Kids online

A new research agenda for understanding social networking forums

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table of contents

advancing children's learning in a digital age

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executive summary

A growing number of kids at increasingly younger ages are engaging in online social networking today—a development that is leading to a surge of news stories, media attention, and economic investment. These shifts in usage and public discussion demand a better understanding of the ways that social networking sites mediate kids' socializing and the opportunities and limits they place on kids' participation.

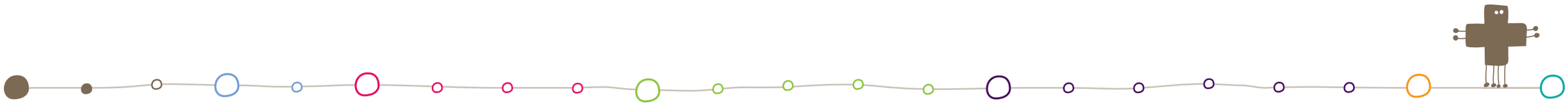
This paper is a first step in that direction.

Here we attempt to establish what we already know about kids' social networking activities and identify key gaps in our collective knowledge of these as-yet-emerging practices. This paper also addresses the underlying question of how kids' social networking is defined and delineated: What is it we are referring to when we talk about kids and online social networking? What technologies, activities, and platforms are involved? Who is included in this discussion, and who and what are being left out?

We are also concerned with online sites and other forums directed toward or highly populated by kids aged 5-18 that have an underlying "social-ness" to them—sites that, by design, promote kids' socializing and networking as a primary (if not sole) activity. These sites include more traditionally thought of "social network sites" (SNS) like Facebook and MySpace, but also encompass virtual worlds, networked games, and project-sharing sites. Throughout this paper, we introduce the term **social networking forums** (or SNF) to refer to this broad, more inclusive range of online social activities, practices, and platforms. Because most research on online social networking focuses only on the traditional social network sites, little is known about what social networking practices look like in these other types of forums, some of which are specifically directed toward children.

To remedy this substantive gap in research, we point to the need to document and understand social networking across many different types of forums (platforms, technologies, and genres) and to research kids' participation *in and across* these forums. To support this end, we suggest a new classification system for examining SNF and their features related to the ***forms of communication*** they enable, the ***personal profiles*** they allow users to create, the ***networking residues*** they encourage, and the ***hierarchies of Access*** they afford. This classification system also serves as a way to broaden the scope and definition of what we talk about when we talk about social networking and kids.

Over the past several years, overall participation in online social networking has steadily increased across the world. Studies document a consistent and significant increase in online social network usage among teens and young adults. Though less thoroughly documented, a similar upward trend is becoming apparent among kids between the ages of 9 and 12. Regarding the SNF practices of younger children, especially those 8 years old and younger, we have little to no research evidence despite the rise in online forums directed specifically toward this age group.



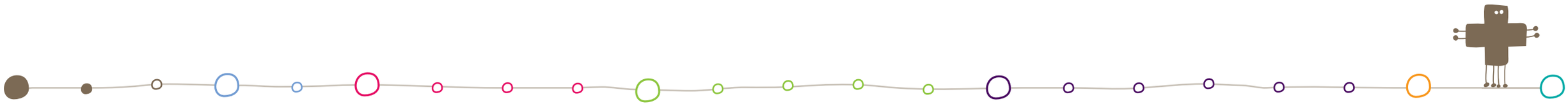
This gap in our knowledge is problematic because we cannot assume that children use SNF in the same way as teens or young adults. Children are at a much different stage of development cognitively and socially than their older counterparts and often have different influences at home and school that may affect their participation in SNF. Given that research on the social networking practices of younger children (especially those under the age of 9) tends to be fragmented and incomplete, we aim to redress these omissions by documenting and highlighting the sites and activities that children and tweens (i.e. those between the ages of 5 and 13 years) are actively engaged in to date.

As part of this attempt, we feature several case studies regarding SNF primarily populated with children and include several different kinds of forums throughout the paper. These begin to demonstrate the range of types of participation within these different kinds of forums. Each case describes a very different type of SNF, with the focus placed on a different facet of children's online social networking in keeping with the issues and research addressed in that particular section of the paper.

The omission of younger kids from so many of the large-scale reports reviewed in this paper points to an urgent need for research that specifically investigates the online social networking practices of kids under the age of 12, and especially under the age of 9. As such, we call for research on children, specifically in regard to their particular developmental needs and social contexts, as well as their own preferences and practices. We ask: what are children doing in social networking forums, how does that relate to their developmental trajectories, and what does that mean for their social and cognitive development as well as their developing literacies in digital participation and production?

Research on Internet use in the home has consistently demonstrated that family dynamics play a crucial role in children's and parents' activities and experiences online. We need further research on the role of parental limits, rules, and restrictions on children's social networking as well as how families, siblings, peers, and schools influence children's online social networking.

Finally, we also call for more research into the practices of the adults who design, manage and regulate children's social networking, including discussion of how developers are negotiating child-specific legal policies (e.g. COPPA), marketing tactics, and age-related content or restrictions on activities (e.g. chat filters). This also reflects a need to understand how children themselves navigate these legal policies, manage their information and privacy online, push back against site designs, produce content, and influence site development.

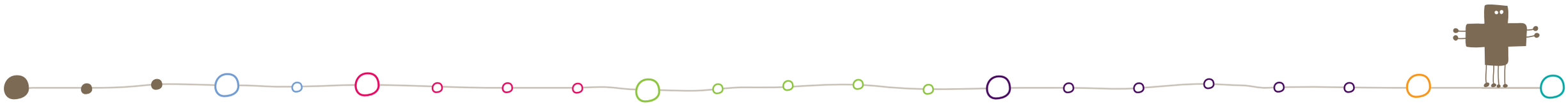


introduction

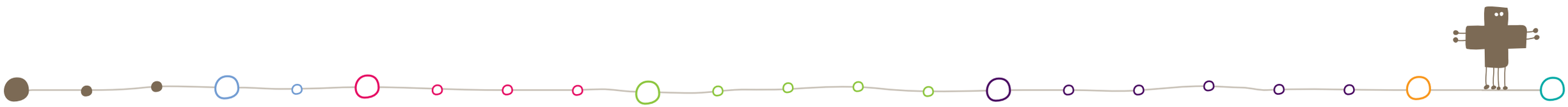
A growing number of kids[1] are using online "social networking sites" (SNS), or as we will argue more broadly, "social networking forums" (SNF), at increasingly younger ages, which is leading to a surge of news stories, media attention, and economic investment. In tandem with these developments, there is a need to develop a better understanding of the ways that these digital technologies mediate kids' socializing as well as the relative opportunities and limitations for their participation in them. This white paper is a first step in that direction. It attempts to establish what we already know about kids' social networking activities and identify key gaps in our knowledge. The paper also addresses the underlying question of how kids' social networking is defined and delineated: What is it that we are referring to when we talk about kids and online social networking? What technologies, activities and platforms are involved? Who is included in this discussion, and who and what are being left out?

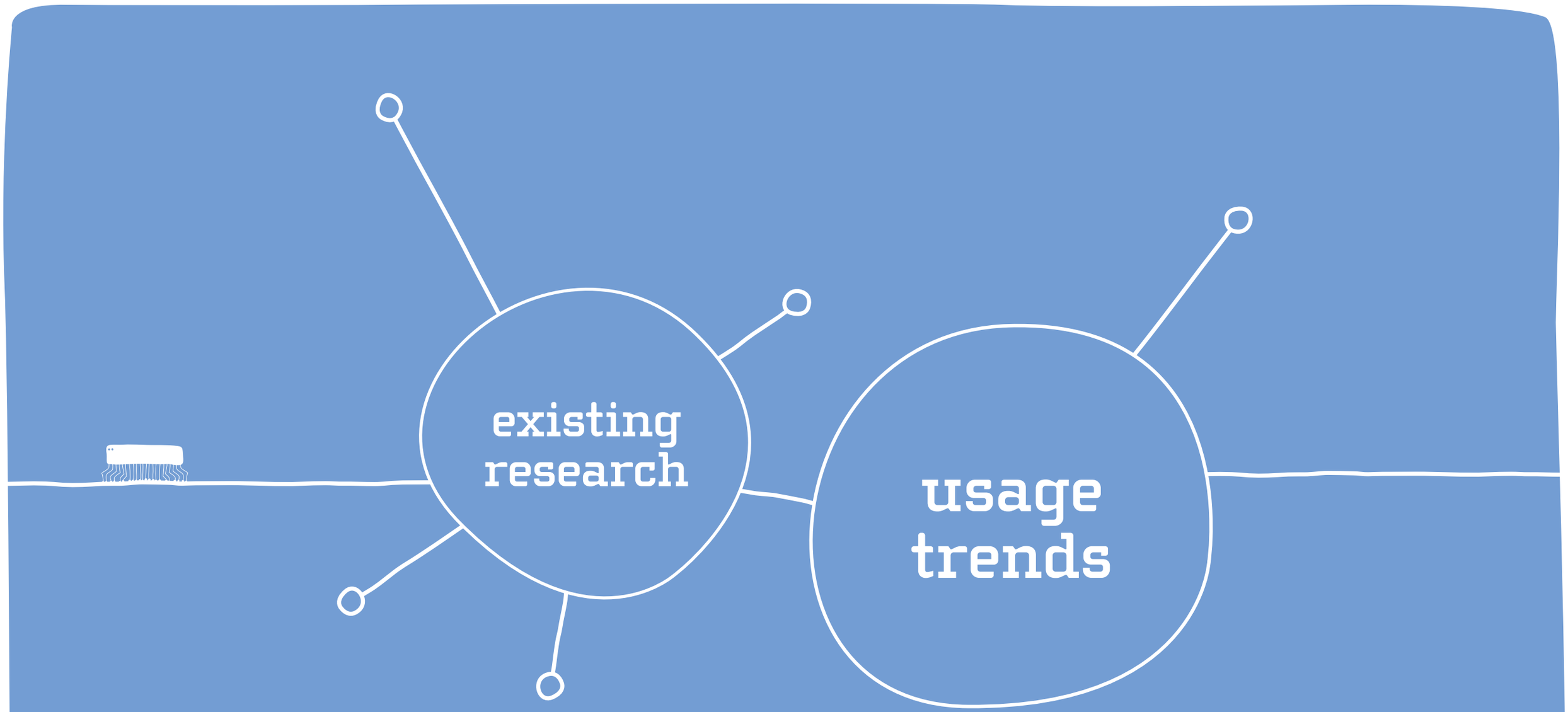
We are concerned with online sites and other forums that have an underlying "social-ness" to them—in other words, sites that promote kids' socializing and networking as a primary (if not sole) activity by design, and are either directed toward or highly populated by kids aged 5-18. We draw on boyd and Ellison's (2007) definition of "social network sites," but we also expand upon it, because social network sites have both changed and developed in the years since their definition. Today, there are both more and different kinds of social network sites, and we need a broader definition to account for them. For instance, virtual worlds for children have grown in number and popularity in recent years and serve as a gathering place for children to meet, socialize, and play. Networked games provide opportunities to socialize online through consoles in addition to the typical home computer. While also focusing on creative design, project-sharing sites for kids also allow kids to share, receive feedback on, and often remix each other's projects. We include these kinds of sites in our discussion to capture the ongoing diversification of online social networking as it spreads across different sites and technologies, and to better represent what social networking looks like when younger children are involved. Throughout this paper, we have therefore opted to use the term "social networking forums" (or SNF) when referring to this broader, more inclusive range of online social activities, practices, and platforms.

In our overview, we also aim to reveal major gaps in the current literature and popular discussion surrounding kids and social networking. Some of the gaps we identify are simply a result of the newness of the topic—many of the software programs involved are very recent innovations and research into their usage is still in the early stages. As we will attempt to demonstrate, however, other gaps reflect more systematic oversights primarily because of a lack of large-scale research into the activities of kids. When it comes to online social activities, young adults are by far the most systematically studied, though teens have been included in recent



large-scale survey research. Younger age groups are understudied and under-reported even though sites targeted to children are blossoming in numbers and gaining recognition by media conglomerates such as Disney and Viacom. Given that research on the social networking practices of younger children (especially those under the age of 9) tends to be fragmented and incomplete, this white paper aims to redress these omissions by documenting and highlighting the sites and activities that children and tweens (i.e. those between the ages of 5 and 13 years) are actively engaged in.





We begin with a cursory mapping of the latest usage rates and trends regarding social networking among kids of different ages and demographic backgrounds. This overview is drawn from a set of recent reports and surveys produced by private research institutions, governmental bodies, non-profit and non-governmental organizations, and academics.

trends and demographics of young participants in social networking sites

Participation in social networking sites has steadily increased over the past several years across the world. Early research into online social networking, including foundational studies by boyd (2004, 2007) and the *Pew Internet and American Life Project* (2007, 2010) established the activity as particularly popular among teens and young adults. To date, this age group has remained one of the most consistently tracked and heavily reported within the literature. This growing body of longitudinal data on teens' online social networking has the benefit of allowing researchers to track changes (in behavior, frequency, platform, etc.) over time. For instance, according to the most recent *Pew Internet and American Life Project* report (Madden & Zickuhr, 2011), 83% of young adults (aged 18 to 29) who use the Internet use SNS. Although this represents a slight decrease from 2010 (86%), usage of SNS among this age group has overall increased steadily and significantly in the past six years, from 9% in 2005, to 67% in 2008 (Madden & Zickuhr, 2011). International studies, such as research conducted by the *EU Kids Online* project, indicates a similar rise in social networking among online teens in various countries around the world.

