Synthetic Play: Girls and Boys Gaming Together and Apart in Teen Virtual Worlds

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Castronova introduced the term synthetic worlds to describe "an expansive, world-like, large group environment made by humans, for humans, which is maintained, recorded, and rendered by a computer" (p.11, 2005). Like other researchers, he argued that we should not consider online gaming apart from the offline world. According to him, the boundaries between the online and offline worlds had become porous. So porous, in fact, that items which previously existed only in the virtual realm now have value in terms of real dollars, that time spent begins to rival time lived offline in both importance and duration, and that in cyberspace we can be here and there at the same time. Up to now, the majority of descriptions of these synthetic worlds have concentrated on adult experiences (see chapters by Lin, Taylor and Yee, this volume); little attention has been paid to online worlds visited by younger players and the particulars of their gaming interactions.

One such synthetic world is Whyville.net, an online multi-player site visited by teens ages 8–16 (see also Kafai & Giang, forthcoming). At the time of this study, it counted over 1.2 million registered users logging over 50 million page views to explore topics in science, economics, and citizenship. Citizens known as Whyvillians become part of Whyville's community by creating their own avatar-based personas composed of different face parts. Through participation in science activities, Whyvillians can earn at every login a regular salary paid for in 'clams', the virtual currency. In addition, Whyvillians can design, sell and trade face parts for their avatars and projectiles for play activities. On a typical day, players log into Whyville and check their y-mail account (the name of the email system used in Whyville) for new messages and their clam salary ledger for current account status. Whyvillians then head out to popular places such as the beach, or one of the planetary colonies to chat with others. They also meet to play checker games or complete more science activities to increase their salary. Frequently, you will find them at the virtual mall called Akbar's browsing through the latest offerings of face parts for eyes, hair, lips, clothes or other accessories before deciding on a purchase (see Figure 1).

Figure 1: Whyville Activities

One of the reasons why Whyville is of interest to research is the large percentage of female visitors to the site: currently over 68% of registered players are girls (Aschbacher, 2003). Whyville bills itself as an online informal science site and this in itself makes the presence of girls, who are known to lose interest in science in their teens (Jones, Howe, & Rua, 2000), even more surprising. While girls and boys in equally large numbers visit the Internet, they do not tend to be interested in the same activities, and differences continue to persist in video game playing (Roberts et al., 2005). Some studies have examined small groups of boys playing videogames documenting their interactions (Schott, 2006) and the relationship between girls and gaming cultures (Schott & Horrell, 2000) but all of these focused on console games at home and not on MMOs where children can interact with large numbers of other participants.

Thus, Whyville is a promising context in which to study gaming and gender. To do so, we created an after after-school club that would allow us to observe girls and boys' online and offline interactions in Whyville (Hine, 2000; Leander and McKim, 2003) as the young players at this club became citizens of

Whyville and engaged in activities of their own choosing. Such naturalistic observations of children's gaming on the computer are quite rare. For the most part, studies about game preferences have been conducted via surveys, participant ethnographies, or performance evaluations in laboratories. In addition, we wanted to be attentive to similarities and differences in boys and girls' gaming on Whyville. Barrie Thorne's work on the structure of social interactions in schoolyards and lunchrooms (1993; 2005) cautioned against the different cultures model in children's play that ignores the many ways boys and girls inhabit and share the same worlds. She suggests that research should start "with a sense of the whole rather than with the assumption of gender as separate and different" (1993, p.108) and focus on context in our analyses to cross the gender divide.

The approach in our research was then to examine girls and boys' gaming in and around Whyville in multiple contexts. Teens' movements on Whyville — where they went and what they did — were our primary context and allowed us to establish differences but also overlaps in boys and girls' gaming patterns (Kafai, 1998). In addition, we included in our observations the offline interactions between boys and girls while on Whyville. Here we focused on both spatial arrangements and conversations between players who would call out to each other, comment on their successes or failures to others, or run over to look at someone else's screen. This aspect of our analysis of after school club interactions comes closest to the observations conducted at the gaming weekend by Taylor or in Taiwan's Internet cafés and dorms by Lin (this volume). A third and more unusual context concerned movements between the off- and online world, that is, when gaming combined the physical space (the classroom in which the club met in the afternoon) with the virtual space in Whyville. It is because of these observations that we called the interactions on Whyville synthetic play – the boundaries between the two play spaces, off- and online, dissolved in children's gaming.

