as Woman and men as Man does not explain the deeply social nature of gender (de Lauretis, 1987). Butler (1999) called for a view of gender as performance, a shared construct that is simultaneously co-constructed and mutually reinforced. Gender thus becomes as much a liberating force as a disciplining force, in that we are socially incentivized to perform gender as females and males in particular ways (Holland and Skinner, 1987).

When we exchange the physical body for the virtual body in online spaces, we theoretically dispense with disciplining markers, including gender, race, and ability (Boler, 2007; Donath, 1999; Donath, 2007a). In practice, however, these "machines that offer identity prostheses to redress the burdens of physical 'handicaps' such as age, gender, and race produce cybertypes that look remarkably like racial and gender stereotypes" (Nakamura, 2002, p. 5). The resulting virtual bodies become hegemonic forms or near-xenophobic "self-seeking itself" constructions (Boler, 2007, p.147). We come to online spaces not as blank slates, but with memories of ourselves and imaginings of others. Anderson (1983) described how sense of nation is supported through this capacity to imagine the unknown other; Simmel (1908) articulated a similar sense, one not contributing expressly to nationalism, but rather a sense of connection to others that forms the foundations of belonging to a society. Similarly, it is these memories and imaginings that enable us to feel as though we belong to a larger group or community online.

While we rely on these memories and prototypes or social types to make sense of virtual identities in online settings, we continually adjust our assessments via interpretation of signals (Donath, 2007b; Donath, 2007c; Dyer, 1993; Ellison, Heino, & Gibbs, 2006; Jacobson, 1999). Herring and Martinson (2004), citing Donath, described how several aspects of online communication involve conventional signals (signals that have socially negotiated, rather than inherent, meaning), such as a user's identification name. They argued, however, that not all online signals of gender are conventional, in that some signals are costly or difficult to produce, particularly discursive patterns. Being deceptive or ambiguous in online gender signaling can be simultaneously safe and repressive.

Undetected (or invited) deception can be experienced as safe or empowering, as it allows individuals to experiment outside of disciplining gender roles (e.g. males being feminine and vice versa) (Berman & Bruckman, 2001; Bruckman, 1993). Yet it can be repressive, if receivers make incorrect assumptions based on prototypes or ultimately reinforce negative prototypes (Herring, 2004; Nakamura, 2002).

How is gender presence signaled on the Scratch website?

Int:	How do you know if [people on Scratch] are boys or girls? Or do you know?
R:	Well, yes, I know. We told each other and we guessed too.
Int:	Why do you think it's important to know if someone's a girl or boy?
R:	Well, I don't really know why it's important. But, you kind of get to know a person more closely when you know about it.
(*Interview with 12-year-old female Scratch community member*)	

The Scratch website is a YouTube-inspired environment, in which members are invited to share their Scratch creations, comment on (and tag, love, favorite) others' projects, establish friendships, join galleries, and participate in discussion forums. Each member has a profile page which (at a minimum) displays their username, projects, favorites, friends, and galleries. While the site is intended to be gender-neutral or at least gender-ambiguous (in that gender is not listed with the username and avatar), users can appropriate all of the available mechanisms to transmit and/or receive gender signals, thus mitigating (if not eliminating) ambiguity.

While much of the gender signaling is inferred, there are instances of gender being explicitly communicated. There are approximately five times as many instances of female participants explicitly asserting their gender identity (through statements like "I'm a girl") than male participants (considering different participation rates). Some of these statements emerge unsolicited and are used to communicate differences from gender prototypes (e.g. "I am a girl who loves WorldWar2 games, family guy, video games, and SCRATCH!", "I'm a girl that likes video games....weird.", and "I was actually gonna cry!!! (by the way I AM a boy)"). Some of these statements are provoked by assertions made by other participants, and are used to correct particular, inaccurate identity constructions (e.g. "btw, I'm a girl, I'm not a boy." and "1. SoundSnap isn't quitting. 2. SoundSnap is a girl."), as well as broader misconceptions regarding the gender composition of the community (e.g. "Let's work on fixing gender specific details of your post first.").

While these explicit assertions of gender are present, they account for a minimal proportion of site communication. But why are these corrections present at all? Or, rather, how does an imagined community of males dominate? Gender can be interpreted from any public component of a user's participation on the site. Some gender identities may be unambiguously inferred from usernames (e.g. "Babygirl" and "warguy") (Fig. 1).