Among teens (defined in much of the literature as users between the ages of 12 and 17), use of social networking sites is also relatively high. As Lenhart, Purcell, Smith and Zickuhr (2010) described in a recent Pew Internet & American Life report, "73% of wired American teens now use social networking websites" (p.2), representing a marked increase from prior studies which documented SNS usage at 65% of teens in February 2008 and 55% of teens in November 2006. Meanwhile, according to a Benenson Strategy Group study commissioned by Common Sense Media in 2009 which surveyed teens aged 13-18 years and their parents, "Social networking sites have become a major part of teens' daily interactions, with over half of all teens (51%) checking the sites more than once a day and almost a quarter (22%) checking more than 10 times a day" (n.p.). The research indicates that social networking among online teens has risen at a steady pace over the past several years, a trend that has been replicated in various countries around the world. For instance, a cross-national survey of the online practices of children and teens across the European Union found that 77% of internet users aged 13-16 years reported

using a social networking site, with 46% identifying Facebook as the one they used the most (Livingstone, Ólafsson & Staksrud, 2011).

A similar trend is now becoming apparent among tweens as well—a term that is varyingly (and oftentimes problematically) used to describe kids between the ages of 9 and 12. A full 46% of the 12 year-olds surveyed in the 2010 Pew study reported using a social network site (Lenhart et al., 2010). The EU Kids Online project found that more than a third (38%) of children aged 9-12 years from various European countries had their own profile on a social networking site (Livingstone et al., 2011). However, the research suggests that the likelihood of SNS use among today's kids still tends to increase with age. For instance, the EU Kids Online study found that in the UK, SNS use ranged from 20% of 9 year olds to 90% of 16 year olds (Livingstone et al., 2011). Notably, this accords with more generally observed age differences in kids' Internet use. For instance, the most recent Pew study found that younger teens are still slightly less likely to go online than older teens: "Fully 95% of teens ages 14-17 go online compared with 88% of teens ages 12-13" (Lenhart et al., 2010). Evidence of this trend is further extended and supported by the most recent Kaiser Family Foundation report, which reveals that in 2009 the average time spent on social networking among 8-10 year olds was 5 minutes, compared to 29 minutes for 11-14 year olds, and 26 minutes for 15-18 year olds (Rideout, Foehr & Roberts, 2010).

Though less thoroughly documented, a similar upward trend is now becoming apparent among tweens. Surveys conducted by both Pew and the EU Kids Online projects have found that significant percentages of tweens are now using social network sites, although the likelihood of social network site use still tends to increase with age (Lenhart et al., 2010; Livingstone et al., 2011). The key takeaway from our review is that there has been a gradual upward trend in online social networking participation by users aged 12-18 over the past several years. These statistics are powerful in pointing out that SNS are worthy of our attention for the simple reason that more and more kids are spending more of their time on them.

As one might notice from the statistics reported above, there is little data regarding kids under the age of 12, and even less on children under the age of 9. In fact, we had to look to international studies in order to include findings relating to pre-adolescents in our summary of published usage trends. Although information about the social networking activities of teens continues to grow and deepen, younger children have been conspicuously absent from large-scale inquiries into youth social networking practices. It is only recently that questions about children's computer use and online social networking practices have been included in large-scale, quantitative investigations. While studies that *have* surveyed the online activities of younger users now identify social networking among children as young as 8 years, these findings are often partial and do not yet benefit from the type of longitudinal or comparative findings currently available

for older age groups. There is thus very little existing hard data available upon which to substantiate the now common assumption that kids are using SNS at increasingly younger ages, or to begin to evaluate how the behaviors and usage patterns of younger children may have changed over time. For instance, the Kaiser Family Foundation only started studying social networking in 2009, and at the time of this writing has not yet published new data upon which longitudinal comparisons can be made.

Given that much of the research to date has focused on young adults and teens, it is *their* habits and practices that have been the most influential in shaping our existing understanding of what a "social network site" is. A key example of this can be found in the tendency to equate online social networking with traditional sites such as Facebook and MySpace. Other platforms such as games, virtual worlds, and online communities are largely classified separately, even though many of them contain social networking activities. Additionally, there is a current omission in the literature that actively partitions research on gaming/virtual worlds studies (play) and affinity and project spaces research (creativity) from the more traditionally defined social networking literature. For instance, the Kaiser Family Foundation survey (Rideout et al., 2010) distinguishes between social networking, games and video sites such as YouTube. The report thus provides separate statistics and time use frequencies for each of the three categories.

However, this classification fails to account for the strong possibility that a significant proportion of younger children's social networking practices may well occur within games, video sharing sites, and other non-traditional yet highly social online forums. Because of the way in which children's engagements with new media tend to be categorized by *platform* rather than activity or use, little is known about what social networking practices look like in other types of multiuser forums. Additionally, research suggests that these overlooked social networking practices and forums that kids are more likely engaged in often expand across a variety of contexts and platforms. In the following section (Part II) we address these gaps, drawing on literature and research focused on those aspects of children's digital culture that serve as useful entry points into understanding their online social networking. This sets the stage for broadening the study of online social networking from traditional sites like Facebook and MySpace to other social networking forums (SNF) that include virtual worlds, online games, and project sharing sites. A framework for this is outlined in Part III, which provides an alternative definition of online social networking that takes better account of the multiple platforms and diverse practices kids of different ages engage in, including the younger kids so often excluded from the discussion.

key gaps in research

While participation in social networking forums has increased steadily over the past several years, we still know very little regarding who the participants in these spaces are, what those spaces consist of, what kinds of activities kids are engaging in there, and what those activities mean for kids' learning and development.

In this section we seek to illuminate the gaps in the research on who, what, how, and to what end kids are participating in social networking forums. We begin by arguing that age does matter—we cannot simply map findings about young adults and teens' activities in social networking forums onto children. Children have different needs and different constraints.

We also consider current participation divides among kids of different ages, genders, ethnicities, and experiences and what those might say about who is participating in SNF and what they might be gaining from that participation. Next, we point out that online social networking takes place in a wider variety of forums than typically considered. When studying kids' online social networking, we should consider not just traditional social network sites like Facebook and MySpace but also virtual worlds, networked games, and project-sharing sites. Subsequently we briefly consider the range of activities that are relevant to study in SNF and what those activities might mean to kids, from multiple new literacies to identity work, creative practices, and even nonconforming practices that go beyond the intentions of site designers. Finally, given our discussion of the multiple kinds of social networking forums that are relevant to kids, we suggest several ways to move forward in describing the range and types of social networking forums (SNF) that currently exist. This description will also help to outline areas to compare and contrast in future research in order to unpack how different kinds of sites shape and respond to kids' activities within them.

age matters: one size does not fit all

As only a small number of the more recent studies on SNF examine the participation of kids under the age of 13 years, we must be careful not to equate children's participation in online social networking forums with that of teens and young adults. Research into other aspects of kids' digital technologies usage suggests that age definitely matters when it comes to the differentiation of online practices. As Livingstone and Helsper (2007) argue, for instance, both the extent of use and the reasons for low and non-use of the Internet by kids vary significantly *by age*. These findings demand a very different way of thinking about "children's" use of SNF—namely, as a diverse assortment of activities and relationships that defy the kind of broad age groupings commonly found in statistical reports and media coverage.

Consider, for instance, the compelling, emerging evidence that an important shift in usage takes place at around age 8. Although households with children are more likely than any other group to have home Internet access (particularly broadband) (OECD, 2008), a recent report conducted by The Joan Ganz Cooney Center at Sesame Workshop (Gutnick, Robb, Takeuchi & Kotler 2011) demonstrates that children don't begin to "extend their media habits deeper into the digital realm" (p.30) until sometime between the ages of 7 and 9[2]. This shift correlates with the available data on children's Internet use. As Gutnick et al. describe, "In a typical day, about 30% of 3-to-5-year-old children use the Internet, compared with about

50% of 6-to-9-year olds. And the breakdown within this 6-to-9-year-old group confirms the shift in media habits. Fewer than half of 6-year-olds (47%) use the Internet on a typical day, compared with more than two-thirds (67%) of 8-year-olds" (p. 30). Thus, a key question becomes whether and how these broader changes in Internet usage might translate into changes in SNF participation.

Thus, although media coverage about younger children on Facebook and the recent advent of child-specific online social networks such as Scuttlepad and Everloop provide strong support for the idea that younger children are engaging with SNF, the lack of substantive empirical research of their practices, concerns, and motivations precludes us from understanding what they are doing, thinking, and feeling as they engage there. We cannot assume that children use SNF in the same way as teens; we cannot draw definitive parallels between teens' usage and children's usage simply because the latter is of a younger age. Children are at a much different stage of development (cognitively and socially) than their older counterparts and often have different influences at home and school that may affect their participation in SNF.

The magical disappearing, reappearing of kids under 13

While the data on younger children in SNF are still emerging, preliminary analysis suggests a number of critical trends that warrant further examination and discussion. First, evidence indicates that at least some tweens and younger children have been ignoring or bypassing the age restrictions put in place by traditional social networking forums such as Facebook and MySpace, which formally prohibit users under the age of 13[3]. A recent study conducted by Consumer Reports states, "Of the 20 million minors who actively used Facebook in the past year, 7.5 million—or more than one-third—were younger than 13 and not supposed to be able to use the site" ("That Facebook Friend," 2011). During the same time period, Facebook Inc.'s Chief Privacy Advisor, Mozelle Thompson, reported that the site removed an average of 20,000 accounts created by underage users every day (Smith, 2011).

Missing from recent public discourse however is a deeper consideration of why children under the age of 13 years are not allowed on the site in the first place. A key factor is the Children's Online Privacy Protection Act (COPPA), which restricts the type of information websites are allowed to collect directly from users under the age of 13 years (upon registration, for example) and prohibits sites from displaying any personally identifiable information about child users (such as name, email, address, etc.), including data and content posted by the children themselves (such as in a forum or via a chat tool). COPPA represents a particularly powerful factor influencing younger children's access to SNF. Some scholars argue that although COPPA was originally introduced to protect and foster children's participation in online culture, it has also had the unintended consequence of officially closing off vast swaths of the Internet from younger children (Montgomery, 2007; Grimes, 2008). For instance, until quite recently

it had become common for sites containing social networking features to formally prohibit users under the age of 13 years, rather than tackle the challenge of meeting COPPA requirements (Montgomery, 2007). This prohibition trend even extends to sites where age restrictions would not otherwise be necessary; in many online game sites and virtual worlds, children under the age of 13 are banned even though a "T" rating has not been assigned or is otherwise inapplicable. These examples illustrate how the hitherto common practice of banning kids from SNF may have as much to do with policy compliance as with issues of age appropriateness.

Not surprisingly, children have found a myriad of ways around these formal age barriers, becoming active—although not always welcome—participants within multiple SNF that claim to be targeted exclusively to teens and adults. As Jenkins, Purushotma, Weigel, Clinton, and Robison (2009) describe, "many sites depend on self-disclosure to police whether the participants are children or adults. Yet many young people seem willing to lie to access those communities" (p. 25). Indeed, numerous studies of children's online activities have found that children frequently lie about their age in order to join age-restricted sites (Livingstone, 2008a; Shade, Porter & Sanchez, 2005; Steeves, 2006; Turow, 2001), and many children prefer to frequent sites that are designed for adults (Steeves & Webster, 2008).

The fact that younger children *are* using SNF like Facebook has raised concern among the public, parents, and policymakers. While qualitative research suggests that younger kids bring a complex and uneven set of skills, strategies, and literacies to their online social interactions, the shortage of large-scale, comprehensive data on children under the age of 13 means there is a lot we still don't know about *how* they use SNF, under what conditions (e.g. parental monitoring), and for what purposes. Until more research becomes available, there is a serious risk of extrapolating findings and conclusions drawn from previous research on older kids onto younger, still very much understudied demographic groups. We see evidence of this in the paradoxical fact that although younger children are often excluded from actual research studies, they are nevertheless evoked in news coverage of "kids and social networking" trends (see Figure 2 below). This appropriating tactic is also evidenced in policy and design decisions that directly impact children's access and participation rights, as well as in discussions of perceived negative effects or possible benefits of SNF usage.

Participation divides

While we often think of the digital divide as largely resolved, children today still experience important barriers and inequalities in accessing SNF and in partaking in its associated opportunities for cultural participation and learning. Their experiences, however, must be contextualized within a new interpretation of "digital divide" that recognizes that equity moves beyond simple questions of Access or use/non-use of the Internet and/or computers[4] (Hassani, 2006; Dimaggio, Hargittai, Celeste & Shafer, 2004; Warschauer, 2003). In keeping with this broadened view, scholars like Jenkins et al. (2006; 2009) argue that the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News

Like 8 Tweet 7 4 Comments

Infographic: Over one third of kids on Facebook are under 13 years old

by Joe Osborne, Posted Apr 11th 2012 3:30PM

For the 48 percent of parents that think the minimum required age for a Facebook account should be even higher, this is one scary statistic. A survey of 1,000 parents conducted by Facebook monitoring tool MinorMonitor found that 38 percent of kids on Facebook are under 13 years old–the current minimum age requirement for kids on the network. That's not even the half of it.

The company also found out the 40 in every 1,000 kids on Facebook are 6 years old or younger, based on responses to its survey. The question then shouldn't be, "Do many kids that young even know how to use a web browser?" but rather, "Do many kids that young even know the ins and outs of social networking safety?" We highly doubt it.

MinorMonitor also found that a whopping 74 percent of parents are concerned about their kids' safety on Facebook, with sexual predators being a concern of 56 percent of those mommies and daddies. And if you ask folks like Charles Conway, social games like The Sims Social can be a haven for folks of that ilk. Well, at least 51 percent of parents monitor their kids' Facebook use by logging into their account. Check the infographic in full below.