The Whyville Club

The after-school club was set up in an elementary school located in a larger metropolitan area. The school's student body has a very diverse ethnic and economic background and all of students have ample access to computers in school and also at their homes. Ten boys and ten girls ages 10-12 from different classrooms were recruited via flyers, and if interested, had their parents fill out consent forms and their own assent forms. Participation in the Whyville after-school club was voluntary and lasted for an about an hour on four afternoons during a seven week period. Most of the teens came at least two or three times a week but participation varied on any given day. The 10 computers were distributed on different tables, along the wall and in the middle of the room with

one corner having a cluster of three computers. One adult researcher was present at all times during the Whyville hour assisting students with questions or addressing issues about shared access to the computer; no other directions were given to students. Activities were written up in field notes in 15-minute intervals and via two rotating video cameras positioned in different parts of the room. The following analysis was based on gaming activities as described in field notes and enriched with transcriptions of selected video segments.

When the club started, there was general enthusiasm about Whyville among students from the first day on. This was most evident in the afternoons when one of the researchers would come to pick up students at the schoolyard. At first sight, invariably one of the students would shout out "It's Whyville time!" and then rush to the center building to sign out; others followed from different parts of the school yard. Students then would quickly assemble to walk together with the researcher, and many frequently ran ahead to be the first to claim their seat at one of the ten computer stations. This enthusiasm was shared equally among boys and girls and persisted through to the end of the club several weeks later.

Once in the room groups of boys or girls tended to cluster together. Children established their seating arrangements on their own and this pattern persisted throughout the seven weeks of the club. Computers had to be shared occasionally when there were more players than individual workstations. Most boys and girls preferred to work in larger same-sex groups of two or three around one computer than to sit with someone of the opposite sex. But despite these spatial clusters there were also many occasions when interactions crossed over between boys and girls. Shouted requests for help were answered by whoever knew the answer and occasionally all students rushed and huddled around the player's computer to see something unusual for themselves. The first sessions were used by most teens to familiarize themselves with different locations and activities of Whyville, passing their chat license, and working on science activities to increase their salaries. In subsequent weeks, we observed differences but also similarities in their gaming with avatars, online friends, and projectiles on Whyville. In these contexts, we also noted the appearance of cross-collaborative play between boys and girls.

Gaming with Avatars. Most popular in the after-school club were all activities around avatars, the online representations of players. Avatars in Whyville are highly customizable with different face parts that can be easily rearranged in a process that is called 'picking your nose' (see Figure 2).
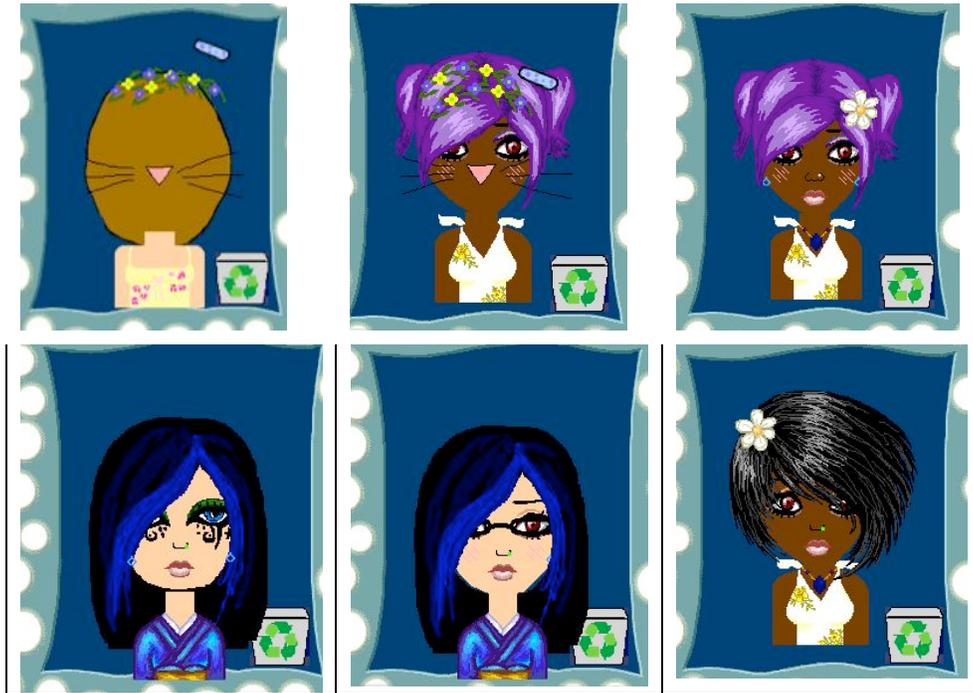
Figure 2: Picking your Nose in Whyville — a sequence of face changes.

