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Sexual Media Practice: How Adolescents Select, Engage with, and Are Affected by Sexual Media 🔓

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Abstract and Keywords

This chapter focuses on the role media play in the sexual socialization of adolescents and emerging adults in modern societies. The review of relevant research and theory is organized around the Sexual Media Practice Model's core components of identity, selection, engagement, and application, which are based on the following assumptions: (1) media consumers are active participants and sometimes content producers; (2) selection and use of sexual media are motivated by the adolescent's identity or sexual self-concept; (3) sexual media effects are a cyclical process, such that sexual content may be sought that reinforces existing tendencies that leads to further use of relevant content and further effects; and (4) friends and peers are important throughout the process in generating, sharing, and interpreting media. The discussion includes suggestions for further research and an examination of potential media-related solutions to enhance healthy adolescent sexuality.

Keywords: adolescent sexuality, adolescents, emerging adults, media practice model, sexual media effects, sexual socialization

Introduction

Sex is an important part of most people's lives. Some aspects come pretty naturally, but many aspects of sexual behavior are culturally determined. Standards of sexual attractiveness, courtship rituals, and expectations of who does what sexually to whom and under what circumstances are stipulated by the culture in which a person lives. The prevailing sexual norms and standards must be learned by young people as they mature. In traditional societies, elders, parents, and religion were the primary sexual socialization agents (Katchadourian, 1990). In modern societies, however, media (television, movies, music, magazines, Internet, video games), and peers have also become important purveyors of sexual models and norms. The more interactive media technologies, such as texting and social networking (e.g., Facebook) also provide easy access to friends who may introduce, reinforce or participate in sexual behavior.

Just a quick look at songs popular with teens in 2011 such as "Tonight I'm Fu__ing You" (Enrique Eglasias), and "S+M Sado Masochism," in which Rihanna sings "sticks and stones may break my bones, but chains and whips excite me" while Britney Spears sings about a ménage a trois in "3," illustrates how important sexual topics are in the media that young people consume. Online monikers with which adolescents identify themselves as "SexKittenPrr" or "Playa1" suggest sexual self-expression is also important in the media youth create.

Although a number of socialization agents, such as parents, teachers, and religious leaders also play important roles, this chapter focuses on the role media play in the sexual socialization of adolescents and emerging adults in modern societies. We think of media as important sources of cultural norms that young people interact with as they "learn to (p. 224) express affection, love and intimacy in ways consistent with their own values...and general social expectations and scripts about adolescent sexuality" (Pinquart, 2010, p. 440). Because media and the ability

of youth to be creators and distributors of media have changed so dramatically in the past decade, it is important to look closely at the ways in which adolescents select, engage with, and incorporate what they see and hear in the media about sex into their own sexual lives.

In most of the developed world, adolescence (12–18 years old) is an important period for sexual exploration, development of sexual identities and orientation, formation of romantic relationships, and establishment of patterns of sexual behavior. In early adolescence (12–13 years old) the focus typically is on the sexually maturing body and how to get it to conform to prevailing standards of sexual attractiveness. In middle adolescence (14–16 years old), romantic relationships are formed that may include sexual touching and for some, sexual intercourse. By late adolescence (17–18 years old), from one-half to two-thirds of adolescents in the United States (and in most European countries) have been in a romantic relationship and many have had sexual intercourse (Hubert, Bajos, & Sanfort, 1998). In emerging adulthood (18–24 years old), romantic and physical sexual exploration and development continue. Emerging adults tend to try out long-term relationships, and some enter committed relationships and become parents. Approximately 10% of emerging adults experience some same-sex attraction, and approximately 3% engage in same-sex sexual behavior (Savin-Williams & Ream, 2007).

In the process of developing a sense of who they are sexually, young people seek information and guidance about what is appropriate, inappropriate, expected, and condoned or not condoned. In some countries, such as the Netherlands, France, and Germany, young people are expected to be sexually responsible and are provided age-appropriate sex education throughout their school years. They also have access to health care and contraceptives, so their rates of sexually transmitted infections (STIs), and unplanned pregnancies are much lower than in countries such as the United States that do not consistently provide medically accurate sex education in schools or confidential health services (Alford & Hauser, 2011). Thus, we might expect that the media will be more influential in young people's sexual development when other socialization agents and institutions that might support sexually healthy behavior are reticent or absent.

