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Guest Editorial

Virtual worlds in development: Implications of social networking sites

Since its introduction, the Internet has not only become very diffuse but has also been rapidly changing and evolving at the same time. Today it has become an inescapable part of our lives and nowhere is this more evident than among young people. Technology is an integral part of their lives and most of them have grown up with computers, take the Internet for granted, and have no conception of life without Google, e-mail, or text messaging. As developmental psychologists, it is important for us to study their virtual worlds to understand the implications of this newest context for development. Although young people use the Internet both for instrumental and communication purposes, the latter are particularly salient in their lives (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; Greenfield, Gross, Subrahmanyam, Suzuki, & Tynes, 2006; Greenfield & Yan, 2006; Subrahmanyam & Greenfield, 2008; Yan & Greenfield, 2006). In the past couple of years alone, we have seen young people flock to various communication applications such as chat rooms, e-mail, instant messaging, blogs, and most recently social networking sites. Social networking sites such as MySpace and Facebook, have over 100 million users between them, many of whom are adolescents and emerging adults.

In this special issue, we examine the developmental implications of young people's use of online social networking sites. According to [boyd and Ellison \(2007, p. 211\)](#) social networking sites are “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.” Social networking sites are very versatile and afford users the capabilities of earlier applications (e.g., instant messaging and blogs), such as exchanging private messages and uploading user generated content (e.g., blogs, pictures, and videos), as well as many new ones such as finding old friends and making new friends, having networks of friends that are “public,” and viewing “news feeds” or “activity updates” that detail what is happening in the lives of the people in one's online network. Young people are living life online and in public via these sites. Given these structural features of social networking sites, the communication opportunities within them are simply boundless, presenting many challenges and interesting questions for developmentalists.

For researchers who study young people's use of the Internet, one of the biggest challenges is a constantly changing virtual world. Online communication forms are in a state of flux, and many operate like a fad. By the time researchers become aware of a popular online application or site, identify the research issues, design a well thought-out study, and get IRB approval, the population of interest has moved on to the next new application. If research on young people's online communication is to be relevant long after the life of the communication form itself, researchers must study them in the context of relatively unchanging, core developmental issues. This is the theoretical approach we have taken in our research program at the Children's Digital Media Center UCLA/CSULA (Greenfield et al., 2006; Subrahmanyam, Greenfield, & Tynes, 2004; Subrahmanyam, Smahel, & Greenfield, 2006) and the approach that guided our selection of articles for this special issue of the *Journal of Applied Developmental Psychology*. Our reasoning is that because users are creating and co-creating their online environments through processes of social interaction, one would also expect to see them constructing the same developmental issues online as they do in their offline contexts. Research from our own center as well as from other laboratories confirms that important adolescent issues such as sexuality, identity, peer relations, partner selection, and self-worth are played out in a variety of online contexts frequented by teens such as chat rooms (Smahel & Subrahmanyam, 2007; Subrahmanyam et al., 2006; Tynes, Reynolds, & Greenfield, 2004), instant messaging (Boneva et al., 2006; Gross, Juvonen, & Gable, 2002), bulletin boards (Suzuki & Calzo, 2004; Whitlock, Powers, & Eckenrode, 2006), and weblogs (Huffaker & Calvert, 2005; Subrahmanyam, Garcia, Harsono, Li, & Lipana, in press). Although some of the individual online contexts (e.g., chat rooms) may not be that popular any more, the studies together show how young people are constructing important developmental processes online, in some ways transforming them and in other ways leaving them unchanged.