These face parts have been designed by other Whyvillians and can be bought at a virtual mall called Akbar's which features thousands of lips, eyes noses, hairpieces, clothes, jewelry and pets among other things for sale (see Figure 3).
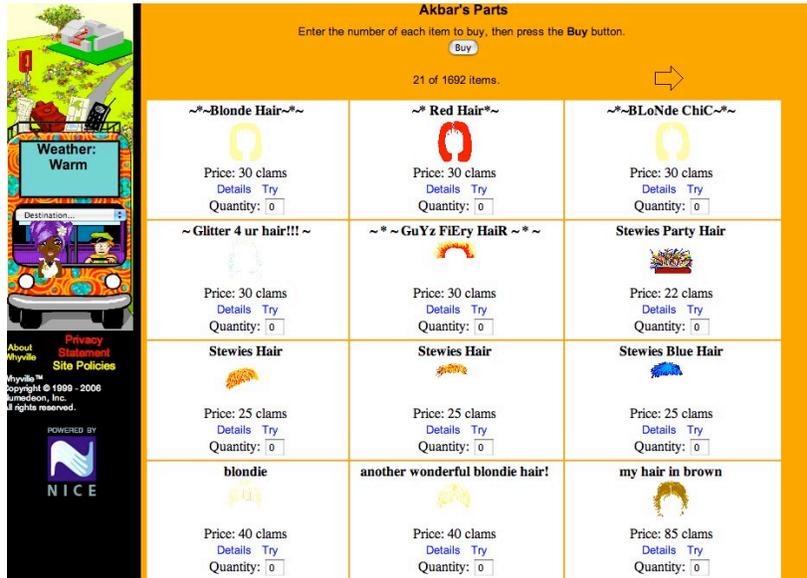
Figure 3: Akbar's face parts for hair.

The appearance of one's avatar is a key aspect in Whyville's community and indicates status and belonging to particular groups. Many players are engaged in styling their avatars by donating parts or clams to each other, trading parts (for other parts or for clams), or helping each other search for parts. Both girls and boys talked about characters being 'hot', 'ugly', or 'cute' when commenting on their online appearance and often collaborated with opposite sex peers when searching new face parts for their avatars. The following excerpts from field notes showcase various aspects of selecting and appraising one's own and avatars looks:

Marissa is at Akbar's and is talking to Briana, who is next to her. She puts on one body part, but says, "that does not look good on me." Briana says that it's a cartoon character.

Marissa called to Molly, "Do you want to see me with earrings?" She gestured toward her own ears and smiled. Molly came around the desk to look at Marissa's screen, and then said, 'They look so pretty!' Marissa smiled and said, "Thank you," and the two girls continued to look at the screen.

Ulani and Danielle went over to Molly at her computer to look at what she was buying at Akbar's. They leaned over to look at her screen, and Danielle said, "Yeah, you should buy that." They

waited for a moment longer, and then went back to Ulani's computer.

These types of appraisals were not limited to girls. The boys equally engaged in avatar evaluations but then their tone had often more of a taunting than supportive note:

Paul, Emmet, and Blake found Alex online, and Paul called, "He's ugly. Alex, you're ugly!" His tone was light and cheerful. One boy called back, "Look who's talking, Paul!"

But there are also multiple occasions when girls and boys can be found examining and comparing together their avatars' looks. In the following excerpt, Jill is appraising the 'bling' (the name of the accessory) necklace that Cole is buying for his girlfriend. She is also offering her accessories for free but declines when Cole wants to have all of them, even if they're 'girlie', for his girl friend. She then moves on to discuss with Cole his avatar's looks and accessories including the lip piercing.

Jill:	Let's try'em on. Okay. *((you can hear steady clicking of Jill's mouse))* No, no those aren't good lips. I think the last lips were pretty nice.
Cole:	My necklace. *((whiny))* A necklace.
Jill:	Y'know I tried putting on my nose an it wouldn't go on.
Cole:	Yeah? Well I got a bling necklace.
Jill:	I'm gonna give you all my accessories since I have 290 of them, no, 264.
Cole:	Give me all your accessories. I don't care if they're girlie, I'll give them to my girlfriend.
Jill:	No I'm not giving them any accessories I'm getting myself some accessories
Cole:	Oh yeah you like that bling necklace? *((pointing to the necklace on his avatar))*
	((Jill scoots closer to Cole's computer))

Jill:	Yeah, I don't. I'm not going for the shirt *((pointing to avatar's shirt))* And – What's that? *((pointing to Cole's avatar's chin))*
Cole:	It's a lip piercing.
Jill:	Oh.