This chapter uses the Media Practice Model (MPM) (Steele & Brown, 1995; Steele, 1999; Brown, 2000) to organize the growing body of studies addressing the media's effects on the sexual development of adolescents. The MPM was introduced in the late 1990s in an attempt to move toward a less linear way of thinking about media effects, especially for adolescents. The model built on the thinking of European scholars (Hall, 1980; Bourdieu, 1990; Valsiner, 1993), who were asserting that more attention should be paid to the receiver of media messages. This "active audience" conceptualization is even more appropriate now as the media become more under the control of consumers, whenever and wherever they are.

Although the model is probably appropriate for describing other domains of media use, it was originally conceived to describe adolescents' sexual media use, so we will discuss it with that focus in mind.[1] The main assumptions of the MPM as applied to adolescent sexuality (Figure 13.1) are: (1) media consumers are active participants and sometimes even producers themselves (e.g., "sexting"—sending revealing pictures of themselves to others), thus becoming what futurist Alvin Toffler (1980) presciently called "prosumers;" (2) selection and use of sexual media is motivated by the adolescent's identity or sexual self concept; (3) sexual media effects are a cyclical process, such that sexual content may be sought that reinforces existing tendencies that leads to further use of relevant content and further effects; and (4) friends and peers are important throughout the process in generating, sharing, and interpreting media.

The model depicts three main "moments," Selection, Engagement, and Application, in adolescents' encounters with sexual media. Given the ubiquity and variety of media choices available, media consumers must choose which medium and content to which they will attend. At least initially, those choices depend on whom the consumers are, both socially and individually. Given that adolescence is an especially important period in identity development, at least some of the selection of media content is probably driven by adolescents' current and future conceptions of themselves.
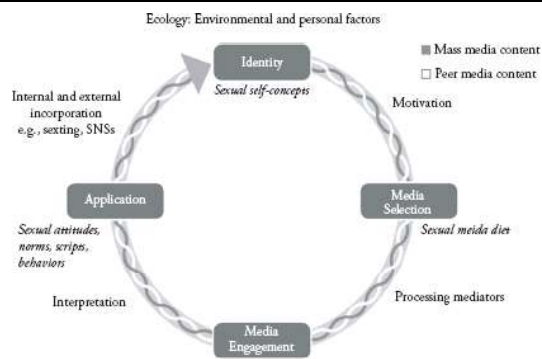
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Figure 13.1 Sexual Media Practice Model.

The MPM model suggests that if sex and sexuality are an important part of an adolescent's identity, then he or she will be more interested in and may even seek out sexual content in the media. Once selected, the adolescent may or may not engage with the content. A number of factors, such as identification with characters, perceived realism of the (p. 225) depicted behaviors, and the extent of involvement or transportation into a narrative will affect to what extent that engagement occurs. Media users who are distracted (e.g., multitasking) may be less engaged than those who are paying full attention; some may be physically and/or emotionally aroused by what they see. Engagement may shift prebehavioral sexual outcomes, such as perceived sexual norms, attitudes, beliefs, outcome expectancies, and sexual scripts (typical sequences of behavior) that may in turn affect adolescents' sexual behaviors (e.g., seeking sexual partners, sexual touching, initiation of sexual intercourse). Because the production and dissemination of media content is easier today than ever before, engaged and motivated media consumers may also use their cell phones, video cameras, and laptops to become producers and distributors of sexual media content.

In the two decades since the MPM was introduced, evidence has continued to accumulate that media effects on behavior are not simply a linear process with the media as the independent variable and sexual behaviors as the dependent variables. In the violence domain, Slater and colleagues (Slater, Henry, Swaim, & Anderson, 2003; Slater, Henry, Swaim, & Cardador, 2004; Slater, 2007) have shown with longitudinal panel surveys that exposure to violent content (in action films, video games, and websites) does affect aggressive behavior, but primarily for adolescents who are socially isolated, victimized, or who have aggressive tendencies. Slater's analysis painted a picture of a "downward spiral" of selection of violent content reinforcing aggressive tendencies or suggesting that violence is a way to solve frustrations. Ultimately, the adolescents who used more violent media content behaved more aggressively (Slater et al., 2003).