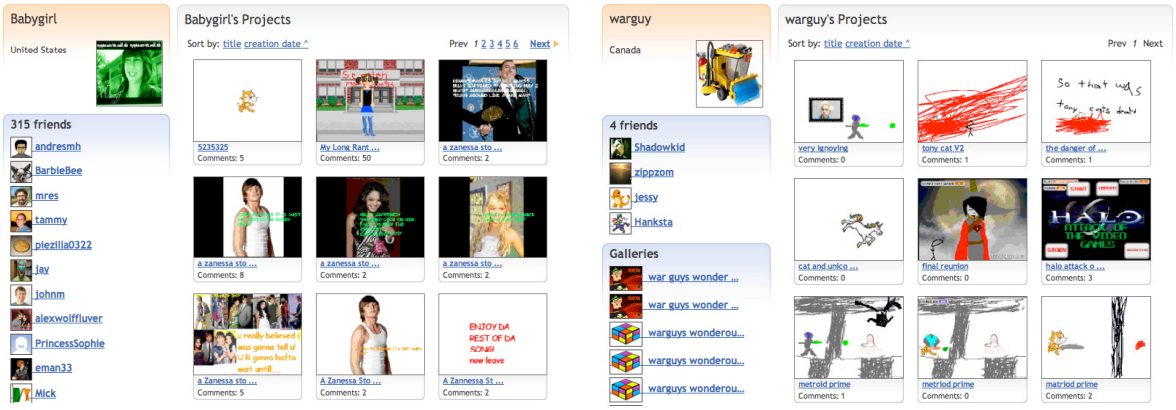

Figure 1: Unambiguous username profiles.

Other usernames are more nuanced, and gender identity signals are transmitted and received through other channels, including avatars and projects. Much like the discursive markers described by Herring and Martinson (2004), profiles signal gender (e.g. "kris0707", a female, and "prettykitty", a male) (Fig. 2).

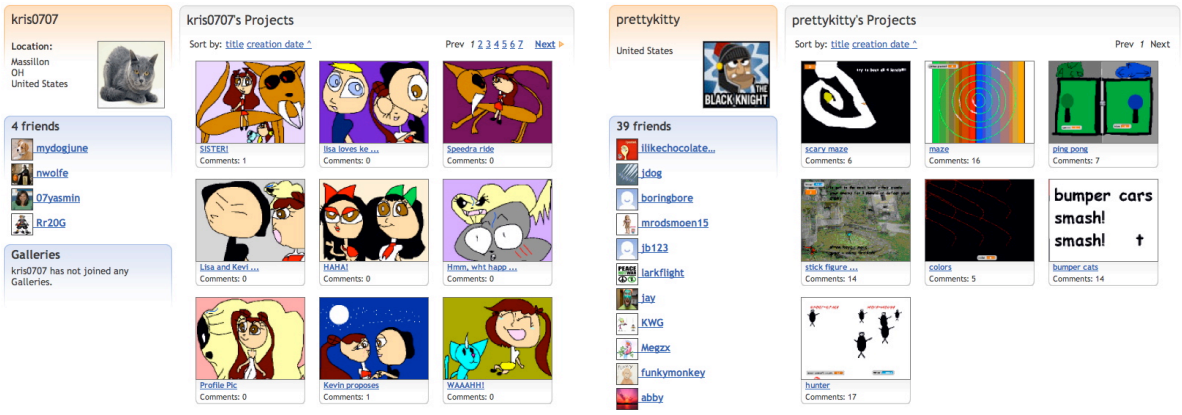

Figure 2: Ambiguous username profiles.

Friends, galleries, and favorites also provide evidence that gender is somehow signaled. Based on an analysis of female and male selections, I found that both males and females associated with members of their own gender in greater proportion than predicted by site representation levels. Both genders viewed, commented, loved, favorited, and downloaded projects by users of the same gender more often than they would have in a truly genderless system. Gender representation in project galleries also suggested that males and females were able to detect each other, as they tended to cluster together.

How does online Scratch participation inform gender representation?

