

Chapter 2

Connecting Online Behavior to Adolescent Development: A Theoretical Framework

Wedge between childhood and emerging adulthood, adolescence is a period of tremendous change – biological, psychological, and social. In fact, Stanley Hall (1904) characterized it as a period of “storm and stress” and this belief remains strong in popular culture and in the minds of many parents. Although researchers have come to recognize that adolescence is not always a turbulent period (Steinberg, 2008), the storm and stress view, for better or worse, has come to frame much of the discourse about the role of interactive technologies in adolescent life. Digital worlds have become a part of adolescent life, and some see it as a threat or obstacle to an already difficult transition. Our goal in this book is to examine the role of digital media in adolescent development and this chapter presents the developmental approach that we will use to frame our discussion. The first part of the chapter will briefly review what developmental psychology has already taught us about adolescence – the challenges and the factors, particularly contextual ones that affect adolescent development. The second part of the chapter examines the role of digital media during adolescence and presents our theoretical position that adolescents’ online and offline worlds are psychologically connected.

Lessons from Developmental Psychology

The psychologist John P. Hill in his now classic 1983 paper laid out a very influential research agenda for adolescence. In it, he argued that in order to understand adolescent development, researchers had to use a three-pronged approach, one which emphasized the fundamental changes, contexts, and psychosocial tasks of adolescence (Hill, 1983; Steinberg, 2008). We draw on his model of adolescence as we try to understand adolescents’ digital lives.

Changes During Adolescence

Perhaps the most distinctive aspects of adolescence are the inevitable biological, cognitive, and social changes that adolescents experience, regardless of which

particular city, town, or country they live in (Steinberg, 2008). The biological changes of puberty include rapid changes in height and weight as well as in sexual maturation leading ultimately to adult body size and capabilities, including sexual reproduction (Tanner, 1978). Adolescence is also marked by tremendous cognitive advances, including the ability to think abstractly and to think and reason about hypothetical situations (Inhelder & Piaget, 1999; Steinberg, 2008). Compared to children, adolescents engage in more advanced and sophisticated thinking, but some aspects of cognitive functioning are still developing, especially those governed by the pre-frontal cortex of the brain. Recent research indicates that these areas of the brain, particularly in parts of the frontal lobe, are still developing during adolescence and are not completely developed until the early 20's or so (Sowell, Thompson, Holmes, Jernigan, & Toga, 1999; Sowell, Thompson, Tessner, & Toga, 2001). Finally, there are changes in the individual's social status, in his or her rights, responsibilities, and privileges at this time of life. In most western societies, young people are given greater freedom, are able to drive, drop out of school, take up a job, join the army, start dating, be sexually active, and even get married (Steinberg, 2008).

Developmental Tasks and Issues

Hill also pointed out the need for more research on the psychosocial issues of adolescence including, attachment, autonomy, sexuality, intimacy, achievement, and identity. He argued that research on these issues should take into account the biological and cognitive changes, as well as changes in social definition that are part of adolescence. Developmental psychologists refer to challenges or expectations that a culture has for individuals in different life phases as developmental tasks. According to Havighurst (Havighurst, 1972), "a developmental task is a task that arises at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks." He listed the developmental tasks faced by individuals in different life stages from infancy to middle adulthood and later maturity, noting that the particular tasks could vary depending on where the individual lived. According to Havighurst, American adolescents in the 1970s had to master the following developmental tasks:

1. Achieving new and more mature relations with age-mates of both sexes – As their bodies change physically and sexually with the onset of puberty, adolescents have to learn to establish new relations with their age mates, both boys and girls. Social activities and social experimentation become pre-eminent and help them learn adult social skills leading to good social adjustment throughout their lives.
2. Achieving a masculine or feminine social role – Puberty highlights the physical differences between the sexes and adolescents have to accept and adopt societal

ideas about the approved social roles for males and females. Havighurst added that the roles themselves are changing and that adolescents, particularly girls, have more choices in front of them than ever before.