[Via Mashable]

Figure 1: Sample of recent news coverage

framework of a *participation divide* is most relevant to the discussion because it is not as much a matter of who is or is not participating in SNF, but rather what *kinds* of participation users engage in. Hargittai and Walejko (2008) describe this argument as an increasing tendency to "focus on studying digital inequality by differentiating types of uses and skills, and mounting concerns about a participation gap" (p.242). Rather than focus solely on issues of Internet access, they suggest more consideration should be given to the persistence of differential rates of participation, as well as to the quality of engagement. In parallel, Ito, Horst, Bittani & Boyd (2010) state that more complex and sophisticated forms of engagement, including online socializing and participating in "networked public spaces," requires "ongoing, lightweight access to digital production tools and the Internet" (p.346). Thus the notion of a digital divide must now be understood in terms of depth of engagement, level of participation, multiple points of Access (Hassani, 2006), and various other factors.

The notion of a digital divide is further complicated when dealing with kids, since as Hargittai & Walejko (2008) also point out, "concerns of digital inequality are less likely to revolve around issues of Access given that they represent the most connected age group" (p.240). Similarly, Livingstone & Helsper (2007) concur that age is an important yet often overlooked factor when it comes to questions of Internet access and equity.

The literature also indicates that some important differences in usage and access follow along traditional socioeconomic and demographic lines, particularly race, ethnicity, gender, education (highest level of education obtained by parent(s)), and household income (Warschauer & Matuchniak, 2010). Tracing rates of home Internet access by race over a 10-year period, scholars show that important racial gaps have persisted over time. According to a Pew report conducted by Purcell, Entner & Henderson, (2010), "for a significant portion of low income and nonwhite adults, cell phones represent their only means of Accessing the Internet and engaging in some online activities" (p.19). It is important to view these findings through a critical lens. Watkins (2011) warns, for instance, that an increase in mobile Internet access among blacks and other minority groups tells us very little about the *types* of activities that are enacted or enabled.

If mobile devices are used (or usable) primarily for consuming rather than producing content, for instance, enduring inequalities may be reproduced despite expanding rates of Access (Hargittai, 2010; Hargittai & Walejko, 2008). Similar arguments are made with regard to gender divisions within kids' use of SNF. Research by Lenhart et al. (2010) shows that female and male adolescents are equally likely to use traditional SNF such as Facebook, yet qualitative studies suggest important differences in the ways and places boys and girls engage online (Livingstone & Helsper, 2007; Lin, 2008; Fields & Kafai, 2010a).

There is also a need to address the various types of users who get clumped together as "non-users" of SNF. The non-users group may include both people who do not actually go onto SNFs at all, as well as those who simply do not produce lasting "residues" (like creating their own profile), or who decide not to publish content online. This group also includes those who might start constructing an SNF profile and then quit, or who lurk in a virtual world without interacting with others. This latter type of non-users often gets counted in participation statistics, especially those regarding the number of registered users on particular site. For example, sources that use the total number of accounts ever created as an indicator of a site's popularity, rather than referring to the number of active users within a given month or the number of users who log on at least once a month.

expanding the range of platforms considered

In addition to the recent reports of younger children using SNF, a key development driving increased interest in this area is the recent influx of *child-specific* social networking sites. One example is Everloop, which was launched in 2011 and is aimed at children between 8 to 13 years of age. The site is advertised as a "safer, online, social homebase for kids under 13. Everloop is a free place where kids can connect with friends, play games, share pictures, send messages, discover new talents, learn and have fun" (Everloop, n.d.). Another was the short-lived Togetherville. Launched in 2010, acquired by Disney in early 2011 and closed in early 2012, the site described itself as a "social online community for families where parents create safe online neighborhoods for their kids (under 10) to play and connect with the real-life friends and family they already know and trust" ("Rupnow," 2012).

It is important to remember that these sites join an already vast assortment of non-traditional social networking forums, such as virtual worlds and project spaces that have been aimed at and enthusiastically used by tweens and younger children for several years. As described in Part II, these forums include virtual worlds such as Club Penguin and Webkinz (both launched in 2006), Wiglington and Wenks (launched in 2009), project sites such as Scratch (2008) and Storybird (2009), and the LittleBigPlanet console-enabled network (2008). These latter types of SNF are rarely counted alongside traditional sites that conform more directly to the characteristics and expectations associated with well-known social networking platforms like Facebook or MySpace.

Club Penguin: game-themed virtual world

The virtual world as social network

Stats (as of January 2012)

- Launched October 2005, free/monthly subscription, developed by Club Penguin Entertainment Inc., acquired by Disney in 2007
- 150 million registered users
- 6-14 year olds (open to all ages)
- International (available in 5 languages)

Launched in 2005, Club Penguin was originally developed by an independent Canadian game design studio, Club Penguin Entertainment, Inc. (formerly New Horizons, Inc.). In 2007, it was purchased by the Walt Disney Internet Group (WDIG) for an estimated $350 million. Since its inception, the virtual world has operated on a monthly subscription model. It also offers a "non-membership" service, which is free-to-play but that significantly limits users' access to game features and areas. Both Club Penguin Inc. and Disney describe Club Penguin as "ad-free," a feature that is used within public relations materials to justify the monthly subscription rate. The omission of ads frequently appears as a key selling point in promotions targeted to parents.

The Club Penguin community is highly engaged, which can be seen in the various ways players participate in the ongoing construction of the virtual world. In addition to the round-the-clock moderator service provided by the game's developer, players actively monitor one another for inappropriate behaviors. Many players volunteer to be official "Tour Guides," showing new players around the virtual world and introducing them to its many features. Most impressive is the players' commitment to the world's in-game newspaper The Club Penguin Times, which receives 30,000 submissions from players every day in the form of articles, poems, and artwork. According to Club Penguin's co-founder, Lane Merrifield, The Club Penguin Times is read by at least two-thirds of the game's 6.7 million players, an audience share that far surpasses that of most real-world print newspapers (Chmielewski, 2008).

The success of Club Penguin has prompted the development of toys (including plush toys and action figures), books, a trading card game ("Card-Jitsu™"), two games for the Nintendo DS (Club Penguin: Elite Penguin Force and Club Penguin Elite Penguin Force: Herbert's Revenge), a Nintendo Wii game (Disney Club Penguin Game Day), and numerous other tie-ins. The combination of subscriptions and tie-in products may help to explain why the site recently ranked seventh on a list of the world's most profitable massively multiplayer online games (Pilley, 2009). The tie-in toys themselves flow back into the virtual world in a variety of important ways, including through the use of "special codes" that unlock special avatar costumes, items, abilities, and coins that can be used within the game world.

While the pay-to-play features are publicly promoted as "supplementary" or "premium," implying that they are somehow superfluous to a standard or regular form of gameplay, these hierarchies of Access are in actuality more deeply embedded in the gameplay design than they initially appear (Grimes, 2010). In fact, it is often only after a player has surpassed the initial levels or areas of the game world that the true significance of the premium features is revealed. For example, in Club Penguin there are no "levels" for players to achieve, which limits players' ability to demonstrate their mastery of the game. Instead, the accumulation and display of items is offered as a way to exhibit mastery, and items are used to reward player loyalty and financial commitment. Items are emphasized throughout the game environment (in catalogs and competitions), and they are frequently described in in-game texts and announcements (Grimes, 2010). Even non-paying players are intermittently given special items for attending special events, giving them an occasional glimpse into the "premium" experience of avatar customization and enhancement. Additionally, certain items have only been released once, which bestows additional status onto those players who have been playing long enough to own one of these coveted treasures.

Since the majority of items are exclusive to paying members, a paid subscription becomes an important way of marking oneself as a high status player—one who has attended exclusive events, explored secret members-only areas, and collected rare items. Paying members of Club Penguin are granted access to exclusive parties, secret areas, and rare (free) items. These treasures are not only promoted through the players' subsequent display of members-only items when they return to the common areas, but are also promoted heavily in featured articles published in the game's weekly newspaper and on the developer blog (Grimes, 2010).

A player's status as a paying member of the virtual world is communicated to the rest of the community largely through features of the world's graphical user interface (GUI). While players themselves may negotiate

status on their own terms, the linkage between status and items is not only constructed within the game design, but also communicated visually. For instance, many items can be worn or carried by the player's avatar (Grimes, 2010). On one level, these marks of distinction generate the added value of the games' pay-to-play features, providing paying customers with additional benefits and services that might justify the ongoing financial investment required to maintain a monthly paid subscription, or to engage in repeated micro-transactions. On another level, they serve to remind both paying and non-paying players alike that the pay-to-play features are exclusive in every sense of the term, reinforcing hierarchies of Access through their integration into the economics, designs, and storylines of the virtual world environment (Grimes, 2010).

Recommended Reading:

- Marsh, 2010; Black, 2010; Grimes, 2010.

Communication	**Profile**
Chat with other avatars, possibly limited to pictographs or selected words if limited by parents	Avatars and personal rooms ("igloos"), decorated with items gained from achievements in play or purchased with virtual currency through the in-game catalogue
Networking Residues	**Hierarchies of Access**
Friend lists, fan art, blog post comments	Paid membership allows users to purchase additional decorations and avatar accessories (including "rare items"), admission to exclusive parties, and secret play spaces

The disproportionate attention paid to the online social networking practices of teens and young adults has meant that many studies have limited their investigations of social networking to Facebook-type platforms. This has in turn produced a number of critical gaps in the existing literature. For instance, a survey described in a recent Kaiser Family Foundation (Rideout et al., 2010) report distinguishes between social networking, games, and video sites such as YouTube, and provides separate statistics and time use frequencies for each of these three categories. In so doing, it fails to account for the strong possibility that a significant proportion of younger children's social networking practices might occur within games, on video sharing sites, and in other non-traditional yet highly social online forums. It is significant to note that while children aged 8-10 reported spending only 5 minutes a day on social networking, they also reported spending 17 minutes gaming (compared to 19 minutes for kids aged 11-14, and 14 minutes for teens aged 15-18), and another 8 minutes on video sites (18 minutes for kids aged 11-14, and 16 minutes for users aged 15-18 years). Because of the way in which children's engagements with new media tends to be categorized by *platform* rather than activity or use, little is known about the forms and contents of the social networking practices that occur in other types of multiuser forums.

From "sites" to multiple forums

As described in the previous section, the use of the term "social networking forums" (SNF) emerges from our conclusion that online social networking happens across a broad number of online forums. Evidence for these cross-forum practices is particularly true of younger children, who interact—with each other and online—in highly diverse and often unique ways. A pertinent example can be found in virtual worlds. Many virtual worlds contain features and affordances that share deep similarities with traditional social network sites; they enable many of the same practices identified as key to the phenomenon and importance of online social networking. Lastowka (2010) suggests that, "Virtual world software is also commonly designed, like the software of Facebook or MySpace, to allow users to create and manage customized social networks" (p.150). A growing number of studies examine how children use virtual worlds for social interaction, particularly to establish group norms, form networks, and negotiate social capital (e.g. Fields & Kafai, 2009b; Marsh, 2010; Black, 2008). This work is beginning to reveal the ways in which younger children use social media technologies to build and sustain their interpersonal relationships, engage in informal learning, and construct identity—all valuable contributions to the discussion of kids' social networking if defined with a broader lens.

Use of virtual worlds remains limited to a relatively small percentage of teens: only 8% of the online teens in the Pew study reported visiting a virtual world like Habbo Hotel or Whyville in 2009. That same year, market analyst eMarketer estimated that 6 million kids aged 3-11 years visited virtual worlds such as Club Penguin, Webkinz and Moshi Monsters at least once a month—a figure that Shields (2009) argues represents 37% of online users from that age group. Breaking these

statistics down a bit further, Pew reports that usage is more prevalent among younger teens (11% of online 12-13 year olds use virtual worlds) than older teens (7% of teens aged 14-17 years), with no variation by sex, race, ethnicity, or household income (Lenhart et al., 2010). Thus, in keeping with the earlier argument about the need for more research examining younger children and their online practices, we contend that virtual worlds represent a particularly important addition to the discussion because of their immense popularity among elementary-aged children.

As part of this argument, in the next several sections of this paper we feature several case studies of SNF primarily populated with children and include several different kinds of forums. These begin to demonstrate the range of types of participation within these different kinds of settings. Each case describes very different types of SNF, with the focus placed on a different facet of children's online social networking in keeping with the issues and research addressed in that particular section of the paper. We also begin to apply our classification system in each case study, noting the forms of communication, profiles, networking residues, and hierarchies of Access. While each of these terms is described more thoroughly in Part III, we found it helpful to apply them as examples within the case studies of virtual worlds, networked games, project-sharing sites, and other social networking forums.

Multiple forums, multiple screens

Thinking beyond traditional definitions of online social networking also suggests that we start looking beyond the personal computer when it comes to understanding the online behavior of young children. Social networking is as likely to take place on web-enabled gaming consoles (such as the Nintendo Wii, PlayStation 3, Xbox 360) and handheld devices (iPad, Nintendo 3DS, Android) as it is via personal computers. Even mobile phones now offer social networking apps (from the mobile-ready version of Facebook to device-specific social networks like Instagram), as well as mobile games with associated social networks.

Extending our analysis to include social networking activities unfolding across platforms and technological devices is therefore an increasingly necessary step to fully assess social networking activities. Given that studies also indicate that kids often engage with multiple platforms and screens concurrently (Rideout et al., 2010), "media multitasking" should be a core consideration in future investigations as well.