Int:	Do you know what you want to do later for your job when you grow older?
R:	Well, I don't know. I wanted to program, but I heard that it's not very...it's not good for my health. It's more, like, for men. You know? It's a man's job.

(*Interview with 12-year-old female Scratch community member*)

As discussed earlier, many online signals of gender are conventional. The operative word here is conventional, and we need to problematize how conventions are established. Conventions are not predetermined and are produced and reproduced through participation. Using text and images, members of the Scratch online community un/knowingly establish and reinforce norms of behavior and representation. Some of the messages about female and male conventions are explicitly articulated in text by users (e.g. "Girls only games! That means NO bloody & mean boy stuff!" and "oNLY BOYS HERE NO GIRLS HERE! tHIS IS ABOUT POKEMON"). In an effort to create protected spaces of interest, representations of gender identity are narrowed; it becomes difficult to imagine one's self outside the representations if the conventions remain unchallenged.

Image-based expressions also signal information about gender conventions; thus, projects can contain gendered information about behavior and preferences. As described by Herring (2003), we find examples of males depicted as crass and females as disapproving (Fig. 3).

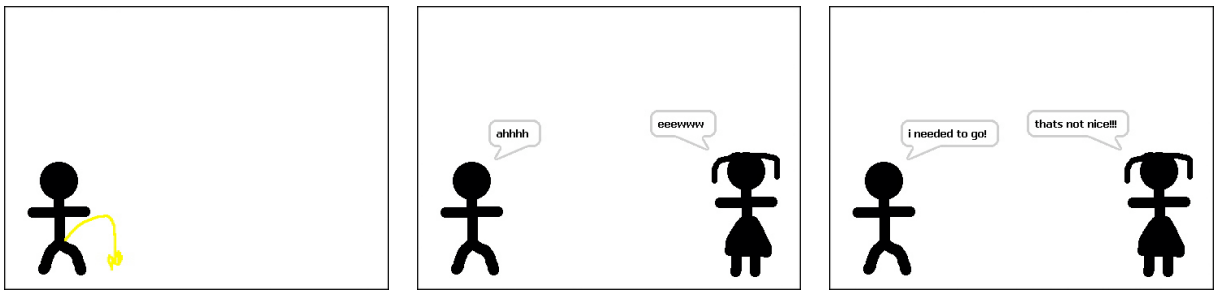

Figure 3: Weeing stickman project.

We also find games for girls by girls that reinforce preferences for feminized activities. For example, "Girl RPG" has the main character visit a hospital to help a nurse and go shopping, both representative of female stereotypes (Fig. 4).

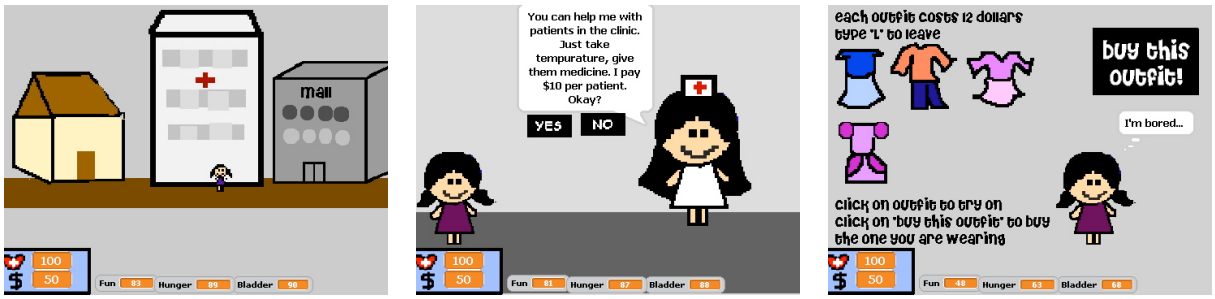

Figure 4: Girl RPG project.

A particularly popular project type that has emerged on the site is the dress-up project, in which a partially-dressed character is surrounded by articles of clothing. By clicking on the different pieces of clothing, the character then becomes dressed. The female body is passive here, without agency, but demonstrably willing, complete with a bright smile. There have been questions and challenges from members on the site, as well as discussions within our research group, about the appropriateness of some of these projects (Fig. 5).