A similar cyclical pattern has been suggested in research on the effects of the media on body image and eating disorders. The evidence points to a pattern of some adolescent girls both learning from and seeking media content that reinforces their ideals of feminine beauty. Internalization of the thin beauty ideals they see in women's magazines, on television shows and websites, may lead to body dissatisfaction, weight concerns, excessive dieting and disordered eating behaviors, as well as further consumption of the thin-ideal media with which they compare their bodies (Harrison & Hefner, 2008; López-Guimerà, Levine, Sánchez-Carracedo, & Fauquet, 2010).

Although the body of evidence is not yet as robust for sexual outcomes, at least two three-wave longitudinal analyses suggest a similar pattern for early adolescents—as adolescents enter puberty, sexual content in the media is more relevant, is paid more attention, maybe even sought out (Kim, Collins, Kanouse, Elliott, Berry, Hunter, Miu, & Kunkel, 2006; Bleakley, Hennessy, Fishbein, & Jordan, 2008). The sexual media content these adolescents see or listen to increases the saliency of this content and influences the adolescents' sexual scripts or ideas about how sexual encounters unfold. Some of what they see may shift perceptions of norms such that heavier users may begin to think that early (p. 226) and unprotected sexual intercourse is typical for young people. The lack of discussion or depiction of negative consequences in the media content may increase the adolescent media users' positive perceptions of sexual behavior and may stimulate earlier sexual behavior than would have occurred otherwise (Wright, 2011).

We turn now to look more closely at each moment in the MPM to see what is currently known about adolescents'

sexual media practice and then to discuss briefly what solutions have been posited to minimize negative media effects and enhance adolescents' healthy sexual development. We close with some intriguing research questions and a few comments about the challenges of conducting research on sexuality with young people.

Media Are the Air Adolescents Breathe

On an average day, an adolescent (8–18 years old) in the United States spends 7.5 hours of her leisure time attending to various media, which is more time than she spends in school or interacting with her parents (Rideout, Foehr, & Roberts, 2010). Many teens use two or more media simultaneously, for example, listening to music while surfing the Web or watching television while chatting with friends online. Accounting for such media multitasking, an average adolescent spends more than 10 hours per day using media. This chapter refers to the amount and type of media content an adolescent consumes as an adolescent's media diet.

The amount of time adolescents spend with media varies by gender, ethnicity, and age. Boys in the United States use media about 1 hour more per day (11.25) than girls (10.25). Hispanic and black youth use media about 13 hours per day, whereas white teens average 8.5 hours per day. Media use increases between early and middle adolescence and then declines somewhat in late adolescence. Tweens (8–10 years old) average just shy of 8 hours of media per day, early teens (11–14 years old) nearly 12 hours per day, and late teens (15–18 years old) less than 11.5 hours per day (Rideout et al., 2010).

In 2009, adolescents in the United States used media about an hour more per day than they did 10 years earlier (Rideout et al., 2010), to a large extent because different forms of media have become more portable. With the advent of MP3 players, laptop computers, and cell phones, the time adolescents spent listening to music increased by nearly 50 minutes per day, and the time they spent watching television, using computers, and playing video games, each increased by half an hour per day. Adolescents' use of print media (e.g., magazines, books) decreased by about 5 minutes per day.

Considering only "new" media devices, adolescents spent 1½ hours texting on their cell phones daily, and more than 45 minutes listening to music, playing games, and watching television programs. They spent 1½ hours using a computer outside of school (using social networking websites, playing games, watching videos, etc.), and close to another hour playing video games on either a console or a hand-held device.

Selection of Sexual Media Content

A number of personal and contextual factors, including timing of pubertal development, sexual identities, and prior sexual experience, as well as access to media, influence the extent to which adolescents see and/or hear sexual content. Some adolescents choose heavier sexual media diets in entertainment media than others; some look for sexual health information, often online (Ackard & Neumark-Sztainer, 2001).