Such an expanded perspective is imperative when addressing the current popularity of digital gaming among youth. According to Lenhart, et al. (2010), 80% of teens own a gaming console (Xbox, Wii, etc.), and 51% own a portable gaming device (PSP, NDSi, etc.). In both of these cases, boys remain more likely to own a gaming device than girls. In the case of portable games, the differences become slighter: 89% of boys aged 12-17 own game console compared to 70% of girls in the same age group; 56% of boys and 47% of girls own a portable gaming device[5] (Lenhart et al., 2010). Overall, 67% of families with children aged 0-8 years own a game console and 44% have a

LittleBigPlanet: user-generated content game

Social networking through web-enabled consoles

Stats (as of May 2012)

- First installment released in Fall 2008 by Media Molecule for the Sony Playstation 3 (current generation home videogame console system), sequel released in 2011, Playstation Portable (PSP) version released in 2009, PSVita releases in 2012
- 9.5 million copies sold (so far)
- Rated E for Everyone (by the ESRB)
- International (available in more than 13 languages)

Media Molecule's *LittleBigPlanet (LBP)* is a videogame series exclusively available on the Sony Playstation 3 (web-enabled videogame console), with associated versions on Playstation portable devices (PSP and the upcoming PSVita). The game is noteworthy for a number of reasons—not least of which is the 5 million additional new, player-created game levels that players have generated and published online since its launch in Fall 2008. It has a vibrant community of player-creators who share content, play together, and otherwise interact through both an in-game network (which becomes available when the internet-enabled console is connected to the Internet) and a more traditional online social network, LBP.me, along with various unofficial and fan-driven forums. The game is rated E for everyone, and it is marketed to a general audience. While it is unclear what exact proportion of their player base consists of children (the company has not released demographic details about its users), there is evidence to assert that at least some players are children. With 9.5 million copies of the games sold worldwide, it is considered to be one of the most popular game series currently available.

The game has a story mode that extols the value and importance of sharing, exploring, and creating. The story mode also serves as an extended tutorial through which players are introduced to a cross section of what is possible to make and do with the game's user-generated content (UGC) tools and templates. Through play, users discover and collect assorted materials, objects, and stickers, which

they can subsequently use to create their own levels. What makes this game unique is its built-in level creator, which allows players to not only customize levels and content, but build their own using both prefabricated objects as well as objects and images of their own design. Using virtual cardboard, string, glue, and paint, players can create their own two- or three-dimensional objects. In addition, players can make their own "stickers" using the PlayStation®Eye camera to capture images and textures from the player's offline environment. These stickers can be used to decorate both new and existing objects and spaces within the game.

The level creator mode includes an extended series of interactive video tutorials, which players can complete to learn more sophisticated techniques like assigning specific behaviors to enemies or including a time limit to enable racing games, etc. The level builder interface is intended to help players learn to use the design tools—it is easy to use and becomes progressively more flexible through use and mastery. For instance, once players have successfully built a level using a pre-fabricated template, they can quickly move on to creating one from scratch. However, building can also start almost immediately, as players are able to bypass the majority of the tutorials and learn by trial and error if desired. There are thus very low barriers to entry when it comes to creating games in LittleBigPlanet.

The emphasis on easy access extends to the publishing process as well. Sharing levels with other players through the game's online connection (part of the Playstation®Network) is a very easy process and takes only one or two clicks. Exploring other players' creations is intuitive and encouraged at various stages of gameplay. There are various methods for finding player-developed levels to play—from "MMPicks" (i.e. Media Molecule's regularly updated, curated selection of noteworthy player-made levels and games), to listings of the current most "popular" (according to player ratings) and most frequently played levels, to newest additions, to lists of games grouped by shared theme, keyword, or difficulty level. Players are repeatedly encouraged to rate each others' games, to tag or "heart" their favorite games and game designers, and make lists for other players to consult. Participation in these creative and networking activities appears to be uncommonly high among the LittleBigPlanet player community. Media Molecule maintains that the vast majority of its active players upload their creations to the online network. According to Media Molecule co-founder Alex Evans, "Basically, everybody publishes a level" (Gaston, 2011).

The key to LittleBigPlanet's popularity is its "socialness"—players are not only able to create game levels, but they can also share and play them with others, as well as explore an ever expanding universe of content created by other players (Grimes, forthcoming). The community also receives a good deal of support from the game's developers who,

for example, provide a "fansite" starter kit. The in-game, console-enabled network is further supported and extended by a more traditional web-based social networking forum (LBP.me), where an up-to-date copy of the player's in-game profiles, portfolios, information (friends, favorites, hearted levels, etc.), and activities are featured.

Here, players continue the conversations started in game, posting on each other's walls, sending messages, and interacting in forums. The fact that the game's sequels tie into the original by carrying over characters, worlds, and objects has not only made it relatively easy to build on prior knowledge and materials to create new levels for later game versions, but also fosters the kind of continuity necessary for sustained community building.

Recommended Reading:

Grimes, forthcoming; Sotamaa, 2010; Westecott, 2011; Harper, 2011.

Communication	**Profile**
Messages on game levels, sent directly to individual players, etc.	Portfolios presented as "worlds" that other players can visit – every game is a continent or destination point on the world. Supplemented by a player "card" that lists a player bio, location, levels created & hearted, etc.
Networking Residues	**Hierarchies of Access**
Hearting, rating (happy face/sad face icons), reviewing and tagging (keywords) games. Hearting players, adding players to friends lists, leaving them messages, "copying" other players' content (bubbles, items, etc.).	Paid-for downloadable content (DLC) (e.g. players can usually save a copy of new items discovered in other players' levels, but DLC can only be saved by those who have purchased it). Friend lists, Lists of "hearted" games and players.

handheld gaming device (Common Sense, 2011). Among teens, nearly a quarter (24%) use gaming consoles to go online and 19% do so using their portable gaming devices (Lenhart et al., 2010). While these statistics do not indicate that kids spend all of their time on gaming devices engaging in social networking activities, there is emerging evidence to suggest that a portion of the time spent on popular services such as XBox Live involve networking types of behaviors.

expanding the activity range

Not only do we need to broaden the scope of what kinds of forums and sites we include under the heading of social networking forums, but we must also expand our views of what activities are relevant. It is imperative that we dispel the myths surrounding SNF, noting what is and is not a part of those sites and who is and is not participating in the best practices available. This means demystifying the all too tempting idealization of technology (that everything new and innovative is good for us) and actually studying what kinds of activities kids, and specifically children, are doing in SNF—as well as which kids are getting the most out of these activities and in which forums. Many important new literacies are necessary for participating deeply in some of the best practices available in SNF, from knowledge sharing to collaborative thinking to reading and producing multimodal texts with visual, audio, and hyperlinked information. Research also suggests that SNF can also promote some forms of social and identity development. Emerging SNF that sponsor sharing creative designs may provide unique opportunities for children to develop these kinds of new literacies and social practices. Though these questions require much more extensive analysis of existing research and call for new investigations of these topics, in this section we briefly survey some of the current research on learning, development, and creative play in SNF to ask what kind of participation is required to gain these benefits of learning and development and what kinds of sites promote them.

Multiple literacies: needs and opportunities

Since the advent of the computer, then the Internet, and more recently social networks online, the education community has been abuzz with excitement about how technology can promote or be designed to promote learning. There are many calls about using SNF to prepare the new types of citizens and entrepreneurs society needs for future decades (e.g. Collins & Halverson, 2009; Thomas & Brown, 2011) —people who can lead massive groups (Brown & Thomas, 2008), build collective knowledge (Levy, 1997; McGonigal, 2008), and use distributed social networks to manage information too big for any one person. Certainly there is evidence that these skills can be acquired in SNF, but many agree that not everyone acquires these types of skills automatically (e.g. Jenkins et al, 2006, 2009; Hargittai, 2010). As such, there is a need consider how to promote and support practices that facilitate getting the most out of SNF.

There are a number of skills and literacies that kids can and should learn in order to

table 1: Literacies & Skills for and from Social Networking (drawn largely from Jenkins et al (2006) and Steinkuehler (2007))

Social, digital literacties	Description	Selected Examples
Socially and materially distributed cognition	Coordinating people, tools, artifacts, and text across multiple multimedia, multimodal spaces	Gaming forums in World of Warcraft (Steinkuehler & Duncan, 2009) Knowledge diffusion in Whyville (Fields & Kafai, 2009b)
Collective intelligence	Jointly creating, sharing, and problem solving online repositories of community knowledge and skills	Wikipedia (Benkler, 2006) Forums & other knowledge network sites (McGonigal, 2008) For vision of collective intelligence see Levy (1997)
Collaborative problem solving practices	Problem solving in knowledge networks, games, and project-sharing sites	Critical commenting on projects (Games, 2010) Co-creation and debugging of projects in Scratch (Brennan, Valverde, Prempeh, Roque & Chung, 2011)
Multi-modal literacy practices	Using specialized forms of textual, visual, and aural modes of representation or combinations of them (multi-modal) for in-world social interaction, genres of writing, and discursive argumentation	Fan fiction writing (Black, 2008) Website and avatar creations (Leander & Frank, 2008) Networking profiles (boyd, 2007) Language practices in children's virtual worlds (Black, 2010; Marsh, 2010; Black & Reich, 2011) Multimodal literacy (Kress, 2003)
Computational thinking	Skills used to create programs and solve programming problems, with special concern for debugging, iterative design and large-scale computations like crowd-sourcing, and tagging	In Scratch (Resnick et al, 2009) For vision of computational thinking see Wing (2006)
Reciprocal apprenticeship	Enculturating one another into valued practices and thinking	Apprenticeship into: Gaming roles (Steinkuehler, 2006) Animating in Scratch (Brennan et al., 2011) Programming in Moose Crossing (Bruckman, 2000)
Appropriation	Sampling and remixing media content	Remixing programs in Scratch (Monroy-Hernandez, Hill, Gonzalez-Rivero & boyd, 2011) Assembling collaborative video projects (Luther, Caine, Ziegler & Bruckman 2010).
Transmedia navigation	Following the flow of stories and information across multiple modalities (games, books, movies, cards, writing, drawing, etc.)	Relates to thinking about multimodality (Kress, 2003) See also Jenkins et al. (2006, 2009)

participate fluently in today's digital venues. In 2006, Jenkins et al. drew up a list of these literacies that has served well to map out the territory of what kids need to learn. Since then others have also mapped out potential literacies needed to participate in social, online worlds (e.g. Steinkuehler, 2007). In Table 1 we draw from these two major sources to produce a list of literacies that should be a part of participating in social networking sites—things that we feel kids ought to gain from their participation in such sites.

An overview of the some of the key literature on children's virtual worlds provides a perfect case study for illustrating the importance of looking critically at learning on those sites. While researchers largely agree that playing in virtual worlds can provide many opportunities for reading, writing, and learning other multimodal forms of literacy in SNF, evidence is growing that many of the virtual worlds for children that are currently available are *impoverished* compared to those for teens and adults. While teens participating in the World of Warcraft may be engaging in reading and creating text high above their grade level (Steinkuehler, 2011), the comparable worlds designed for children often provide much more limited, homogenous texts (Carrington & Hodgetts, 2010 on Barbie Girls), contain fewer affordances and action opportunities (Grimes, 2010), and even promote bad grammar because of word filters (Black, 2010). Literacy scholars highlight that the greatest opportunities for literacy development occur where kids are given the most freedom for expression, but such expression is often limited (because of societal fears, etc.) on sites developed for children. This points to the immediate need for focused, empirical research into sites developed explicitly for *children*. It also suggests that the new SNF that sponsor sharing creative designs might provide unique opportunities for children to develop new literacies, though research is needed to support and critique this position.

Social and identity development

Social and identity development have been two of the more touted opportunities for kids in online social networking forums. Two key areas of social development involve developing "strong ties" with a few close friends and "weak ties" with a number of other individuals (Granovetter, 1973). Both kinds of ties are important for social development. There is strong evidence that participation in SNF helps teens and young adults strengthen their existing relationships (e.g. Ellison, Steinfield & Lampe, 2007; Subrahmanyam, Reich, Waechter & Espinoza, 2008; Lenhart & Madden, 2007). Indeed, using SNF to continue relationships may be particularly important for kids like migrant youth whose families are distributed around the world (Ünlüsoy & de Haan, 2011).

There is also evidence that participation in SNS can help kids build and maintain "weak ties" (Granovetter, 1973). For instance, a study by Steinfield, Ellison & Lampe (2008) shows that using Facebook intensely especially helped teens with low self-esteem. Through social networking on Facebook, youth were able to keep abreast of news and gossip from school even if they were not in the "in" crowd.

Cisco Networking Academy on Facebook

Knowledge sharing affinity space

Stats (as of August 15, 2012)

- Launched July, 2009, developed by Cisco Networking Academy (and users)
- 15,575 weekly active users, with approximate 546,416 weekly total reach
- 52% of users aged 18-24 years, 5% aged 13-17 years
- 80% male, 20% female
- International (regular participation from users in over 20 countries)

The Cisco Networking Academy was launched in 1997 to provide comprehensive ICT literacy skills to students in 165 countries across the globe. Specifically, the Academy is an education program that affords students with the learning tools needed to design, build, troubleshoot and secure computer networks through online courses, interactive tools and practical learning activities.