While teens examine each other's avatar looks, there is also evidence of gender play to use of Barrie Thorne's term. As in Cole's statement above, accessories can be classified as 'girlie' and thus are considered appropriate for a female gender such as his girl friend. Both boys and girls are aware of those classifications as the next excerpts illustrate in which Cole gives Aidan's avatar masher47 'girlie eyes' with Isabel watching on and giggling. Preceded by taunts, a small tussle breaks out between them when Aidan realizes who has given him the eyes (see figure 4):

Cole:	Hold on. Cootie eyes give to masher47.
Isabel:	Who's that?
Cole:	Aidan
Isabel:	*((laughing))*
Cole:	Aidan I just gave you face parts. *((loudly))* Check em.
Isabel:	hu hu. hh hh. *((giggling))*
Cole:	This is gonna be funny. Gonna be real funny.
Aidan:	You gave me **girl** eyes. *((from across the room))*
Cole:	You're welcome! *((sticks his arm out in a thumbs up))*
	((Aidan comes walking over))
Cole:	Touch me and I'll kill you.
Aidan:	I'm touching, I'm touching. *((laughing as he grabs Cole's head with one hand – a playful move))*
Aidan:	Watcha gonna do. *((laughing))*
	((Aidan grabs his head, Cole puts his arms around him, and they wrestle gently to the ground))

Figure 4: Tussle at computer

Gaming with Online Players. Club members not only played with club members but also searched out online Whyville players through inviting them to be their friends or girlfriends, checking their online records, and mailing messages.

> Blake went to Aidan's computer, where Aidan was talking to a girl on Mars. Blake and Paolo call Cole over to their computer, and Cole pointed to the screen. He said to type 'if you're hot press…' and listed some numbers. He then told Paolo and Blake, "now ask if they want to be your girlfriend."

> Molly was sending an ymail to someone who had said hi to her, and it read, "Hey, I saw you at the beach. Your friend, bluswirls93." She sent it and then looked at her inbox and said, "Oh my God! I actually got a ymail from ___." (an online Whyvillian)

> Marissa called to Molly asking her to tell her Whyville friends to ymail Marissa. Molly asked why, and Marissa said that she would do the same for Molly with her friends, so Molly said okay.

Boys talked a lot about girlfriends, how to get and what to give to girlfriends. When boys went to Akbar's, it was often to buy accessories as gifts for their girlfriends. When boys approached other girls on Whyville with "if you're hot, type 123", they adopted a mode of contact often observed in chat rooms. It appears that having girlfriends was a sign of status for boys in Whyville. Girls, on the other hand, almost never talked about boyfriends. For most girls, ymailing was the preferred mode of contact and having a large number of names of other Whyville members in their address book was a sign of status. At times this resulted in orchestrated pyramid scheme-like mass mailing to fill their mail inboxes (See Marissa's request to tell Molly's friends to ymail her). Here again, we see similarity in interest getting to know others but differences in the way relationships are conceptualized, 'as girlfriends', or address listings.