Our goal in putting together this issue was to assemble a collection of studies using such a developmental approach but concentrating only on social networking sites, given the extreme power and current popularity of these sites. All of the studies examine young people's use of social networking sites, but, more significantly, connect their use to important developmental processes of adolescence and emerging adulthood, such as the formation and maintenance of friendships and other relationships (Steinfeld, Ellison, & Lampe, 2008-this issue; Subrahmanyam, Reich, Waechter, & Espinoza, 2008-this issue) or self-presentation

and identity construction (Manago, Graham, Greenfield, & Salimkhan, 2008–this issue). The final paper in this special issue focuses on adolescents' use of social networking sites from the parents' point of view, addressing parents' knowledge of their adolescents' use of MySpace and the impact of parenting style on adolescent Internet use (Rosen, Cheever, & Carrier, 2008–this issue). This special issue also includes a book review (Yan, 2008–this issue). Because research on this topic is in its infancy and because parents are very much in need of understanding their children's life online, Yan reviews two parenting books on social networking sites – one written by an academic researcher (Rosen, 2007) and one by a veteran educator (Kelsey, 2007). Currently, parents have few resources to turn to, and it is important to evaluate the quality of information that is available to them. Given the applied developmental mission of the journal, such a review is appropriate. In addition, Yan assesses the relevance of the book for researchers interested in studying young people's virtual lives.

Although we wanted to include research on a wide variety of ages, the current limitations of the field yielded a skewed distribution of developmental periods. Three of the papers (Manago et al., 2008–this issue; Steinfield et al., 2008–this issue; and Subrahmanyam et al., 2008–this issue) focus on emerging adults, while Rosen et al.'s (2008–this issue) paper focuses on preteens, teens, and their parents. It is hoped that this collection will serve as an impetus for more researchers to study children's and adolescents' use of social networking sites. More broadly, children are beginning to use the Internet at younger and younger ages (Wartella, Vandewater, & Rideout, 2005). However, there is a serious dearth of research on the developmental implications of younger children's participation in virtual worlds such as Whyville and Webkinz, and this is a fertile area for future research.

The papers in this collection are methodologically diverse and address some of the methodological challenges inherent to studying behavior in online environments. Although analyzing online environments (e.g., chat rooms and bulletin boards) can yield rich dividends (e.g., Smahel & Subrahmanyam, 2007; Subrahmanyam et al., 2006; Whitlock et al., 2006), researchers are confronted with the problem of self-declared age and sex when the contexts are anonymous; this is also an issue in anonymous online surveys. Yet from a developmental perspective, age and sex are important pieces of information and must be accurate to lead to lasting insights about developmental trends and differences. Each study in this collection has dealt with this issue in a new and creative way. For example, the paper by Manago et al. uses the novel approach of same-sex college-age focus groups to find out, through participants' own voices, how they present themselves and construct their identities on MySpace.

Another way of ensuring that age and sex information is valid is to use surveys with participants where basic age and sex information is known. The remaining three studies have accomplished this in different ways. In the Subrahmanyam et al. study, college students came to the laboratory and completed one questionnaire; they were then sent links to the online survey via e-mail and were asked to keep their social networking profile open while completing it. The Steinfield et al. study used a university e-mail list to recruit college students for an online survey in a geographically bounded community, the university campus. Students then took the survey online and a sub-group was sampled twice, a year apart.

Each of these studies combined sampling in a way that ensured the validity of basic age and sex information with the convenience and ecological validity of online surveys. One ecological advantage of online surveys is that participants can log into their online profiles to refresh their memories, ensuring more accurate answers about what they do and who they interact with online. On the other hand, one may lose people who are less comfortable online, thus getting a biased picture of online behavior. But this is less important when one wants to know what online users are doing, thinking, and feeling.

Rosen et al. (2008–this issue) also combined real-world knowledge of participants with online responding, recruiting a unique sample of great developmental importance: parent–child pairs. For that study, a large group of student researchers recruited parent–child pairs known offline and provided them with links to a web site, where they could complete the survey anonymously.

The articles in this special issue are a first step toward studying the developmental implications of young people's use of social networking sites. Note especially that the longitudinal nature of Steinfield et al.'s data is a major methodological contribution and allows for inferences about the direction of influence between use of Facebook, a major social networking site for college students, and a measure of well-being.

Together the studies represent new and creative ways of dealing with the methodological challenges inherent to studying online behavior. It is hoped that this is only a beginning and that these studies will serve to stimulate more research on this important issue. As the sites inevitably change, so will adolescents' and emerging adults' interactions on them, and it is important for research efforts to keep up with the changes so we can come to a better understanding of the implications of virtual worlds for development.

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