For example, The Ryerson White Ribbon Campaign page on Facebook lists a series of wall posts about group updates or event notifications but doesn't entail many member comments or feedback even though there is an opportunity for any member to write something on the wall. Additionally these sites do not employ mechanisms to bring mini communities together such as automatically connecting White Ribbon Campaign pages across different universities. The Networking Academy realized that these unused features have the potential to foster learning and knowledge transfer. Cisco Ripple, offers a resolve to these gaps by providing a service that carries students' learning experiences across several mainstream social networks to a larger online community with relevant and timely information as well as opportunities for interaction, discussion and collaboration among members. In 2009, a Facebook page that connects back to the Ripple API was implemented as part of this larger strategy.

case study: cisco networking academy

The Cisco Networking Academy Facebook page saw immediate and tremendous growth in its first few months of operation, during which period the page was being maintained by a single Cisco employee. As daily activity on the site continued to boom, maintenance of member requests, user questions and postings by one person became unachievable. In order to ensure the page was achieving its goals, Cisco started locating members of the community space who seemed knowledgeable and who could answer questions and provide basic support to other members. For instance, one member had started recording his own video lessons and posting them, on his own initiative and on a completely voluntary basis. Approval was sought to make these expert members page administrators on an unpaid, voluntary basis, as a way of formalizing and acknowledging the value they were already adding to the space. In this, Cisco took inspiration from Coca Cola, which had established a similar relationship with the original creators of one of Facebook's most popular unsanctioned fan sites of the Coca Cola brand, following Facebook's decision to take away these types of fan-produced pages in 2009. Rather than displace its fans, Coca Cola turned them into brand ambassadors and provided support for their participatory culture activities. Cisco's decision to adopt this model stemmed largely from a lack of viable alternative means of resolving its scalability and support issues. The members, meanwhile, took the opportunity and ran with it.

According to a Cisco Networking Academy representative, the benefits of this relationship were manifold. Doing so helped to transform a corporate Facebook page into a vibrant affinity space, since members felt that their input was valuable because it was acknowledged and rewarded. This also helped to increase the sense of community as members were given more freedom over content creation and organization. Responsibility was shifted to content providers, giving the community a sense of ownership and onus over the maintenance and quality of information that was shared. A concurrent, private Facebook group was also created where ambassadors and Cisco employees could discuss network issues, train new ambassadors, share information, organize webinars and to talk about how to manage the space. The Cisco Networking Academy Facebook page can thus be seen as a highly participatory and engaging environment. When instructors don't have time to answer questions other students will jump in to respond to ensure that no question goes unanswered. Most importantly, it brings communities of people together across the virtual and physical world to learn, collaborate and discuss topics of similar interests.

Interestingly, the Facebook page has inspired many of the same practices found in game- and media-based affinity spaces and project sites. For instance, there is a subculture among its members of making art and crafts out of the excess wires (left over from new network set-ups). Other members have posted pictures of network-themed cakes, while

one of the ambassadors makes his own, informal video tutorials based on other users' questions and requests. Although these activities are not directly tied into the networking academy system, the Networking Academy page administrators recognized their value in taking the learning experience to a deeper level of participation and engagement. As such, Cisco has taken a stance of supporting and promoting many of these creativity activities on the page, holding contests and interacting with creators in spontaneous and informal ways.

Communication	**Profile**
Comments on Networking Academy Facebook page, in addition to other Facebook means – messages, status updates, comments.	Facebook timeline "wall," with pictures, status and activity updates over the past months, related information page.
Networking Residues	**Hierarchies of Access**
Friend lists, likes, comments, posts on users' walls.	Anyone can post to the Networking Academy Wall. Select users have been appointed as moderators with the ability to message members and delete posts.

Having a broad number of weak ties can also provide kids with opportunities to socialize with others of different backgrounds, promoting "perspective taking" with regard to race and ethnicity (Tynes, 2007b). Though this depends on who is within one's social networks, if used in certain ways, online social networking could help promote understanding of people from diverse backgrounds.

With regard to identity development, many researchers agree that the same issues that persist in SNF also persist in school, family, and friendship groups (Giang, Kafai, Fields & Searle, 2012; Subrahmanyam, Smahel & Greenfield, 2006). Youth pursue aspects of their gender, ethnic/racial, and sexual identities online just as they do offline. SNF may provide unique opportunities for these explorations, especially when kids interact in environments where they can shape who they are and how people perceive them over time (Black, 2008; Fields & Kafai, in press b; Marsh, 2010). Kids do not simply pick an identity and stick with it—they play with their identities as they learn to participate in new social settings—and SNF can provide opportunities for this to happen.

However, as we have already articulated, most of the research cited above deals with the social and identity development of teens and young adults, not children (excepting Fields & Kafai, in press a; Marsh, 2010). Though some challenges are similar (such as developing both strong and weak ties and exploring identity), children face significantly different social and emotional development issues than their older counterparts. We need deeper research on the kinds of relationships children develop online, how they represent themselves through different profiles, how different types of sites afford different developmental opportunities, and how limits on language and avatar customization (especially those sites that limit usage by these younger ages) affect children's development.

Play and creativity

One key social networking practice that has emerged in recent years involves creating, sharing, and socializing around user-created content online. Pew reports that "Online sharing of content that teens have created themselves has remained steady since 2006; 38% of Internet-using teens say they shared content online in 2009, similar to the 39% who said the same in November 2006" (Lenhart, Purcell, Smith, & Zickuhr, 2010, p. 23). Despite these statistics, there is reason to believe that instances of online sharing are nevertheless trending upward. Back in 2002, research by the National School Boards Association revealed that only 13 percent of students aged 9 to 17 years were involved in sharing or looking at art and stories created by others online. Equally intriguing as a trend is the fact that kids' gaming activities sometimes overlap with the production of digital content—a key, yet often overlooked, way in which young users act online. Console games[6] targeted at children and teens, such as Media Molecule's LittleBigPlanet for the Sony Playstation 3, Microsoft's Kodu Game Lab for the Xbox360, and Nintendo's D.I.Y. WarioWare for the NDS, feature tools for creating game items, characters, levels, and

mini games that enable non-expert players to contribute much more directly to the game than was previously possible. Because these games are Internet-enabled, players can share their finished products with others, contributing to vibrant networks or "communities" of user-creators. Each of the major console manufacturers (Microsoft, Sony, and Nintendo) now provide online services through which players can download (free or purchased) content submitted by other players, and upload their own creations.

Since children are generally excluded from participating directly in public life, it is worth highlighting the significant opportunities that kids are given by social networking and other online forums to collaborate in the creation of shared cultural texts. Sharing digital artifacts with others online, especially in online SNF where others are creating similar types of artifacts, affords many educational opportunities, including designing or writing for a specific audience (Magnifico, 2010), giving and receiving constructive criticism (Black, 2008), creating projects collaboratively (Brennan et al., 2011), studying the design of others' projects, remixing—redesigning or building on the designs of others (Monroy-Hernandez et al., 2011)—and making mods of games (Hayes & Gee, 2010; Grimes, forthcoming). At the same time, kids' newfound roles as cultural producers raises important questions about copyright and fair use within SNF that feature "remix" and fan activities, as well as young people's knowledge of these processes and the challenges that this may present for the various stakeholders involved. For instance, kids' newfound roles as producers introduce a number of important challenges to existing legislation on authorship, intellectual property ownership and copyright (Grimes, forthcoming; Grimes & Shade, 2005; Steeves, 2006; Turow, 2001). These roles also raise complex new questions about children's cultural rights including freedom of expression and access to fair use exemptions.

Unanticipated uses & overlooked users

One of the challenges in researching kids' online social networking practices is the methodological reliance on self-report and overly simplistic user categorization. Thus, the data tend to generalize and omit exceptions, contexts, non-users, various types of digital divides, and nuanced age differences. Further, given the quantitative nature of the majority of these data, deviance from the statistical mean is often conceptualized as problematic or risky. These outlying behaviors tend to get coded as facets of kids' SNS use in need of regulation and control. Common examples include kids lying about their ages (or posing as adults), flaming and flirting, cheating and breaking the rules (Ito, Horst, Bittanti & Boyd, 2010; Livingstone, 2008a; 2009; Markwick & boyd, 2011). Though some behaviors may indeed be problematic, without adequate contextualization and in-depth analysis, these behaviors and user types can too easily be misunderstood or misrepresented.

Misrepresentation is common in media coverage of kids and SNF, especially various examples of moral panic-style reports of young people's so-called "deviant" online practices. In

addition to perpetuating harmful myths about kids and online social networking, such media classification also obscures important findings and compelling arguments about the roles that these activities can play in kids' lives. Some of these activities can be understood as forms of boundary pushing, which play an important function in kids' development and socialization. As illustrated in the case study of hackers and "nonconformists" below, it is crucial to research these more exceptional practices as part of what kids do online and in their social interactions more generally. Practices that do not fit the pattern of a majority of users can be equally, if not more, illuminating about the possibilities and limitations of SNF.

Whyville: A science education virtual world

Social networks of learning and identity play

Stats (as of August 2011)

- Launched 1999, free ($5/month priority membership), developed by Numedeon
- 6.9 million members: 30 minutes average login, 6+ months average stay
- 8-15 years old, median age
- 24% male, 76% female
- 600,000 youth-created avatar parts, 90 million avatar sales

Whyville.net is among the very first virtual worlds ever created, not just for kids but for anyone. Since 1999, Whyville has drawn millions of kids into the virtual world, especially tween girls (aged 9-13), one of the highest in the virtual world industry. Though perhaps not as large in population as some other virtual worlds for kids, Whyville reports one of the longest average minutes per login (30+ minutes per login). In Whyville kids play casual science games in order to earn a virtual salary in 'clams,' which they can save up in their bank account (which earns interest) and spend on buying and designing parts for their avatars, projectiles to throw at other players, and other goods such as cars and plots of land. The general consensus among Whyvillians is that earning a good salary and thus procuring a large number of clams to spend on face parts or other goods is essential for fully participating in Whyville (Kafai & Giang, 2007). Social interactions with others are the highlight of life in Whyville for most players and consist primarily of chatting and ymailing (the Whyville version of email).

One of the highlights of Whyville is its strong design culture: all avatar parts are designed, bought, sold, and assembled by kids themselves. In fact, working on one's avatar takes up nearly a third of every player's time and energy (Feldon & Kafai, 2008), not differing by reported gender, age, or intensity of user status. Designing avatars provides a way to play with one's representation in a novel social community and learn how looks affect people's responses (Kafai, Fields & Cook, 2010). In the past, working on one's avatar or designing avatar parts from scratch were some of the few opportunities for design in Whyville, but

increasingly Numedeon has been adding more opportunities for creative design, including creating airplanes, racing cars (and racing them), a nutrition plan (with affects on one's appearance if there's too little calcium or iron), songs, and most recently games. They are also making design more social – in the game design area kids can chat with each other while they are designing and in avatar design Numedeon has created a "Style Studio" where more than 100,000 makeovers are given by Whyvillians to Whyvillians every month.

Whyville has also been moving to make science education more massively social. Akin to movements for citizen science, players are encouraged to share data on things such as what makes avatars move faster, observations of species in a virtual ocean, statistics about climate in the virtual world, or virus infection rates (WhyPox). Players can then view graphs amassed from thousands of data points—even seeing their own points on the graph—and suggest interpretations of these representations. One challenge to hosting these scientific "community events" (Kafai et al, 2007) is that it takes more effort than making a single mini-game that does not need changing over the years; such events require monitoring and new events must be created or re-issued to hold kids' interest. Still, this combination of the social and the science at computational levels holds great potential for drawing together social networking and scientific reasoning for kids.

Recommended reading:
Kafai, 2010; Special issue of Games & Culture, 1 & 2, 2010; Fields & Kafai, 2009b.

Communication	**Profile**
Chat bubbles that appear over avatars' heads, whisper bubbles only visible to one other person, ymail (akin to email)	"City Records" page that shows a user's avatar, a short bio, likes/dislikes, salary, frequency of visits to Whyville and other status symbols related to achivements.
Networking Residues	**Hierarchies of Access**
Ymails, gifts of money (clamgrams) and face parts, specially designed face parts for other users.	Members who pay $5/month may design and sell face parts. Some members may be designated as tour guides and official helpers.

expanding our definition of social networking

From our review of the literature, it is clear that if we are ever to understand kids' SNF usage fully and accurately we must start by redefining what we mean by online social networking. We must think outside the box when constructing our questions, our research designs, and our assumptions about what social networking looks like, where it occurs, and even what it entails.

In this section, we suggest a classification system for examining social networking forums (SNF) and their features based on the type of communication, profiles, and networking traces they encourage and the type of Access they allow. We contend that revisiting the key characteristics of SNF and exploring some of the underlying assumptions about how these characteristics are made manifest is a necessary first step for establishing a broader, more inclusive understanding of online social networking that relates to younger kids.

Our classification system builds off of boyd and Ellison's (2007) seminal definition of "social network sites" (SNS) as websites that involve (1) a public or semi-public profile within the system, (2) a list of other users with whom they are connected, and (3) the ability to view others' lists of connections (p. 2). While we draw on the first and second points in our revised classification, we find the third point to be less helpful now because many social networking forums currently allow users to hide their networks depending on privacy settings. Further, in many of the sites that kids occupy, like the virtual worlds and game spaces discussed above, comparing lists of friends is impossible due to the site's design, even though social networking is a key motivation and aspect of participation. We therefore propose this classification scheme as a provisional path forward to analyze and compare the various platforms and practices that are part of a wider range of SNF.

Our revised model draws on a conceptualization of social networking as something that occurs across contexts, across platforms, and across diverse forms of online practice. Despite this breadth, we suggest that there are recognizable attributes that delineate social networking "forums" from other websites. SNF can be identified by their *forms of communication, personal profiles, networking residues,* and *hierarchies of Access*. As a composite, one could say that this set of features defines the "genre" of a social networking forum. In using the notion of genre as a framework for mapping the social networking terrain, we draw inspiration from Ito et al. (2010) who applied a similar approach when they identified a key distinction between "friendship-driven" and "interest-driven" types of online youth participation. Ito and her colleagues articulate that the distinction corresponds to "different genres of youth culture, social network structure, and modes of learning" (p.15). Generic categories of use (or participation) are particularly relevant to our discussion as they allow for analysis across platforms, which is an important methodology for challenging the binaries (e.g., offline vs. online, SNS vs. virtual world) that dominate discussions of kids and social networking.