3. Accepting one's physique and using the body effectively – Changes in the body and changes in interests and attitudes go together with adolescent sexual maturation. The adolescent thus has to learn to accept as well as to protect his or her body.
4. Achieving emotional independence from parents and other adults – The adolescents' emotional ties to his or her parents changes and he/she has to become independent and autonomous from them, while at the same time developing affection for them and respect for older adults.
5. Preparing for marriage and family life – Adolescents have to develop a positive attitude toward family life; according to Havighurst, girls also had to become knowledgeable about home management and child rearing.
6. Preparing for an economic career – The adolescent has to plan and prepare for an occupation that will enable him or her to make a living and become economically independent. In our complex modern society, with its emphasis on skilled labor, most occupations require considerable preparation. Consequently, for young people, this task takes precedence over the other tasks (e.g., finding a romantic partner).
7. Acquiring a set of values and an ethical system as a guide to behavior or developing an ideology – The adolescent has to construct a coherent socio-politico-ethical ideology that will consistently orient him or her over time and space. This task is accomplished via discussions involving moral questions, reflections about the rational aspects of religion and ethics, and by appealing to moral principles when trying to solve social problems.
8. Desiring and achieving socially responsible behavior – The adolescent has to become a participating and responsible member of the social groups that he/she belongs to, such as the community and larger society. This requires that the adolescent sacrifice for the greater good and develop an ideology that is consistent with the values of his/her society.

Although adolescence has changed significantly since the 1970s and 1980s when Havighurst first wrote about these issues, most are relevant even today. Only tasks five (preparing for marriage and family life) and six (preparing for an economic career) are less central for today's adolescents. Today, most adolescents are not actively preparing for marriage and family life as in earlier times. For instance high school courses on home economics, when offered, are now often called family and consumer sciences, focus more on vocational training and making a living (Trickey, 2003), and are not exclusively for girls. Similarly, although it is now rare for adolescent dating to result in marriage and a family as it did for previous generations of adolescents (Gordon & Miller, 1984), it prepares young people for future intimate relations. With regard to task 6, young people have to spend much more time in formal education settings to get ready for future work roles (Steinberg, 2008); consequently although most adolescents today are still in high school they are not

actively preparing for an economic career, in the sense that young people did 50 years ago. Still although many of today's adolescents may not be actively preparing for an economic career, they are spending more time in formal schooling, an investment that is ultimately relevant to their future career and ability to make a living.

These trends have led psychologist Jeffrey Arnett (2000, 2004) to coin the term *emerging adulthood* to describe the transitional period in human development between late adolescence and young adulthood in cultural contexts, such as in industrialized societies, where marriage and parenthood are delayed until the late twenties or beyond. According to Arnett, emerging adulthood is a "time of exploration and instability, a self-focused age, and an age of possibilities" (p. 21). Two important developmental challenges faced by individuals in this life phase are those of identity achievement and the development of intimacy. While Erikson regarded identity as a quintessentially adolescent crisis (Erikson, 1959; Kroger, 2003), we now know that emerging adults are still grappling with some aspects of their identities, such as their vocational/career, religious, and ethnic identities (Côté, 2006).

Emerging adults also have to establish intimacy via interconnections with friends, romantic partners, as well as relatives and family members. Although there is some overlap in the challenges faced by adolescents and emerging adults, the two are nonetheless distinct developmental periods with their own unique challenges and opportunities and our focus in this book is on adolescents. We operationalized adolescence as including middle and high school students up to 18 years of age and emerging adulthood as including college students, 18 years and older. Although Arnett did not specify that high school graduation signaled the end of adolescence or that the college years were synonymous with emerging adulthood, we adopted this definition since the college years in the USA and other industrialized nations offer individuals with the independence, opportunities for exploration, and self-directed focus that he envisioned for emerging adults. Consequently, we mostly drew from research on adolescents in middle and high school. Where this was not possible and we based our discussion on research with college students, we have pointed this out to the reader. In the next sub-section, we briefly describe the three adolescent developmental challenges around which the first part of this book is organized – adjusting to one's developing sexuality, formulating a coherent identity, and establishing intimate relations with peers and romantic partners (Brown, 2004; Erikson, 1950; Weinstein & Rosen, 1991).