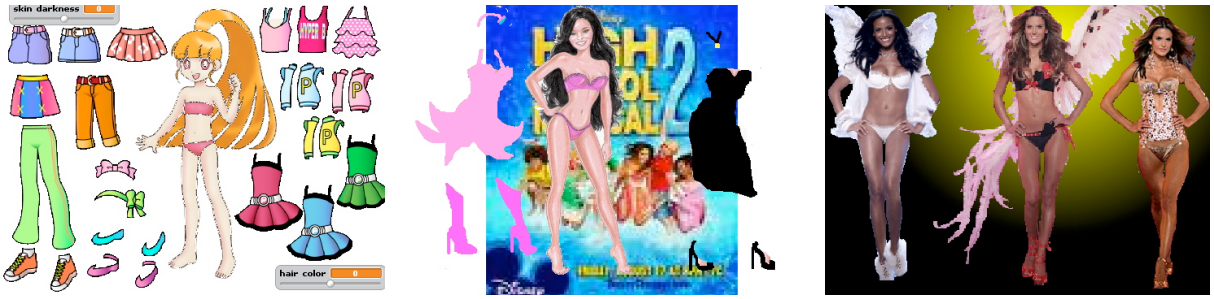

Figure 5: A selection of dress-up projects.

Deciding whether or not a particular female representation is inappropriately sexual or provocative is subjective. As Herring (2003) noted, female virtual bodies occupy a problematic in-between space, as they are implicitly connected to the expansive collection of exploitative images of women in pornography, but females should obviously not restrict their participation because of those representations. There is a fine line between empowerment and exploitation in these representations; how to encourage expression without enabling repressive cultural reproduction remains an open question.

What should be changed in the design or practices?

Int:	Can you guess what is the percentage of girls and boys on the website? If you could guess, just give a number? Can you guess the percentage of girls and percentage of boys?
R:	I don't know, but I think there are more boys. There are more boys in the whole world, so there might be more boys on the Scratch website than girls.

(*Interview with 12-year-old female Scratch community member*)

As I have described, the Scratch website is not a gender-neutral environment. While the design of the site was intended to be gender-neutral, the hidden curriculum of gender, as communicated through the website, informs potential changes in design and practices. First, when a new user joins the Scratch community, the user is prompted for information, including a mandatory binary field for gender. At this entry-point to participation, the user implicitly learns how one facet of their identity is imagined by the administrators. The decision for this binary representation emerged from earlier research needs (and the resulting stored data was used to inform many of the claims in this work). How would identity be negotiated by participants if the initial form did not include gender, gender was binary but optional, or gender was communicated through an open-ended text field? What if users could dynamically and privately update their gender status the way they can publicly update their avatars?

Second, much of the public (and private) administration of the site is performed by men, both those within our research group and those within the Scratch community who were selected as significant contributors. This has dual implications for representation. Can males sufficiently moderate female representations online? Even if males are able to avoid succumbing to repressive expressions or reproductions of power, women lack agency if deprived the power to control their own representations. How can females imagine themselves in authority roles in virtual spaces? If there are no female examples of active administrators visible to participants, it becomes challenging for all participants to imagine females in those roles.

Third, site administrators and our research group operate based on a censorship model. When problematic material is identified, the material is removed or replaced. We have, as a group, discussed other possibilities for this practice, including negotiation-based approaches. For example, instead of deleting sexist projects, we enter into discussion with users about appropriate representations and encourage them to modify their work. While negotiation or questioning of insidiously sexist or heteronormative representations might encourage new ways of participating, this approach is unsustainable with our current support resources. An approach that would be less time consuming, but in the offensive, rather than defensive, tradition would be to construct explicit project interventions that encourage participants to think beyond rigid gender boundaries. This approach carries with it serious ethical responsibilities, if one adopts the position of actively promoting certain modes of gender participation within and beyond the Scratch community.

The Scratch online community is continuing to grow rapidly, with new members from a variety of backgrounds coming together to share their interactive programs and learn from one another. Signaling theory is one way in which we can frame how understandings of identity, and in particular gender, are re/produced on the website, and how those understandings impact participation and representation. While we may desire to change female and male participation and representation, we should not have any illusions that our attempts to create gender ambiguity are succeeding; rather, we need to be conscientious and proactive regarding the signals that are circulated.

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