We anticipate that as more research on SNF is published and as more and different kinds of SNF are developed, others will add to, expand, tweak, and develop this model further just as we are building on boyd and Ellison's work here.

forms of communication

A defining characteristic of online social networking sites is their support of participants' communication with one another. This function is provided via options such as live chat, voice chat, or even video chat (e.g. via Skype or Google Circles) in addition to posts, comments, and

traditional messages akin to within-site emails. Different sites contain different forms of communication, and this helps characterize the site. For instance, in Whyville players can live chat with each other via cartoon-like bubbles above their heads. They can also "whisper" in the same way via private one-on-one channels visible only to a single person. This form of communication is qualitatively different from the kind of communication facilitated on sites like Facebook or Google Circles, in which public communication is largely recorded in the form of posts and comments that last until one deletes them. Future studies of SNF should document these different forms of communication, including to whom such communication is visible (e.g., a live but temporary in-room audience as in Whyville versus a selective but more permanent set of individuals on Facebook), as well as how different communication forms are utilized for different audiences and diverse purposes.

Figure 2: Chat Bubbles in Whyville

The fact that communication within child-specific SNF has become a particular point of contention, debate, and regulation makes it all the more significant to the current discussion. In many SNF directed toward children, communication is limited by a pre-set selection of words, phrases, or smileys that limit children's conversation in very real ways. What forms of communication are available and how children and older participants utilize these in everyday and innovative ways will be a fruitful area of future study.

personal profiles

Another key element of the SNF genre is the user profile. As a personal representation on an SNF, the profile is the means by which people learn about each other. A profile usually consists of a name and one or more images or text descriptions. Forums differ in the types of profiles available to a user. We suggest five initial types of personal profiles below, noting that some sites may contain more than one type.

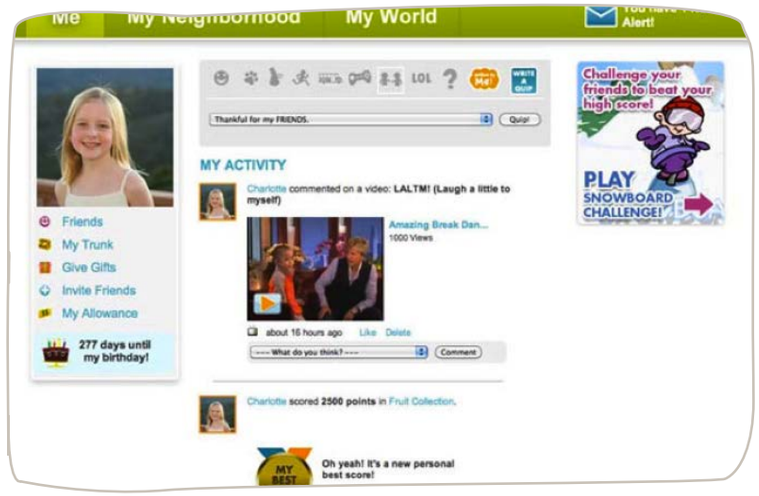


Figure 3: Example of profile page (template) on Togetherville (2010)

a. Page. One major type of profile is the *page*, found primarily on now classic social network sites like Facebook and MySpace, but also on variants like Togetherville and Everloop. On a typical profile page, users represent themselves with their real name

Scratch.mit.edu: a programming & media project-sharing site

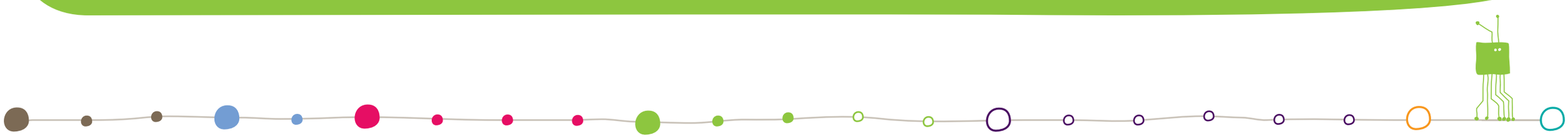
Project-based social networks of creativity

Stats (as of May 2012)

- Launched May 2007, free, developed by the MIT Media Lab
- 1.1+ million members (327,000+ project contributors)
- 2.5+ million projects: 1500 projects added per day
- 8-17 years old, median age 12
- 64% male, 36% female
- International (available in 44 languages)

Scratch.mit.edu is a project-sharing social networking site with the aim to provide a social environment that supports kids as media creators through computer programming (Resnick et al., 2009). It is a type of affinity space (Gee, 2004), where kids who share an interest in programming with Scratch post the animations, games, stories, science simulations, and the interactive art they have made in the visual programming environment of Scratch. Launched in May 2007 MIT Media Lab, the Scratch site has grown to more than 780,000 members with nearly 1500 Scratch projects uploaded everyday. As for hierarchies of Access, Scratch downloads are free, participation on the site is free and available to people of any age, and all comments and projects are public. Community monitors review flagged comments, delete inappropriate ones, and contact users who do not work within the spirit of collaborative, positive feedback on the site.

On the Scratch site, activity is primarily project-focused: social networking is largely centered around sharing user-created projects. User profiles are portfolio based, showing individuals' created projects, "favorite" projects, and links to user-created galleries (collections) of projects and recent "friends" on their home page. While there are small spaces for a thumb-nail picture and city/country information, projects dominate the user Profile one gets to know others through the quality of their projects or the comments they leave. Networking residues show up in comments, inclu-sion in someone's "favorites," and descriptive stats listed under a project. Stats include the number of views, number of taggers, "love-its," remixes,



downloads, and the user-curated galleries in which the project is located. For instance, the wording underneath a project may list, "639 views 5 taggers, 45 people love it, 5 remixes by 4 people, 61 downloads, in 3 galleries" (a project with these stats would be quite popular on the site with so many views!). Projects with more views, comments, and love-its may eventually make it to the front page of Scratch through the "Featured Projects," "What the Community is Loving," "What the Community is Viewing," and other sections. The front page is a prized area for Scratchers, because having one's project on the front page (or linked from the front page) means getting more views, more feedback, and more visibility. Yet even though the Scratch site is primarily project-based, project creation and social networking are deeply intertwined and the site allows for a number of forms of participation.

A number of groups and websites related to Scratch have grown up within and around the site including a user-created wiki page that was incorporated into the larger site; branch communities focusing on editing the Scratch programming language, sharing tips, or providing media (sprites/characters, backgrounds); an associated site for Scratch Educators to network and share ideas (ScratchEd.media.mit.edu); and other Scratch networks that have sprung up around the world. Within the Scratch site many groups (sometimes called "Scratch companies") have grown up that work on project creation together, whether games (e.g. Great Bear Productions) or interactive stories (e.g. Green Flower Productions, see Brennan, Valverde, Prempeh, Roque & Chung, 2011). There are also a vast number of live role playing groups on Scratch that focus on creating stories in real time with other users and using projects for bios or mini-stories of user-created characters (Roque, personal communication). Scratchers also create contests for one another, offering projects, illustrations, love-its, and friending as prizes (Nickerson & Monroy-Hernandez, 2011). There are even self-organizing groups of Scratchers who 'patrol' the site, looking out for those who leave mean or discouraging comments ("flames"). On the other hand, there are also self-organized groups who "troll" the site, purposefully being mean and trying to debunk the ethic of the site. The existence of this latter group on Scratch suggests that not all is according to the designers' wishes.

Like many social websites, Scratch project creation and commenting is not equally distributed amongst the users. Only about 29% of Scratch site participants, primarily male users, share projects. Of these, about half contribute only to a single project. Some Scratchers may limit themselves to commenting or prefer activities like live role-playing rather than project creation. Further, not all comments left on projects are positive or constructive. Many youth have been discouraged by comments that their project is not very good or complete compared with others. Brennan (2011) details how Scratchers sometimes post projects to the site whose content is too adult for a site with an average

age of 13 (for instance an animal rights project with graphic images) or create drama in order to get attention (views, love-its and comments). Finally, participation in the Scratch community should not be taken for granted; kids who use Scratch may not initially feel comfortable or interested in posting their projects on the Scratch site because it is perceived as vast and welcoming only of expert contributions (Kafai, Fields & Burke, 2010). The Scratch Team is working on new ways to make the site more welcoming to new participants, including Collab Challenges (challenges to make creative projects in groups), a welcome team, and a new version of Scratch that will allow online editing of projects.

Recommended reading:

Brennan, 2011; Brennan, Monroy-Hernández & Resnick, 2010; Kafai, Fields & Burke, 2010; Monroy-Hernández et al., 2011; Resnick et al., 2009.

Communication	**Profile**
Strings of comments on projects and curated galleries, project notes, forums, even within project communication (projects with embedded messages and gifts for others)	Portfolio page featuring the creator's own Scratch projects, their curated "favorite" projects of others, a small thumbnail image and their geographic location
Networking Residues	**Hierarchies of Access**
Comments, Remixes, "Love-its" and downloads all trace others Scratchers' appreciation of shared projects. Also friend lists.	Everything on Scratch is free and public – no comments or projects are hidden. Some experienced members are designated as community moderators.

(usually) and include images (profile pictures) and textual descriptors relating to hobbies, music, books, movies, education, work, and so on. A user profile page is often closely related to a person's sense of self and tends toward the more "real" (Salimkhan, Manago & Greenfield, 2010), though there is a great deal of flexibility in choosing what to display and to whom.

Figure 4: Example of a portfolio page in Storybird (2012)

b. Portfolios. Another common profile is the *design or project-based portfolio*, found largely on project-sharing sites such as Scratch, YouTube, Bitstrips, Storybird, and LittleBigPlanet. Portfolios showcase projects that a user has created, and they may also include a list of "favorites": selected projects by others that a user values. There may also be personal pictures, names, and locations, but the primary way users build portfolio pages on these websites is by showing off their creations and their curated selection of others' creations.

c. Avatars. Another type of profile is an *avatar*, a 2D or 3D image that users (or players) use to represent themselves in virtual worlds. Avatars can move through virtual spaces, talk, and often gesture to others. Players can change their avatars by customizing them using a range of designed options, both at the beginning of their participation in a world and later by using experience points, virtual wealth, or special clothing/accessories that they garner through their play experiences. As such, an avatar in a virtual world can

Figure 5: Avatar customization in Pixie Hollow (2007)

simultaneously signal depth of participation as well as a person's individual representational preferences. Virtual worlds like Club Penguin, Whyville, Pixie Hollow, Habbo Hotel, and many massively multiplayer online role-playing games (e.g. World of Warcraft) draw heavily on user avatars. Avatars can be used for role playing a character on some sites, but as Boellstorff (2008) found in his ethnography of Second Life, most users tend to represent their physical selves in their avatar's appearance if possible, at least in the beginning of their play.

Figure 6: Pet monster as vicarious avatar in MoshiMonsters (2009)

d. Vicarious Avatars. Related to personal avatars are *vicarious avatars:* pets and dolls that serve as primary characters in sites like Webkinz, Neopets, Moshi Monsters, and Stardoll. In these sites, the pet or doll serves as a vicarious object through which users can socialize with others. The users care for, feed, groom, and play with the pet/doll—a type of self-symbolization that is less direct than having a representational avatar. Like all avatars, vicarious avatars are customizable provided users have accumulated enough experience points or virtual wealth to purchase clothes or accessories within the site. Accumulated wealth or experience can also unlock additional "skills," which show visibly as character stats.

e. Homebase. Social networking sites can also have rooms called *homebases* that users can decorate with furniture, posters, and personal items in a similar fashion to their actual bedrooms. Many child-oriented virtual worlds, such as *Habbo Hotel* (guest rooms), *Moshi Monsters* (rooms), *Club Penguin* (igloos) and *Stardoll* (suites), provide a homebase feature for users to construct this type of personal or profile space. As with other personal profiles, greater experience on a

Figure 7: Player "Pod" in LittleBigPlanet (2011)

forum often results in having more stuff to display in one's homebase, making these profiles a representation not just of personal taste but of expertise on a site.

networking residues

Networking residues, or the traces of one's social connections to other users on a site, are another generic aspect of social networking in which users can demonstrate their affinity with one another. These residues establish and reify connections in several visible ways on SNF and are highly popular forms of participation[7]. Networking residues include posting *comments* on walls or projects; *liking* or *<3 (hearting)* posts, comments, or projects; putting projects on lists of *favorites*; associating in interest- or person-based *guilds, groups,* and *galleries;* exchanging *gifts* of objects or virtual wealth; and of course creating friend lists. These visualized connections establish links to others through "liking" a project, commenting on a person's post, associating around a common interest, or providing parts that can be displayed on

Figure 8: Networking residues on a UGC Scratch game (2012)

an avatar or in a room. They overlap with some forms of communication like visible comments on projects or posts, but make social networks visible in ways that live chat or private asynchronous in-system emails and other messages do not.

In addition to leaving social traces, networking residues often influence the visibility of comments and projects on the larger SNF. For instance, a post on Facebook that receives a comment bumps it to the top of the newsfeed, promoting renewed visibility. Posts that elicit multiple comments are repeatedly bumped up to the top, allowing more people to view and comment or like the post. Similarly, on project-based sites like Scratch and Storybird, projects that receive a large number of likes, hearts, or favorites may become featured on the home page of the site, again promoting visibility[8]. Many users solicit this positive feedback, asking people to heart or like their project for social promotion. Thus networking residues, in addition to building social networks, also play a role in one's relative prominence on a site.

hierarchies of access

Social networking forums also have different hierarchies of Access, allowing some users more kinds of participation and privileges than others. Documenting these can help illuminate different avenues to participation on a site, showing who has access to what. Some SNF differentiate access by age. Certain sites, often directed at teenagers or adults, allow unfiltered chat and messages: participants can say what they want with little concern that the system will block or remove their posts[9]. However, many sites directed at younger audiences have chat filters that block certain words or dedicated employees who monitor screen text for messages considered inappropriate for the site. Monitors will block or chastise younger users for giving out identifying information like real names (versus screen names), phone numbers, addresses, or school names. Some sites will also allow parents to select from a set of Access options for their children: free chat or chat with pre-selected phrases, words, or images like "smileys."