Sexuality. Adolescents have to adjust to their developing sexuality, in particular their increased sexual drive and interest in sex and spend a lot of time using sex slang, talking about sex, exchanging sexual jokes and sex-oriented literature (Weinstein & Rosen, 1991). They are also sexually active (Mosher, Chandra, & Jones, 2005; Savin-Williams & Diamond, 2004) and the rate of sexual activity increases with age (Cubbin, Santelli, Brindis, & Braveman, 2005). Adolescents' developing sexuality and sexual behavior leads them to initiate and engage in romantic relationships (Teare, Garrett, Coughlin, & Shanahan, 1995), and these relationships come to play a central role in their lives (Furman, 2002). Their romantic relationships are a source of support to them and also contribute to other aspects of

their development such as their identity, sexuality, peer and family relationships, as well as scholastic achievement and career paths (Furman & Shaffer, 2003; Furman, 2002). Romantic relationships are also a source of concern and stress for adolescents as evidenced by the finding that more than half of all the calls to a national telephone hotline dealt with relationship issues (Teare et al., 1995).

Identity. A second task facing adolescents is that of constructing a coherent and stable identity, which includes gender, sexual, moral, political, religious, and vocational components (Erikson, 1959; Kroger, 2003). A coherent sense of self is one in which the individual is comfortable with who and where the self is headed (Erikson, 1959, 1968) and includes both a “conscious sense of individual uniqueness. As well as an unconscious striving for continuity of experience” (Kroger, 2003, p. 206). Identity exploration and commitment are important and even necessary for healthy identity development. Empirical research suggests that the search for identity begins during adolescence, but a coherent identity is typically not established until late adolescence and emerging adulthood (Nurmi, Lerner, & Steinberg, 2004; Reis & Youniss, 2004; Waterman, 1999).

Interconnections and intimacy. Peers and then romantic partners become increasingly important during adolescence (Furman, Brown, & Feiring, 1999) and developing intimate relationships with them is the third important task for adolescents. These relationships should be viewed in the context of adolescents’ developing autonomy and independence and distance from their families (Brown, 2004; Ryan, 2001). Research has documented adolescents’ need for close friends (Pombeni, Kirchler, & Palmonari, 1990) and their desire for emotional fulfillment, intimacy, and companionship from friends and romantic partners (Connolly, Furman, & Konarski, 2000; Larson & Richards, 1991). Over the course of adolescence, these relationships acquire the hallmarks of intimacy as they come to involve openness, honesty, and self-disclosure (Brown, 2004). Self-disclosure to friends increases during early and middle adolescence and eventually adolescents self-disclose more to their friends than their parents (Buhrmester & Prager, 1995).

The Role of the Context in Adolescent Development

Hill also stressed the importance of studying the effects of adolescents’ social networks, such as their peers, families, schools, churches, and job settings on their behavior and development. Indeed, research over the past few decades has shown that contexts such as peers, families, and schools mediate how youth cope with the developmental issues before them. Of particular interest to us is the role of peers as adolescents’ cope with the developmental challenges that they face. For example, research suggests that when making decisions about sexual behavior, adolescents turn to their peers for support and peer communication is an important source of information about sex (Kallen, Stephenson, & Doughty, 1983; Ward, 2004). Romantic relationships are also a major topic of adolescent conversation (Furman & Shaffer, 2003). At least for heterosexual adolescents, peers play an

important role in the development of romantic relationships as their initial interactions with the opposite sex occur in a group context (Furman, 2002). Similarly, peers also play an important role in the task of identity formulation. In addition to sex and romance, other popular topics in adolescent peer conversations include appearance (Giblin, 2004) and the self (Johnson & Aries, 1983), issues important to identity construction. At a broader level, adolescents are also part of crowds (e.g., “jocks”, “geeks”, “drammies”, etc), which involve “identification of adolescents who share a similar image or reputation among peers” (Brown, 2004). According to Steinberg (Steinberg, 2008), membership in crowds is based on reputation and stereotype and so they play a role in adolescents’ sense of identity. Thus, we see that contexts such as peers are important for adolescent development.

Media as a context of development. Since Hill set out the research agenda for adolescence in the 1980s, media have become an important part of young people’s lives. In addition, in the last decade or so, the media landscape surrounding young people has itself changed rapidly and dramatically. Although mass media are not an organization or social network that adolescents’ belong to, they have become an integral part of young people’s lives.