Teens' exposure to sexual media may also have a biological basis: Teens who are predisposed to be more sexual than their peers may be more likely to select sexual media content. Biologically, hormone levels are associated with adolescents' sexual motivations and behaviors. For example, in a study of 12- to 16-year-old white males, fewer than one in five (16%) of those with the lowest testosterone levels had had sexual intercourse, whereas more than two-thirds (69%) of those with the highest testosterone levels had (Udry, 1990).

Social factors can also either delay or accelerate adolescents' sexual development. In a follow-up study, the adolescent boys' testosterone levels appeared to interact with their religious involvement in predicting sexual debut (Halpern, Udry, Campbell, & Suchindran, 1994). Boys with high testosterone levels but infrequent religious attendance were the most likely to initiate sex over a 3-year period between study waves; those with low testosterone and frequent religious attendance were the least likely to have sex. Adolescents' sexual development may also be affected by social status aspirations, the progression of a romantic (or nonromantic) relationship, or other emotional needs (Diamond & Savin-Williams, 2009).

Such interactions between biological predispositions, socialization, and experience result in diverse sexual self-evaluations among adolescents. One Australian study showed that adolescents vary in sexual self-esteem, sexual self-efficacy, and (p. 227) sexual self-image (Buzwell & Rosenthal, 1996). The study measured adolescents'

levels of sexual interest, arousal, confidence, anxiety, as well as sexual risk behaviors, and categorized individuals into five "sexual styles," which ranged from the "sexually naïve" to the "sexually driven." The "sexually naïve" teens were not confident with respect to their sexual and physical characteristics, had low sexual self-efficacy, arousal, and exploration, and reported high sexual anxiety, but the ability to say "no" to sex. The "sexually driven," in contrast, were characterized as sexually aroused and curious, confident adolescents who were uninterested in commitment and who found it difficult to decline sexual activity.

We may easily imagine "sexually driven" teens being more avid consumers of sexual media, perhaps using these media to both inform and reinforce their sexual identities. The "sexually naïve" teens, however, may also consume sexual media, looking to build up their sexual self-efficacy and confidence by learning from sexual media role models or situations. Such teens may also shield themselves from sexual content that might conflict with their sexual values. In a national survey, for example, US teens who were more religious and who had less permissive attitudes about premarital sex, reported liking less mature (including less sexual) television programs than their peers who were not as religious (Bobkowski, 2009). In contrast, in another study, girls who entered puberty earlier than their age mates expressed more interest in sexually oriented media than girls who matured later (Brown, Halpern, & L'Engle, 2005).

A longitudinal study of a US national sample found that black, female, younger, and more highly viewer-involved teens (12–17 years old) watched significantly more sexually oriented television than did other groups. Teens who had had more precoital sexual experiences and those who believed that their friends approved of sex also were more likely to be viewing more sexual content on television a year later. Media access also plays a role in sexual media diets. In that same study, teens who had a television in their bedroom and teens who spent more unsupervised time at home watched more sexual content (Kim et al., 2006).

The Internet also gives young people access to a wide range of sexual information that may be too embarrassing or personal to discuss with parents, teachers, health care providers, or even with friends (Buhi, Daley, Fuhrmann, & Smith, 2009). Three-fourths of online adolescents say they have used the Internet to look up health information (Rideout, 2001); sexual health is one of the most frequently sought health topics (Lenhart, Purcell, Smith, & Zickuhr, 2010). Teens search for information on sexual issues such as puberty, menstruation, sexual abuse, contraception, pregnancy, and STIs (Ackard & Neumark-Sztainer, 2001).

As posited in the MPM, a young person's identity may also affect what kinds of media are selected and engaged with. Similar to the Australian study described in the preceding, a cluster analysis of early adolescents in the United States (12–14 years old) identified four sexual self-concept clusters that included both boys and girls and blacks and whites. Each cluster (*Virgin Valedictorians*, *Curious Conservatives*, *Silent Susceptibles*, and *Sexual Sophisticates*) was named to reflect the different patterns of sexual behavior as well as media use (L'Engle, Brown, Romocki, & Kenneavy, 2007).