In addition to chat filters, some sites control the composition of one's social network or lists of friends[10] at the level of the system or website. For instance, Togetherville broached the issue of child protection by allowing kids to be friends only with the adults and

children of adults who were "friends" on their parents' Facebook accounts[11]. Hierarchies are also present when sites restrict participation by age. Some sites try to ensure that only kids under a certain age are allowed to be on the site, while others ban anyone under the age of 13 years. Other possible restrictions include parental control mechanisms that enable parents to limit their child's interactions with other players.

Finally, access can intertwine with "velvet rope" marketing strategies wherein kids who purchase a particular accessory or membership subscription are granted enhanced privileges that might include broader access to friends, items, and activities. For instance, during its first year of operations, higher levels of "freedom" were granted to kids who had purchased a Barbie Girls USB device. Similarly, in many other sites, certain products or privileges are allowed only for those who pay for access. For instance in Whyville only users who pay the $5/month fee are allowed to create and sell avatar parts, and in Club Penguin users who pay the monthly fee have access to more games and products for their avatars and homebases. Velvet rope strategies raise important questions about the role of commercialization in social networking communities.

Hackers and "nonconformists"

Among many potential ways in which kids' engagements with social networking do not always fit common preconceptions, is in cases of hacking and other forms of nonconforming online. In a 2007 report, The National School Boards Association identified a compelling linkage between subversive behaviors and creative production online, as illustrated in their discussion of "nonconformists". In their study, the term "nonconformists" was used to describe students who stepped outside of online safety rules and behavioral norms, but who were also seen as on the cutting edge of social networking. They represented 22% of all students surveyed, and 31% of the teens.

In comparison to their peers, nonconformist students exhibited notable leadership skills and were significantly heavier users when it came to SNS. They engaged in every type of social networking activity surveyed and did so more frequently than other students. A higher proportion of nonconformists actively participated in online content creation, with 50% reporting producing content (compared to 21% of other students) and 38% editing content (compared to 16% of other students). However, these same students also reported breaking more rules—posting inappropriate pictures, using inappropriate language, sharing personal information or pretending to be someone else.

These findings seem to contradict many of the dichotomies established in both the press coverage and academic discussions of kids and ICTs,

case study: hackers and "nonconformists"

wherein breaking the rules is frequently associated with detrimental outcomes and antisocial behaviors. Kids who engage in these types of activities are often assumed to lack the skills and literacies required to successfully navigate the online world and reap its many benefits. They are also assumed to be in need of more active forms of regulation, digital literacy instruction and parental monitoring. Notably, however, the NSBA (2007) study also found that its "nonconformist" students were in fact more "in touch" with their parents than their peers.

The nonconformists problematized a number of other assumptions that are oftentimes made about the relationship between IT skills and academic achievement. Although the NSBA report showed that nonconformists demonstrated an "extraordinary set of traditional and 21st century skills, including communication, creativity, collaboration and leadership skills and technology proficiency," they nonetheless tended to have lower grades than other students. This diverges significantly from previous research associating Internet access with improvements in grades and academic performance. It also highlights the deep disconnect that exists between notions of acceptable or appropriate "use" on the one hand, and ideas about measurable learning outcomes on the other.

The discussion of nonconformists has compelling links to the growing body of research examining the importance of workarounds, exploiting glitches, "geeking out" (Ito et al., 2010), cheating and transgressing (Fields & Kafai, 2010) and hacking... both as indicators of a deeper engagement with digital culture and experiences, as well as in terms of the role of these activities in kids' IT skill (and literacies) development. For instance, Donovan and Katz (2009) argue that the so-called "disruptive" and "deviant" activities that some children engage in online, such as circumventing web filters or falsifying personal information, should be seen as "a site of invention and discovery as well as resistance to various technological fetters" that helps children to better "understand and control their environments (technological or otherwise)" (p.198) through demystification and appropriation.

Recommended Reading:
Fields & Kafai, 2010; Ito et al., 2010; Donovan & Katz, 2009.

In this final section, we point the way forward to priority areas for action and research on the part of parents, researchers, lawmakers, developers, and children themselves. While there are many questions and topics worthy of addressing, four areas have emerged from our review as particularly crucial.

The first area we identify is the need for more research that focuses specifically on young children and their particular set of concerns (developmental, emotional, cultural, etc.) when it comes to online social networking. A second, related area concerns the role of parents and other family members (such as siblings) in kids' social networking practices. The third area we see as vital is the continuing investigation of kids' own preferences and social networking practices across contexts and platforms. Finally, there is a need for a more systematic consideration of the roles of the designers and managers of kids' social networking technologies and content. We provide a brief description of each area in general terms below, along with number of specific "starting points" or high priority questions that we hope will inspire future research and instigate further discussion of these emerging yet increasingly crucial issues.

younger kids, different concerns

In contrast to the mounting awareness of teens' and young adults' SNF use within popular and academic discourses, the omission of younger kids from so many of the large-scale reports reviewed in this paper points to an urgent need for research that specifically investigates the online social networking practices of kids under the age of 9 years. Children's scholars from various disciplines highlight the immense importance of age when it comes to understanding kids' technology use, literacies and social development. For example, in a seminal article on the role of social relations ("social networks" in the traditional sense of the term) within children's development, Cochran and Brassard (1979) describe the personal network as a social system influencing cognitive and social stimulation, as well as the formation of "reciprocal exchange skills." For younger children in particular, the personal social network "has as its anchoring point a parent or child" and encompasses people "outside the household who engage in activities and exchanges of an affective and/or material nature with the members of the immediate family" (p.602). This suggests that younger kids potentially bring to their social networking a quite different set of priorities and relationship concerns than older kids do.

It is also important to remember, as Cochran and Brassard remind us, that social networks have been around for far longer than social networking *sites*. As some of the literature cited above similarly demonstrates, much that happens in online social networks—the development of relationships (both strong and weak), the exploration of identity, the finding of others with common interests—also happens in kids' everyday lives. It follows then that in order to understand what kids experience in SNF and how to make the most of those experiences, we need to draw on theories of what we already know about the psychology, sociology, economy, culture, and learning of childhood (in all its stages or ages) more generally in order to develop a better understanding how these areas influence children's social networking in new online sites. Following the lead of these scholars, we call for an expanded focus on children's social networking practices that will introduce new angles and sites to investigate, along with a range of new relationships to

consider, all of which are potentially quite different from those associated with teens, or even tweens. It is time for us to change the type of questions we ask and the types of interactions we focus on as researchers. Similarly, a greater awareness that "age does matter" needs to be fostered within public discussions about kids and social networking, in order to avoid erroneously assuming that studies of teens' SNF use can be extrapolated onto younger children.

Starting Points

- What kinds of social networking forums are children inhabiting and how? Who is going on SNF, to which ones, and for what purposes?
- What kinds of relationships are children pursuing in these sites, with family members, friends, relatives, and online acquaintances?
- What kinds of ways are children participating in different kinds of SNF?
- How is children's participation in social networking forums different from teenagers and young adults' participation

parental (and other family) involvement

Parents and other family members are involved in kids' online (and offline) social networking in many ways. Research on Internet use in the home has consistently demonstrated that family dynamics play a crucial role in children's (and parents'!) activities and experiences online (Shade et al., 2007; Livingstone et al., 2011). Just as questions about "co-viewing," co-reading and intergenerational play have become increasingly central within studies of children's engagement with media, (e-)books and digital gaming (Takeuchi & Stevens, 2011; Voida & Greenberg, 2012), research in this area needs to start asking questions about the range of ways that families jointly use, discuss and collaborate in their online social networking as well. For instance, kids with families extended across a country or across multiple countries (especially kids who have immigrated) use online social networking to maintain and build relationships with extended family (Ünlüsoy, A. & de Haan, M., 2011), to develop languages and learn the cultures of their countries of origin (Lam & Warriner, 2012). Increased investigation into the role of siblings within kids' online social networking is also particularly necessary if we are to understand the full range of contexts within with these activities unfold (Howe et al., 1998; Howe et al., 2005; Howe & Bruno, 2010). Child development research emphasizes the significance of the ways in which children develop an understanding of the social world around them through social interactions with friends, family members and caregivers with whom they have close relationships (Carpendale & Lewis, 2004). Yet, although the sibling relationship can afford particularly rich and central opportunities for children to articulate these understandings (Mendelson et al., 1994; Dunn, 2002; Howe et al., 2005), it remains a surprisingly under-examined aspect of children's leisure, technology use and social learning. There are thus multiple dimensions of parental and family involvement in kids' social networking that have yet to be fully explored.

One crucial area in which the online and offline intertwine within kids' SNF use is through parental limits, rules, and restrictions. Families vary significantly in what types and how many rules they have about SNF use as well as how strict they are about those rules (Takeuchi, 2011). There can also be a significant disconnect between parents' and kids' perceptions of whether or not there are rules about SNF, as well as how well rules are enforced or obeyed. This appears to be particularly the case among older kids, namely teens. As Ito, et al. (2011) describe, "Simple prohibitions, technical barriers, or time limits on use are blunt instruments; youth perceive them as raw and ill-informed exercises of power" (p.343). Kids are also often subject to rules and restrictions imposed by adults who mediate kids' SNF use in other areas like the time they spend in school. The National School Boards Association study (2007) found that "More than half of all districts (52%) specifically prohibit (p.4) any use of social networking sites in school" (p.5). Somewhat paradoxically, there is a significant parallel amount of "officially sanctioned, educationally packaged social networking occurring in schools" as well (p.5). Previous studies of Internet use in library settings, including Sandvig (2003), have shown evidence of rules (and rule breaking) in these contexts, a fact that prompts us to recommend that future research in this area should map the various rules and restrictions that kids encounter as they try to access SNF in different contexts as well as how these guidelines overlap or contradict.

Starting Points

- What kinds of social networking forums are children inhabiting and how? Who is going on SNF, to which ones, and for what purposes?
- What kinds of relationships are children pursuing in these sites, with family members, friends, relatives, and online acquaintances?
- What kinds of ways are children participating in different kinds of SNF?
- How is children's participation in social networking forums different from teenagers and young adults' participation?

children's own practices and preferences

Throughout this paper, we have argued that younger children have been excluded from much of the research in this area in large part because of a tendency toward overly narrow, highly teen-centric definitions of what online social networking is. In expanding the discussion to better account for the many ways younger children engage in social networking within non-traditional SNF (such as virtual worlds and the networks found on web-enabled consoles), we sought to articulate a platform-agnostic, child-inclusive alternative. A central aspect of this argument is the notion that children's own practices and preferences need to be better accounted for in future discussions and research. In addition to considering the specific needs and concerns that younger children might bring to their online social networking experience (as described in 3.1), there is a need for more systematic attention on the specific places and practices in which kids are choosing to engage. A more child-centric approach to these issues

would assist enormously in avoiding the types of assumptions and omissions identified above. For instance, rather than focus solely on younger children's recent "arrival" on Facebook or the introduction of child-specific social networking sites like Togetherville, a child-centric approach would consider these developments within a broader context of the practices and platforms kids are already engaged in—including non-traditional SNF and long-standing practices of lying about one's age in order to access age restricted games and content. Such an approach facilitates identification of important trends and continuities within children's culture—such as highlighting the contradictory lessons kids are often taught about online privacy, e.g. never give your real name or age—and helps to ground emerging findings within existing and highly relevant, if oftentimes overlooked, research and theories.

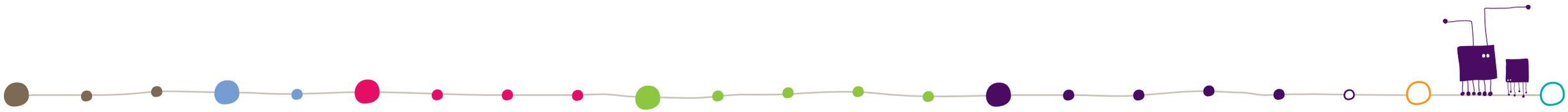
In a similar vein, it is important that we avoid excluding marginalized users and non-users from the discussion. As we seek to better understand how kids are using SNF and why, we must also consider who isn't using SNF and who is using it for different purposes or in ways that can't be measured as easily as others (e.g. "lurkers" who do not leave networking residues). Research into demographic differences and inequities is still required, particularly through studies designed from the outset to provide a more focused and deeper examination of the relationships between race, ethnicity, class, age, participation, quality, and quantity of Access points. This is especially important given that the existing literature appears to contain fragmented and occasionally conflicting data about how these relationships extend beyond basic questions of Access and usage rates. For instance, in a study of online content creation and sharing among US teens, Lenhart et al. (2010) found "no differences in sharing content by race, ethnicity, family income, or parent's education level" (p.23), either in 2006 or in 2009. In contrast, Hargittai and Walejko (2008) found that young adults whose parents had higher levels of education were more likely to create and share content online, while young adult men were significantly more likely to share creative content online than young women. These conflicting findings highlight the need for more a much more consistent incorporation of social equity questions within future research in this area.