What can we say about the role of media in adolescent development? First, let us consider older media forms such as television and print. Research tells us that just as adolescents turn to peers, they also turn to television and print media, to deal with issues in their offline lives. For instance, they get information about sex from television and magazines (Borzekowski & Rickert, 2001; Brown, Childers, & Waszak, 1990; Ward, 2004); they also use television to obtain information about aspects of their self, such as gender and sexual identity (Arnett, 1995; Brown, 2004; Ward, 2004). Many young people report having a television and a variety of other media in their bedrooms (Roberts & Foehr, 2008); they also report using the multi-media environments of their rooms to express who they are (Steele & Brown, 1995) and to learn about sexual and romantic scripts (Brown et al., 1990; Evans, Rutberg, Sather, & Turner, 1991).

Digital Media and Adolescent Development

Chapter 1 showed that adolescents are awash in various forms of digital technologies, such as computers and the Internet. Most striking about these newer interactive media is that they have brought social interaction into electronic worlds and among adolescents, communication with peers is one of the most popular uses of technology (Subrahmanyam & Greenfield, 2008). Not only have these new media become an important means of connecting adolescents to peers, they also connect them to the other contextual influences in their lives, such as their leisure activities and even their families. Thus, it is becoming increasingly clear that we must consider digital worlds as another social context for adolescent development along the lines of other familiar contexts such as families, peers, and schools. It is therefore important to consider the implications of the diffuse, pervasive, and developmentally early immersion of young people in digital worlds.

We saw earlier that self-disclosure to peers may help adolescents deal with their developmental issues and newer digital media provide opportunities for self-disclosure. We also saw that adolescents turn to older media forms for help with core developmental issues. The central premise of this book is that online communication forms, which combine peer interaction with a popular medium, may provide a promising venue for adolescents to explore the developmental challenges they face in their lives (Subrahmanyam, Greenfield, & Tynes, 2004; Subrahmanyam, Šmahel, & Greenfield, 2006). For the last 10 years, our research agenda has focused on connecting electronic media with developmental processes (Šmahel, 2003; Šmahel, Blinka, & Ledabyl, 2008; Subrahmanyam et al., 2004; Subrahmanyam et al., 2006). Using both qualitative and quantitative methods, we have shown that adolescents' online interactions in a variety of online forums (e.g., chat rooms, blogs, and social networking sites) are both a literal and a metaphoric screen for representing major adolescent developmental issues.

In this book, we adopt this approach as we try to piece together a balanced picture of digital youth and their digital worlds. We have organized the first part of the book in terms of some of the main developmental tasks and challenges faced by adolescents – sexuality, identity, intimacy, interpersonal connections, and developing an ethical and core value system. We will show that these developmental tasks or challenges are being transferred to digital worlds, and that in the process, they may be transformed, intensified, reversed, or even remain unchanged as the case may be. By linking young people's online interactions to ongoing, core developmental processes, we can arrive at a more complete understanding of their online lives, one that will endure even if the application itself does not.

A Theoretical Framework for Conceptualizing Adolescents' Online Behavior: The Co-construction Model

The theoretical framework that we adopt in this book is the co-construction model, and was first proposed by media research pioneer, Patricia Greenfield (Greenfield, 1984), and us to understand online teen chat (Subrahmanyam et al., 2004, 2006). Our attempt to connect developmental processes to adolescents' digital worlds is a departure from the media effects approach that has traditionally been used to conceptualize the role of media in human development (Anderson & Dill, 2000; Bandura, Ross, & Ross, 1961; Klapper, 1960). On the media effects model, the content of media is believed to affect children's attitudes, thoughts, and behaviors (Anderson & Dill, 2000; Bandura et al., 1961; Klapper, 1960). Proponents view media as external to the user, with its effects flowing from the outside in or from media into the user. Although not explicitly stated, the media effects approach views the user as a passive recipient of media influence. Examples of studies adopting this approach include those that examine whether television watching improves literacy or video game playing results in benefits to attentional and spatial skills. Much of the early research on adolescents' Internet use also focused on the benefits or harm to their well-being and evaluated the effects of the Internet on anxiety, depression,

loneliness and other similar measures of well-being; the research on these topics is described in greater detail in Chapter 7.