Gaming with Projectiles. While all teens were concerned with picking their noses, exchanging face parts and evaluating the looks of their friends and others, the boys discovered quickly a shop where they could purchase projectiles to be thrown at other players. By all appearances, projectile throwing was one of the Whyville activities, which resembled tag games popular among boys. Thrown projectiles will stick for some time to the targeted player before disappearing (see Figure 5).
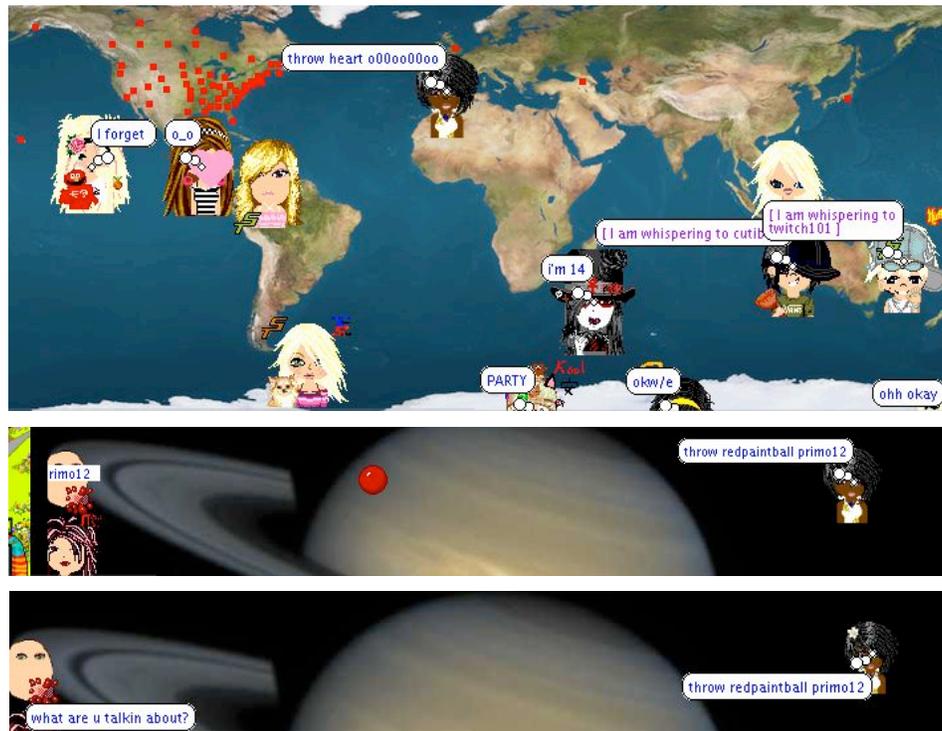

Figure 5: Examples of Projectile throwing.

Every afternoon, boys in the club gathered online and offline to throw projectiles at each other as the following excerpt illustrates:

Blake runs over and stands behind Cole, and then runs back to Trevor, calling "Trevor, Gabe's right there!" Blake types on Trevor's keyboard "throw pie Wow4" but then says, "Thanks a lot. You wasted your own pie." He tells Trevor to get good aim, and their pie lands on Gabe's avatar. Blake calls out, "Yeah! We got you, Gabe!" Gabe calls back, "I'm taking you down!" Trevor clicks on the satchel and leaves the beach, and Blake tells him, "You're so scared!" Trevor goes back to the beach and begins typing, but Blake interrupts, "You have to put a capital M in mudball!" He pushes Trevor's hands aside and types the throw command again, telling Trevor, "don't go to a different destination, just run away here." When Gabe does not respond to the projectile, Blake goes out of the inner room to call, "Gabe, don't you care? He's getting you." Blake looks at Trevor's screen and sees that he has teleported to the moon. Blake calls to Gabe, "He's on the moon."

In the following excerpt, Blake and Sergio chase another online player in Whyville. Blake identifies him by typing as he speaks and announces that he has thrown and landed a pie. Landing a projectile actually required some skill as most Whyvillians move around on the screen. He then types 'high five' by sending an ymail to Aidan who a few turns later will reciprocate in person the high five to Blake.

Blake:	Throw pie. *((typing as he speaks))* This is the only time I get to say gay. Gay1989 19-89.*((typing as he speaks).* He was born in 1989. Let's go. Yeah! I threw pie! Oh yeah. *((does a funny victory dance stomping his feet))*
Sergio:	Throw another one after he gets out of it.
Blake:	**high- five-** *((typing as he writes))* Guess what I said to you! *((he must have sent a ymail to Aidan))*
Sergio:	That's him? *((pointing to screen))*
Blake:	Yeah that's Aidan.
Sergio:	Man he look ugly.
Aidan:	Mikey c'mere. **I'll give you a high five**. *((Blake runs off))*
Blake:	Okay.

A particular dynamic appeared when heart-shaped projectiles were selected for tagging among boys. With all the talk about having girlfriends, throwing a heart projectile to another boy could be considered expression of interest in a romantic relationship.

> Big screams erupt from boys' group around Blake and Brailon. Bryce is collapsing on the floor and laughing. Ulani comes from the girls' group and asked, "What happened?" leaning over Blake. "He threw a heart projectile at me," Brailon said. Blake said, "He was asking for it, he was asking for it!"

While predominantly a boys' activity in the beginning, later on girls also started throwing projectiles at each other and then joined boys in throwing projectiles at each other and others online. In this event, Paul throws a projectile at Molly who responds by teasing him "I don't like you" while smiling. The projectile throwing, whether in pie or heart form, was most likely the closest to touching another player on the screen.