Virgin Valedictorians were the least likely to have had sexual intercourse. These boys and girls were focused on doing well in school, books were their preferred medium, and they paid the least attention to and were the most critical of the rare popular media they did use. *Curious Conservatives*, in contrast, were heavy users of media and strongly identified with the teens in popular music and magazines, such as *Seventeen*. Adolescents in this cluster had low intentions to have sex, but were interested in sexual content and were knowledgeable about sexual health (e.g., knew that condoms were effective in preventing STIs).

Silent Susceptibles were interested in engaging in sexual behavior but had little sexual health knowledge; they were on the Internet frequently and were the most avid videogame players. *Sexual Sophisticates* used different kinds of media frequently. They were the most likely to identify with and wish they were like media characters, and were the most likely to have had sexual intercourse. Thus, it appears that sexual self-concepts may affect which kinds of media and which kinds of sexual media content adolescents prefer.

Sexual Media Content

Content analyses have shown that all media and genres are not the same in frequency or kind of sexual portrayals, so adolescents may choose media that have more or less and different kinds of sexual content. Sexual behavior is more frequent and explicit in movies than on prime time television (Gunasekera, Chapman, & Campbell,

2005; Pardun, L'Engle, & Brown, 2005). Music videos and soap operas and some premium channels, (p. 228) notably HBO, contain the most sexual content of different television genres (Fisher, Hill, Grube, & Gruber, 2004). Popular music, especially rap and hip hop, contains more sexual references than most television genres (Pardun, L'Engle, & Brown, 2005). Blacks are more likely to listen to music with sexually degrading lyrics than whites; female adolescents, regardless of race, are more likely to listen to sexual music that does not contain degrading lyrics than males (Martino, Collins, Elliott, Strachman, Kanouse, & Berry, 2006).

One estimate has suggested that more than one-third (37%) of all websites are dedicated to sexually explicit content or pornography (Optenet, 2010). Given such volume, it is relatively easy for adolescents to stumble on sexually explicit Internet content. Indeed, more than one-fourth (28%) of 10- to 17-year-olds in the United States reported experiencing unwanted exposure to online pornography in the previous year (Wolak, Mitchell, & Finkelhor, 2007). In a study of adolescents in North Carolina, by the time they were 14 years old, two-thirds of males and more than one-third of females had seen at least one form of sexually explicit media (magazines, videos, or on the Internet) in the previous year (Brown & L'Engle, 2009). Some adolescents look for online pornography—8% to 11% of American adolescents reported seeking out Internet pornography or intentionally going to X-rated websites in the previous year (Ybarra & Mitchell, 2005; Ybarra, Mitchell, Hamburger, Diener-West, & Leaf, 2011).

In the most comprehensive series of analyses of a range of US television content (more than 1,000 television shows on 10 channels), Kunkel et al. found that more than two-thirds of all programs included talk about sex, and more than one-third included sexual behavior (Kunkel, Eyal, Finnerty, Biely, & Donnerstein, 2005). About 90% of television programs with teenage characters include sexual content (Aubrey, 2004).

Compared with music, movies, magazines, and the Internet that adolescents use, television also contains the least amount of healthy sexual content (Pardun et al., 2005). Few television programs include talk about or portrayals of negative physical consequences (e.g., unplanned pregnancy, sexually transmitted infections) or the emotional and social risks or responsibilities of sex (Cope-Farrar & Kunkel, 2002; Aubrey, 2004). Kunkel et al. (2005) found that fewer than one in ten of the programs with sexual content most watched by teens discussed some kind of sexual risk; only about one in four of the programs that talked about or depicted sexual intercourse included some mention or depiction of risks and responsibilities.

An analysis of four media (music, movies, television, and magazines) used most frequently by early adolescents concluded that less than 1% of the content included any mention of three Cs of sexual health: Commitment, Contraceptives, or Consequences (Pardun et al., 2005). A qualitative analysis of the rare sexual health messages in the same dataset concluded that messages about responsibility for sexual health were gender stereotypical, such that "boys will be boys and girls better be prepared" (Hust, Brown, & L'Engle, 2008).

Social cognitive theory (SCT) (Bandura, 2009), which argues that people learn through observation and imitation of behavior that is rewarded and/or not punished, suggests that the lack of negative consequences in media sexual portrayals will increase the likelihood that adolescents will think they, too, will not suffer if they engage in sexual behavior. Sexual scripting theory (Gagnon & Simon, 1973) similarly predicts that if contraceptives are rarely shown as a normal part of a sexual script, adolescents who are learning about the typical steps in a sexual encounter by watching television or movies will be less likely to include the use of contraceptives in their own sexual relationships.