Our co-construction model of new media also differs from the Uses and Gratification theory of mass media (Blumler & Katz, 1974), which suggests that different people use media for different purposes or gratifications such as escape, information, and entertainment. Compared to the media effects approach, the Uses and Gratification theory assumes that users of media have an active role both in their choice of media and consequently in the effects that media may have on them. Studies of young people's use of the Internet for peer communication (Gross, 2004), health information (Borzekowski, Fobil, & Asante, 2006; Suzuki & Calzo, 2004), and social support (Whitlock, Powers, & Eckenrode, 2006) are examples of work that have sought to understand online behavior by looking at the uses that youth may derive from them. Chapter 8 discusses young people's use of the Internet for health and well-being in detail and the Internet's avowed potential for delivering treatments and interventions.

The media effects perspective and the Uses and Gratifications theory have helped advance our understanding of young people's online behavior, but they are nonetheless limiting, as they do not take into account key features of online venues. In interactive digital environments, such as chat rooms, instant messaging, text messaging, and social networking sites, users construct and co-construct their environments. Although designers may provide the platform or the tool, in actuality, users co-construct their use and use tools in ways that the designer may have never anticipated. In fact, Greenfield and Yan (2006) refer to the Internet as a cultural tool kit consisting of an infinite series of applications. Online environments are cultural spaces, where norms are created, shared and passed on to other users. Online culture is not static, but is a cyclical dynamic entity, and users are constantly generating and passing on new norms. Therefore, it is important to move away from a picture of the adolescent Internet user as passive and mindlessly influenced by online contexts. Instead, we must see users as creating their contexts in conjunction with other users, thus influencing and being influenced by the very online culture that they are helping to create.

If adolescent users are co-constructing their online environments, then we would expect their online and offline worlds to be connected; consequently, digital worlds may serve as a playing ground for important developmental issues from offline lives. Thus, we expect that teens bring to their online haunts the issues and challenges that they face in their offline lives. As we noted earlier, for adolescents, these would include the developmental tasks of sexuality, identity, intimacy, and interpersonal connection. We expect adolescents' online and offline physical and social worlds to be linked to each other not only in terms of the topics and themes that are projected, but also in terms of the kinds of behavior engaged in, the people interacted with, and the relationships that may be sustained. Another area of connectedness is gender; for instance, gendered communication in online chat rooms suggests that offline gendered behaviors and preferences are found in online contexts (Šmahel & Subrahmanyam, 2007). Problem behaviors may also be connected and youth troubled in their offline lives might seek out trouble online.

Our thesis is that adolescents' physical, social, and digital worlds are intertwined and interconnected and have a transactional or bi-directional relationship with each other. In other words, their online and offline lives are connected to each other. Digital worlds are very real to youth – and within their subjective experiences, the “real” and “virtual” may even blend with each other. Therefore, we refrain from using the term “real world” to contrast with “online” or “digital worlds.” Instead we will use the terms physical/digital and offline/online to capture both ends of the continuum representing online and offline worlds.

We expect that youth will use online contexts to extend and bootstrap their offline physical lives. We suggest that they will do so in novel and creative ways that capitalize on the opportunities and adapt to the challenges of online communicative environments, which we discussed in Chapter 1 (Greenfield & Subrahmanyam, 2003). For instance, anonymous online environments such as bulletin boards allow teens to ask questions about sensitive topics or to explore aspects of their identity that they are still exploring. In contrast, text-based applications, such as chat rooms and instant messages present special challenges to having coherent and effective communication. Users particularly, young ones, have adapted by creating, sharing, transmitting, and transforming a new chat code (Greenfield & Subrahmanyam, 2003). Consequently, although we expect virtual worlds to serve as a screen for offline behaviors and themes, we expect that they will do so with different affordances. Online contexts vary from offline ones as well as among themselves in the extent to which participants are disembodied, anonymous, and the extent to which users may interact with strangers versus known others. Consider early chat rooms that were text-based and where users were disembodied and anonymous and were more likely to interact with strangers. In contrast, social networking sites utilize text, audio, and visual images – thus, users are less likely to be disembodied; however, they have considerable freedom as to whether they are anonymous and whether they interact with strangers or known others. Because of these different affordances, we expect that even though youth may use new virtual venues to enact real-life issues, they will do so differently and with different intensities. Thus, when we find offline themes within online worlds, they may be similar, exaggerated, or reversed from their offline counterparts. Regardless of this, viewing digital worlds as continuous with physical worlds, allows us to begin to understand online behavior.