	((Paul runs over to Molly's computer and types his username))
Molly:	I can throw pie good cause I'm a pharaoh?
	((reading Paul's City Records entry and turning to look over at him with a smile on her face))
Paul:	Yes I am, I'll change my look.
	((Marissa comes over to Molly's computer and reads the same thing))
Molly:	I need to go to Mars. I'm gonna go to Mars 'cause I want to. Oh there's Mars. I think it's the desert, looks a lot like the desert.
Paul:	Oh, I see you! (*(then throws a projectile at her))*
Molly:	I don't like you Paul! *((smiling))*
	((Paul laughs))

DISCUSSION

These observations provide a first, more detailed account of teens' online and offline gaming in a MMO. The after-school club setting provided us with a unique opportunity to view interactions between the smaller offline group and the larger

online community. Although we did not realize this in advance, in physically co-locating a small group of children while they played in Whyville over several weeks, we actually created a new kind of hybrid virtual-physical experience with social properties different than solely physical or solely virtual play.

The synthesis between and offline play observed on multiple occasions confirms that for teens today the boundaries between the two worlds are no longer distinct whether they issue a high five via email or in person and whether they tussle via projectiles or in person. There is real and simulated physicality in gaming as evidenced by the online projectile throwing and the rough and tumble play offline between the boys. The boys' virtual and physical 'high-fiving' is another example. When Henry Jenkins (1998) suggested video games as the new outdoor spaces for boys' play, he extended the offline into the online space. In synthetic play, the online world of the screen now extends into the offline play space of the room and the boundaries between the two dissolve.

This quality of gaming is not new and has been observed before in children's make believe play (Singer & Singer, 1990). Unlike the toys and dolls of a previous generation that served as foils (see also Brunner, this volume), today's teens play with their own avatar representations and those of others. Sherry Turkle's (1984) proposal to see computers as second selves gains renewed confirmation. The interaction with one's second self is perhaps most clearly expressed in the constant examinations, comparisons and modifications of one avatar's look. When Jill views Cole's online lip piercing, her reaction expresses surprise: Cole's offline appearance does not have a lip piecing. These assessments of one's own appearance and appraisals offered by others are not ambiguous in this way when they occur on the playground, when the referent is clearly to the person in sight. Appraisals are also not ambiguous when they occur online in Whyville without a shared physical location such as the after-school club. By inviting children to visit an online world from a co-located physical space, boundaries and referents blur.

It also becomes clear that the synthetic nature of this gaming facilitated teen's crossing of gender boundaries. On multiple occasions, when Cole gives Aidan girlie eyes, when Paul tags Molly with projectiles, or when Bryce throws a heart projectile at Brady, the boundaries of gendered face parts or activities are explored in a playful fashion. The appearances in the online world do not escape gendered attributions when face-part eyes with long lashes are considered 'girlie' as they are in the offline world. Relationships are tested when projectiles, a play activity used predominantly between boys, are thrown in form of hearts and thus cross over into a possible romantic realm. The nervous laughing and giggling that accompanies these transgressions are some indicators that boundaries have been crossed.

Expanding Game Worlds

Our observations of teens' interactions in a multi-player world took place in an unusual context, that of an after-school club. Unlike the Internet cafes in Taiwan described by Lin or the game meetings in Denmark described by Taylor (this volume), public gaming is not commonplace in the United States where access to computers and the Internet is mostly at home. We can only speculate what our observations would have been for Whyville players at home alone in front of a computer cruising through Whyville, checking their ymail, chatting and whispering to others, and visiting friends in online game rooms and homes. We know from club members that they often made arrangements to meet with others later that day while at home, a necessity for teens who geographically are widely distributed across town. The exceptions may be public libraries and after-school organizations that provide access to computers in low-income communities. Children and teens are able to visit these places on their own and select activities of their liking. Here conceivably we would be able to find some of the same interaction modalities observed in our after-school club.

What we observed leads us to consider the importance of such collective experiences for play and development, not just for crossing the boundaries between the virtual and physical world but also between genders. Game playing has always been about community: sharing insights, providing assistance, and celebrating accomplishments. The findings suggest that taking game playing public facilitates sharing of game experiences between boys and girls, sometimes unintentional when one overhears and sees what others are doing and sometimes intentional when one plays with others. Play interactions revealed considerable common ground while their purposes might be construed differently — buying necklaces for your own avatar or for a girlfriend — their results still deal with issues of appearance and representation. Our hope then could be that gaming experiences could not only create a synthesis between the online and offline world but also bridge the gap between girls and boys who are often seen at playing apart and not together in the gaming world.

Acknowledgments

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