The social and immersive nature of digital media content also has important implications for what adolescents might learn from sexual content. First, the sexual media content that young people consume is often endorsed, and sometimes even produced by, their peers. To an extent, peers have always acted as one of the sources of adolescents' sexual media diets, with information about sexy movies to watch or magazines to read being circulated in peer networks. Digital media have made this process more immediate. With a click of a button, an adolescent can "like" a sexy song or movie on Facebook and instantaneously inform his or her friend network of this preference. Just as quickly, the adolescent can snap a suggestive photo of himself or herself and circulate it among friends.

Social cognitive theory also suggests that sexy media content endorsed or produced by a close friend may be more compelling than media content not similarly sanctioned. Research has documented that adolescents who identify with media characters are more likely to have the same sexual attitudes as their media models than those

adolescents who do not find the characters as compelling (e.g., Ward & Friedman, 2006). Youth may be more open to learning new sexual identities or behaviors from (p. 229) more immediate models such as close peers and the media models they endorse than from more distant media models.

Video games, increasingly popular among both young men and women (Rideout et al., 2010), also regularly portray sexualized characters and situations (Scharrer, 2004; Ivory, 2006). For example, a player's sole objective in some video games, such as RapeLay and Stockholm: An Exploration of True Love, is the perpetuation of sexual violence against women. Scholars have argued that the immersive and interactive qualities of video games increase the potential for detrimental effects (Carnagey, Anderson, & Bartholow, 2008). Video games that allow players to take on sexualized personas and engage in sexualized behaviors may affect players' sexual self-perceptions and norms.

Getting Sexually Attractive

From a developmental perspective, one of the earliest indicators of a young person's interest in sexuality is a desire to be attractive—to have an appealing body and the right "look." Although body standards have shifted over time, media typically present a narrow range of possibilities—in the last two decades, the ideal male has been strong and fit with a v-tapered, muscular body (Kolbe & Albanese, 1996); the ideal female is curvaceously thin ("large breasts on a skinny body") (Harrison & Hefner, 2008, p. 387). Although adolescents and adults in the developed world are increasingly overweight and obese (Popkin, 2009), fatness in media is rare and often treated with disdain. On television, overweight female characters are more likely insulted by male characters than thin women (Fouts & Burggraf, 2000). Online sites designed to reinforce eating disorders such as anorexia, promote the idea that thin is beautiful and fat is ugly (Norris, Boydell, Pinhas, & Katzman, 2006).

Thin-ideal media depictions have been shown to affect body dissatisfaction among adolescent girls and women (see meta-analysis by Grabe, Hyde, & Ward, 2008), and muscle dissatisfaction among older boys and young men (see meta-analysis by Barlett, Vowels, & Saucier, 2008). Such patterns apparently are exacerbated when adolescents internalize the sexualized standards of media models and begin to monitor their own bodies as objects that should conform to the ideals.

Self-objectification (Fredrickson & Roberts, 1997), or viewing oneself from an outsider's perspective, and subsequent body dissatisfaction, have been linked to a number of adverse psychological and physical outcomes including depression (Mond, van den Berg, Boutelle, Hannan, & Neumark-Sztainer, 2011), concern about weight and eating disorders (López-Guimerà et al., 2010), as well as sexual risk-taking. Impett, Schooler, and Tolman (2006) found that among a group of adolescent girls, self-objectification predicted nonuse of a condom at first sexual intercourse. Sexual self-efficacy, or the belief that one can abstain from sex, or convince a partner to engage in safe sexual practices (e.g., condom use), mediated[2] the relationship (Rosenthal, Moore, & Flynn, 1991). Thus, it may be that the media's sexual objectification of women (and increasingly of men) affects adolescents' developing sense of what their bodies should look like to be sexually alluring, and if their bodies do not compare favorably, may reduce their ability to engage in healthy sexual behavior because they do not consider themselves worthy of the attention.