Our position that offline and online worlds are interconnected is in contrast to earlier speculation that the Internet may allow users to present online selves that are separate and from their offline ones (Byam, 1995; McKenna & Bargh, 2000; Turkle, 1995). Given the disembodied nature of most digital venues, wherein users could theoretically leave their bodies behind in their physical worlds as well their potential for anonymity, it was speculated that while online, they could be anybody they wanted to be. Online anonymity was much more likely in the early years before the diffusion of the Internet and tools such as digital cameras and web cams that made it easy to upload audio and video. These features led theorists to speculate that users would be able to leave race and gender behind as they embarked online. Turkle (1995) suggested that youth may use online environments to experiment and tinker with their identity. These speculations were consistent with the applications

popular at the time such as chat rooms and Multi User Dungeons (or MUDs), where one could choose to be anonymous and more likely to interact with strangers.

As we will show in this book, the Internet and other digital tools have changed and evolved dramatically, and many of these early speculations have not borne out. Instead, young people are bringing the people and issues from their offline lives into their online worlds and interactions. Youth have at their disposal an array of online applications such as email, instant messaging, and social networking sites, which allow them to connect with people they already know. At the same time, there continue to be online contexts such as bulletin boards and MMORPG's, where one can interact with people who are not a part of one's offline life. As we consider these different applications, we will show that online worlds are connected to offline worlds, but in different ways depending on the particular context, whether users are anonymous and/or disembodied, and the activities for which they use a particular digital tool.

Conclusions

In the three decades since Hill first laid out his research agenda, we have gained tremendous insight about adolescence. We have learned more about the changes – biological, cognitive, and social – that occur, the developmental tasks such as sexuality, identity, and intimacy facing individuals in this life phase, and most importantly the role of the context (peers, families, and schools) as adolescents deal with the challenges before them. As newer interactive media have become an integral part of adolescents' lives, and allow them to connect with the other people in their lives, it is clear that they are an important social context, one that provides youth with opportunities to explore the developmental challenges before them. As a social context, digital worlds are constructed and co-constructed by adolescents themselves and consequently we propose that teens' online and offline lives are psychologically connected. In Chapters 3–5, we pursue this line of reasoning, and examine separately the role of technology in the fundamental adolescent developmental issues of sexuality, identity, and intimacy. Chapter 6 does the same for the development of ethics and civic engagement, a less central task, but nonetheless very relevant in today's society. It is our hope that such a developmental approach will help us to develop a deeper and more comprehensive understanding of the role of digital media in young people's development.

References

- Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology*, 78, 772–790.
- Arnett, J. J. (1995). Adolescents' uses of the media for self-socialization. *Journal of Youth and Adolescence*, 24(5), 519–533.
- Arnett, J. J. (2000). Emerging adulthood – A theory of development from the late teens through the twenties. *American Psychologist*, 55, 469–480.

- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. New York, NY: Oxford University Press.
- Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *The Journal of Abnormal and Social Psychology*, 63, 575–582.
- Blumler, J. G., & Katz, E. (1974). *The uses of mass communications: Current perspectives on gratifications research*. Beverly Hills, CA: Sage.
- Borzekowski, D. L. G., Fobil, J. N., & Asante, K. O. (2006). Online access by adolescents in Accra: Ghanaian teens' use of the Internet for health information. *Developmental Psychology*, 42, 450–458.
- Borzekowski, D. L. G., & Rickert, V. I. (2001). Adolescent cybersurfing for health information: A new resource that crosses barriers. *Archives of Pediatrics and Adolescent Medicine*, 155, 813–817.
- Brown, B. B. (2004). Adolescents' relationships with peers. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 363–394). Hoboken, NJ: Wiley.
- Brown, J. D., Childers, K. W., & Waszak, C. S. (1990). Television and adolescent sexuality. *Journal of Adolescent Health Care*, 11, 62–70.
- Buhrmester, D., & Prager, K. (1995). Patterns and functions of self-disclosure during childhood and adolescence. In K. J. Rotenberg (Ed.), *Disclosure processes in children and adolescents* (pp. 10–56). New York, NY: Cambridge University Press.
- Byam, N. K. (1995). The emergence of community in computer-mediated communication. In S. G. Jones (Ed.), *Cybersociety: Computer-mediated communication and community* (pp. 138–163). Thousand Oaks, CA: Sage.
- Connolly, J., Furman, W., & Konarski, R. (2000). The role of peers in the emergence of heterosexual romantic relationships in adolescence. *Child Development*, 71, 1395–1408.
- Cubbin, C., Santelli, J., Brindis, C. D., & Braveman, P. (2005). Neighborhood context and sexual behaviors among adolescents: Findings from the National Longitudinal Study of Adolescent Health. *Perspectives on Sexual and Reproductive Health*, 37, 125–134.
- Côté, J. E. (2006). Emerging adulthood as an institutionalized moratorium: Risks and benefits to identity formation. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 85–116). Washington, DC: American Psychological Association.
- Erikson, E. H. (1950). *Childhood and society*. New York, NY: W W Norton & Company.
- Erikson, E. H. (1959). *Identity and the life cycle: Selected papers*. Oxford: International Universities Press.
- Erikson, E. H. (1968). *Identity: Youth and Crisis*. New York, NY: W W Norton & Company.
- Evans, E. D., Rutberg, J., Sather, C., & Turner, C. (1991). Content analysis of contemporary teen magazines for adolescent females. *Youth & Society*, 23, 99–120.
- Furman, W. (2002). The emerging field of adolescent romantic relationships. *Current Directions in Psychological Science*, 11, 177–180.
- Furman, W., Brown, B. B., & Feiring, C. (1999). *Contemporary perspectives on adolescent romantic relationships*. New York, NY: Cambridge University Press.
- Furman, W., & Shaffer, L. (2003). The role of romantic relationships in adolescent development. In P. Florsheim (Ed.), *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications* (pp. 3–22). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Giblin, A. A. (2004). *Adolescent girls' appearance conversations: Evaluation, pressure and coping*. Seattle, WA: University of Washington.
- Gordon, M., & Miller, R. L. (1984). Going steady in the 1980s: Exclusive relationships in six Connecticut high schools. *Sociology & Social Research*, 68, 463–479.
- Greenfield, P. M. (1984). *Mind and media: The effects of television, video games, and computers*. Cambridge, MA: Harvard University Press.
- Greenfield, P. M., & Subrahmanyam, K. (2003). Online discourse in a teen chatroom: New codes and new modes of coherence in a visual medium. *Journal of Applied Developmental Psychology*, 24, 713–738.

- Greenfield, P. M., & Yan, Z. (2006). Children, adolescents, and the Internet: A new field of inquiry in developmental psychology. *Developmental Psychology*, 42, 391–394.
- Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Applied Developmental Psychology*, 25, 633–649.
- Hall, G. S. (1904). *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion and education, and education*. New York, NY: D Appleton & Company.
- Havighurst, R. J. (1972). *Developmental tasks and education*. New York, NY: David McKay Company.
- Hill, J. P. (1983). Early adolescence: A research agenda. *The Journal of Early Adolescence*, 3, 1–21.
- Inhelder, B., & Piaget, J. (1999). *The growth of logical thinking from childhood to adolescence*. London: Routledge.
- Johnson, F. L., & Aries, E. J. (1983). Conversational patterns among same-sex pairs of late-adolescent close friends. *Journal of Genetic Psychology*, 142, 225–238.
- Kallen, D. J., Stephenson, J. J., & Doughty, A. (1983). The need to know: Recalled adolescent sources of sexual and contraceptive information and sexual behavior. *Journal of Sex Research*, 19, 137–159.
- Klapper, J. T. (1960). *The effects of mass communication*. New York, NY: Free Press.
- Kroger, J. (2003). Identity development during adolescence. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 205–226). Malden, MA: Blackwell.
- Larson, R., & Richards, M. H. (1991). Daily companionship in late childhood and early adolescence: Changing developmental contexts. *Child Development*, 62, 284–300.
- McKenna, K. Y. A., & Bargh, J. A. (2000). Plan 9 from cyberspace: The implications of the Internet for personality and social psychology. *Personality and Social Psychology Review*, 4, 57–75.
- Mosher, W. D., Chandra, A., & Jones, J. (2005). *Sexual behavior and selected health measures: Men and women 15–44 years of age, United States, 2002*. Retrieved October 28, 2005, from <http://www.cdc.gov/nchs/data/ad/ad362.pdf>
- Nurmi, J.-E., Lerner, R. M., & Steinberg, L. (2004). Socialization and self-development: Channeling, selection, adjustment, and reflection. *Handbook of adolescent psychology* (2nd ed., pp. 85–124). Hoboken, NJ: Wiley.
- Pombeni, M. L., Kirchler, E., & Palmonari, A. (1990). Identification with peers as a strategy to muddle through the troubles of the adolescent years. *Journal of Adolescence*, 13, 351–369.
- Reis, O., & Youniss, J. (2004). Patterns in identity change and development in relationships with mothers and friends. *Journal of Adolescent Research*, 19, 31–44.
- Roberts, D. F., & Foehr, U. G. (2008). Trends in media use. *The Future of Children*, 18, 11–37.
- Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development*, 72, 1135–1150.
- Savin-Williams, R. C., & Diamond, L. M. (2004). Sex. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 189–231). New York, NY: Wiley.
- Šmahel, D. (2003). Communication of adolescents in the internet environment. *Ceskoslovenska psychologie*, 47, 144–156.
- Šmahel, D., Blinka, L., & Ledabyl, O. (2008). Playing MMORPGs: Connections between addiction and identifying with a character. *Cyberpsychology and Behavior*, 11, 715–718.
- Šmahel, D., & Subrahmanyam, K. (2007). 'Any girls want to chat press 911': Partner selection in monitored and unmonitored teen chat rooms. *CyberPsychology & Behavior*, 10(3), 346–353.
- Sowell, E. R., Thompson, P. M., Holmes, C. J., Jernigan, T. L., & Toga, A. W. (1999). In vivo evidence for postadolescent brain maturation in frontal and striatal regions. *Nature Neuroscience*, 2, 859–860.
- Sowell, E. R., Thompson, P. M., Tessner, K. D., & Toga, A. W. (2001). Mapping continued brain growth and gray matter density reduction in dorsal frontal cortex: Inverse relationships during postadolescent brain maturation. *Journal of Neuroscience*, 21, 8819.