Starting Points

- How do kids describe their social experiences online, where, when, and within which contexts do these occur?
- Which SNF, sites, games, tools, technologies, and/or platforms do kids prefer to use for connecting and networking with their peers? With family? With strangers?
- Among children participating in SNF, who is gaining the most out of participation?
- Among children who aren't participating in SNF, what factors are most significant in determining non-use (decision, family rules, lack of Access or skills, etc.)?

design and management of child-specific SNF

As the number of SNF designed for and used by younger children continues to increase, there is a growing need for more research into the



practices of the adults who design, manage and regulate children's social networking, including identification of emerging standards, policies and trends. A complex ecology of influences affect the development of SNF and various audience responses to them, including cultural meanings, social interconnections (family, friends, school, communities), politics and economics (Lindtner & Dourish, 2011). In addition to helping shape our discussions and understandings of kids' relationships to new technologies, these factors also play a significant role within design decisions, as well as in the strategies SNF operators devise to manage their users. Here, the word "management" is used in Taylor's (2006) sense of the term to describe the policies, tools, and methods that game (or in this case, SNF) operators utilize to moderate users behaviors and interactions. A key example would be deciding to forbid the use of certain profane words within an SNF. The subsequent actions, communications, and consequences that the operators would need to enact in order to ensure that this rule is respected are examples of management strategies.

When it comes to SNF designed for or used by young children, a crucial aspect driving both design and management decisions is the Children's Online Privacy Protection Act (COPPA). Currently, there appears to be a renewed interest in privacy, surveillance and data-mining emerging within both academic and public discourses. This is most likely linked to the growing number of SNF that are now available for children under the age of 13 years, reports that increasing numbers of kids (particularly younger kids) are using SNF, as well as the FTC's recent announcement that it is once again revisiting COPPA. Site developers negotiate child-specific legal policies such as COPPA in ways that clearly affect design and management (Chung & Grimes, 2005), yet we know relatively little about how these negotiations occur or what trade-offs are involved.

Expanding upon this, we need to connect industry/developer perspectives with parents' and children's perspectives on questions of privacy, consent and freedom of speech, authorship and transfer of ownership, as well as the idea of children having special needs and vulnerabilities which demand a particular balance between safety and rights—something that has not yet been adequately addressed. For instance, many sites for children employ chat filters, limit chat words, or allow parents to limit their children's chat to a set of words or icons. Other sites have community moderators (both employees and highly experienced volunteer participants) on the lookout for inappropriate disclosure of information or offensive language. While well intentioned, these features are certainly not without consequence to children's abilities to express themselves. A better understanding of how privacy requirements are weighed against children's right to freedom of speech is but one potential benefit of a deeper investigation into SNF design and management. Further, since many sites designed for older youth and adults attract users of all ages, such an understanding would open up opportunities for exploring developers' and community moderators' different strategies for dealing with diverse audiences and responding to legal concerns about who is on their sites.

Another understudied area is the role of technological design in supporting certain expectations about what users will divulge and what they will keep private. Livingstone (2008) argues in her study of European kids that while teenagers may desire subtle gradation in levels of intimacy rather than a desire for vast publicity or exhibitionism, "they struggle in terms of Internet literacy, impeded in turn by the affordances of the social networking sites" (p. 12). Similar findings emerge out of an Australian study of high school students (De Souza & Dick, 2009) which linked kids' information disclosure practice to website interface design, along with peer pressure and signaling (i.e. identity construction) factors. The teens in their study described feeling driven to fill in the default information fields that were already present within the site's design (in this case, MySpace), such as the "about me" field or "favorite music" field (p.259). These findings showcase how hierarchies of Access allow certain categories of users (such as Friends) to see more or less personal information[12] (see, for example, boyd & Marwick, 2011). Thus more extensive research is needed to understand the design choices in SNF for children specifically and to empirically verify how children and other stakeholders respond to those design affordances.

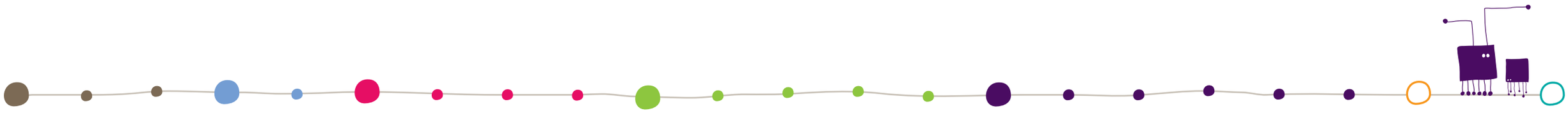
Starting Points

- How do design choices function as embedded forms of regulation (e.g. Dictionary Chat to limit children's online speech, categories to fill in profiles, etc.)?
- What are the standards of practice in addressing policy requirements, public concerns, and children's cultural rights?
- How do children respond to different site designs in interaction with influences of family, friends, schools, and other community influences?
- What kinds of similarities and differences are there between the development of tools and sites for younger children and those for teens and adults?

conclusion

In this paper, we put forth a challenge to those engaged in the discussion (and decision making) regarding kids and social networking to broaden the scope about *who* and *what* we talk about when we talk about kids and SNF. In order to accomplish this, the discussion needs to be expanded to include a *greater age range* of child users and a *broader definition* of what constitutes as social networking—both in terms of the *types of sites and platforms* included, as well as the *types of activities* identified as social, as pertinent, and as meaningful.

As one possible entry point, we have proposed an alternative approach to defining and delineating the range of sites, tools, spaces, and activities considered relevant to the discussion. Instead of repeating or repurposing the commonly used "social network site," we suggest that the term *social networking forums*, or *SNF,* provides a more immediately diverse, practice-focused and above all, child-inclusive way to begin broadening the discussion. Furthermore, in Part III, we delineated a new classification system that can be used to guide our understanding and identification of social networking forums within future discussions and studies.

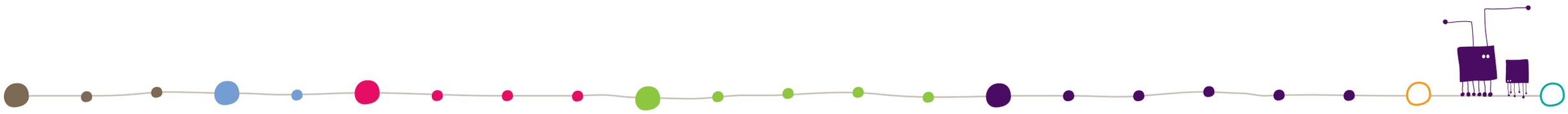


While this classification system must be seen as a starting point only (one that is meant to be revised and added to as new research unfolds), it is also meant to be highly flexible—in acknowledgement of the ever-changing nature of kids' digital technologies. Thus, the categories we have outlined should be understood as adaptable and unfixed—rather than point to specific design features or practices. They seek to describe recognizably generic, structural properties that have thus far emerged as common elements in the SNF that kids currently utilize.

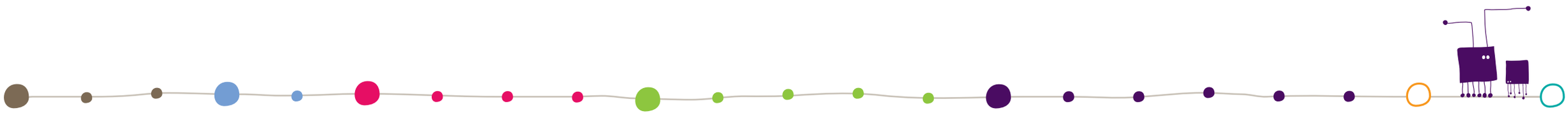
We need a useful vocabulary for identifying and comparing SNF. Our working model definition of SNF as a particular online forum or web-enabled platform containing technological affordances that enable *forms of communication* between users, the creation of *personal profiles*, and the production of *networking residues* while enacting *hierarchies of Access* is an important first step in constructively expanding the discourse. This move also enables us to describe how the underlying "social-ness" of SNF is not just something that emerges out of user-to-user interactions, but is also something structured by the materiality of technological designs. This orientation also supports a more systematic consideration of online social networking as a technologically-mediated practice.

If the key takeaway of this report is that more research is now required—especially with kids under 9 years old—to build a truly in-depth and comprehensive understanding of kids and online social networking, then the four areas identified in Part IV are vital starting points for this research. In delineating these points, we hope to inspire future studies that consider how age matters immensely when it comes to younger users. Needs, skills, habits, preferences, and contexts vary wildly among and within different age groups, and it is crucial that these variations be better accounted for as we move forward. Kids' interactions with SNF must also be understood as unfolding within larger socio-cultural contexts, primarily within the family. Thus, there is a need for additional research that pays specific attention to parental, sibling and other family involvement in mediating and negotiating kids' SNF use.

As a key intervention, we hope this paper will initiate a wider, more systematic consideration of virtual worlds, networked games, and project-sharing sites as increasingly meaningful forums for online social networking among kids. Since these are the sites that younger children gravitate to with the highest frequency and greatest enthusiasm, it is imperative that they be considered in the discussion. This is a crucial step in establishing a better-informed, more grounded perspective of kids' online experiences, something that is also echoed in our call for studies that use kids' own practices and preferences as the basis of research. In a similar vein, the need for concerted analysis of the design and management of child-specific SNF, as well as of any sites and tools that kids are found to use in significant numbers, will enable a much deeper understanding of the economic, regulatory, and technological dimensions of kids' online social networking.



Lastly, a cautionary note is required in moving forward in the direction of more substantive research on young SNF participants. Although it was beyond the scope of the current paper, questions about social equity issues and digital and participation divides are extremely important and require ongoing consideration. Grouping young people into homogenous categories such as “kids” or “children” can obscure important demographic differences in access, usage, and adoption rates among this population. Moreover, researchers such as Livingstone et al. (2011) warn that information technology use varies significantly by country and cultural context as well, particularly when it comes to younger children. Further, access to high-speed Internet connections likely influences kids’ participation in SNF, as does access to different software and hardware platforms. In conclusion, then, any future research in this area, no matter the specific focus or purpose, must also endeavor to examine those kids who are not social networking, who do not have access to all of the necessary tools, or who experience one or more of the various participation divides identified by scholars in this area.



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Endnotes

1 We use the term "kids" to generally describe people aged 18 or under, following the use of this term by Ito et al (2010) because it is a way that people of that age often refer to themselves, and because for our purposes, terms like "children" and "youth" are too age limiting. When we speak of particular ages, we refer to "children" as kids 12 and under, "tweens" more specifically between ages 9-12, "teens" as kids 13-19, and adolescents more generally as kids aged 12-18. When reporting statistics we try to list the specific ages referenced in the individual reports as much as possible.

2 This shift coincides, they argue, with important developmental and physiological changes children undergo at this stage, including a honing of fine-motor skills, a sharpening of logic reasoning and problem-solving skills, as well as a strengthening of peer relationships and experiences (Gutnick et al., 2011).

3 It has been notably argued that the exclusion of younger users from many social networking sites is not arbitrary, but rather functions as a tool for demonstrating compliance to federal privacy regulations (namely, COPPA compliance).

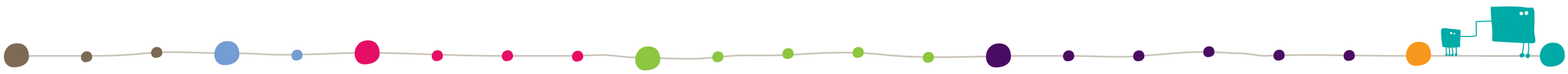
4 As Hassani (2006) describes, researchers propose several different ways in which different conditions and contexts of use can influence participation levels and depth of engagement. For instance, Dimaggio et al. (2004) argue that patterns of "digital inequality," are largely shaped by the following five conditions: (1) the technology itself (connection speed, age and capabilities of computer, etc.); (2) degree of autonomy users (freedom and time users enjoy); (3) level of skill; (4) social support (i.e. "someone to go to for help"); and (5) the particular activities and purposes the user pursues online. Hargittai (2003b) adds a sixth condition to the list, that of (6) experience (the user's own past experience and familiarity with the technology).

5 These gender divides in video gaming extend to children 0-8 as reported recently by Common Sense Media (2011) where "boys are more likely to have ever played a console video game than girls are (56% vs. 46%), to have a video game player in their bedroom (14% vs. 7%), and to play console video games every day (14% vs. 5%)" (p. 12).

6 Played on dedicated gaming systems, such as the Nintendo Wii, Sony PlayStation 3, or Microsoft Xbox 360.

7 Among teens aged 12-17, posting comments on photos, "walls," and pages is quite popular—over 80% of teens engage in these activities (Lenhart et al., 2010).

8 Another way to achieve visibility is to win a contest, but we differentiate networking residues from voting in contests (a ubiquitous practice in many SNS) because voting is anonymous and does not necessarily leave a trace of the user who left the vote.



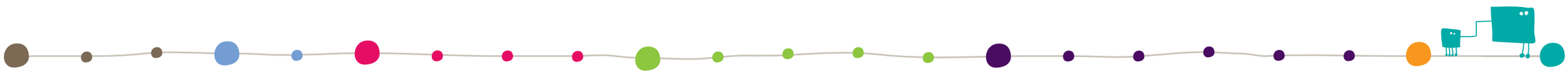
Endnotes

9 Notably, there are exceptions to this in even the sites that promote the most freedom of expression. For instance, Facebook has banned certain types of photos and occasionally groups.

10 This relates to the third point of boyd and Ellison's (2007) definition of social networks (i.e., the ability to view others' connections), which we expand to include who can see and control lists of friends.

11 Within a number of child-specific virtual worlds, becoming friends is a crucial part of social interaction. As Lastowka (2010) describes, "users can toggle a switch to establish a relationship coded as 'friendship' by the software. Avatars are given additional information about their friends and are usually able to engage in chat despite virtual distance. In some virtual worlds, friendship relationships are made strategically important by the software" (p.150). In this way, closer access becomes the gateway to more direct communication as well as gaining other special abilities.

12 Research in this area might also compare interventionist management techniques with rules and restrictions automatically enacted by system and site designs.



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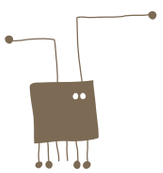

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