- Steele, J. R., & Brown, J. D. (1995). Adolescent room culture: Studying media in the context of everyday life. *Journal of Youth and Adolescence*, 24, 551–576.
- Steinberg, L. (2008). *Adolescence*. New York, NY: McGraw-Hill.
- Subrahmanyam, K., & Greenfield, P. M. (2008). Communicating online: Adolescent relationships and the media. *The Future of Children*, 18, 119–146.
- Subrahmanyam, K., Greenfield, P. M., & Tynes, B. M. (2004). Constructing sexuality and identity in an online teen chat room. *Journal of Applied Developmental Psychology: An International Lifespan Journal*, 25, 651–666.
- Subrahmanyam, K., Šmahel, D., & Greenfield, P. M. (2006). Connecting developmental constructions to the Internet: Identity presentation and sexual exploration in online teen chat rooms. *Developmental Psychology*, 42, 395–406.
- Suzuki, L. K., & Calzo, J. P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexuality. *Journal of Applied Developmental Psychology*, 25, 685–698.
- Tanner, J. M. (1978). *Growth at adolescence* (2nd ed.). Oxford: Blackwell.
- Teare, J. F., Garrett, C. R., Coughlin, D. G., & Shanahan, D. L. (1995). America's children in crisis: Adolescents' requests for support from a national telephone hotline. *Journal of Applied Developmental Psychology*, 16, 21–33.
- Trickey, H. (2003). *Home economics comes of age*. Retrieved June 19, 2008, from <http://www.cnn.com/SPECIALS/2001/schools/stories/homeec.revolution.html>
- Turkle, S. (1995). *Life on the screen: Identity in the age of the Internet*. New York, NY: Simon & Schuster.
- Ward, L. M. (2004). Wading through the stereotypes: Positive and negative associations between media use and black adolescents' conceptions of self. *Developmental Psychology*, 40, 284–294.
- Waterman, A. S. (1999). Identity, the identity statuses, and identity status development: A contemporary statement. *Developmental Review*, 19, 591–621.
- Weinstein, E., & Rosen, E. (1991). The development of adolescent sexual intimacy: Implications for counseling. *Adolescence*, 26, 331–339.
- Whitlock, J. L., Powers, J. L., & Eckenrode, J. (2006). The virtual cutting edge: The Internet and adolescent-self-injury. *Developmental Psychology*, 42, 407.