As the MPM suggests, however, all adolescents will not be affected similarly by media content. A recent experiment examining reactions to body ideals in media illustrates that both selective exposure and attention can reduce possible negative effects. Knobloch-Westerwick and Romero (2011) found that body-dissatisfied college students who were not forced to view a set of advertisements paid less attention to advertisements that featured ideal bodies than those who were satisfied with their bodies. Analyses of the sexual scripts and counterscripts presented in media also suggest that adolescents must do some work to sort through various conceptualizations of the meaning and sequence of sexual behavior, and find scripts and portrayals that fit with their developing sexual identities.

Sexual Scripts in Media

The sexual scripts in the media typically are different for males and females, and are focused on heterosexual romantic and sexual relationships, enforcing what Rich (1980) called "compulsory heterosexuality." Homosexual relationships, although more frequent in US media than previously, are rarely depicted as overtly sexual (Fisher,

Hill, Grube, & Gruber, 2007) and even those relationships are presented as adhering to gendered stereotypes of a strong dominant "male" partner and a more submissive "female" partner (Ivory, Gibson, & Ivory, 2009). Blacks and other minority youth may also have difficulty finding models and scripts that support their cultural norms (Milbrath, Ohlson, & Eyre, 2009).

(p. 230) The traditional heterosexual script on prime time television (Kim, Sorsoli, Collins, Zylbergold, Schooler, & Tolman, 2007), reality dating shows (Ferris, Smith, Greenberg, & Smith, 2007), teen dramas (Aubrey, 2004; Kelly 2010), and popular music and music videos (Dukes, Bisel, Borega, Lobato, & Owens, 2003; Primack, Gold, Schwarz, & Dalton, 2008) depicts males as actively and aggressively pursuing sex and female characters willingly objectifying themselves and being judged by their sexual conduct. Teen girl magazines, such as *Seventeen*, have been described as teaching young women how to "transform themselves from girls into proper women" (Carpenter, 1998, p. 160). Young men's or "lad" magazines, such as *Maxim* and *FHM*, and women's magazines, such as *Cleo* and *Cosmo*, suggest that sex for men is primarily for recreation and sexual pleasure rather than a part of long-term relationships, and that men should have a variety of sexual partners (Taylor, 2005; Farvid & Braun, 2006).

Expectations about love, romance, and marriage may also be affected by media depictions as soap operas, reality dating shows, and romantic comedies provide scripts about desirable characteristics of partners, long-term relationships, and when sex should occur (Segrin & Nabi, 2002; Ferris et al., 2007; Johnson & Holmes, 2009). In an analysis of storylines about loss of virginity in teen television dramas, for example, Kelly (2010) identified three dominant scripts: (1) *Abstinence*: virginity is a gift that can be pleasurable, and sex is dangerous; (2) *Management*: virginity loss is a rite of passage to adulthood, but should be done in an appropriate way (e.g., after 15 years old, in an established monogamous romantic relationship, with contraceptives); and (3) *Urgency*: virginity is a kind of stigma that might even be lied about to maintain traditional masculinity. We should expect that adolescents with different sexual self-concepts would find the various scripts more or less compelling, depending on their interest in sexual behavior, and on the solidity and quality of their own attitudes and beliefs about romantic and sexual relationships.

Sexual and racial minority adolescents may be turning to entirely different media fare to find models and scripts that speak more directly to them. Studies have shown, for example, that black adolescents are more likely than their white counterparts to watch television shows that feature black characters (Brown & Pardun, 2004). It is likely that such differential patterns of selection are replicated for other media and on the Internet. One analysis of Internet home pages constructed by 14- to 17-year-old black girls found that many of their sexual self-representations as *Virgins, Freaks, Down-Ass Chicks/Bitches*, and *Pimpettes* mirrored the sexual scripts portrayed in hip hop music culture that typically features black men and women. A few of the girls resisted the dominant scripts, however, creating "counter-discourses" and more independent self-definitions (Stokes, 2007). Anthropologists have found that black and Mexican-American youth have different cultural models of romantic relationships than European-Americans (Milbrath et al., 2009), but we know little about the role media play in supporting or changing those culturally grounded ideas about courtship, love, and fidelity. More work on the ways in which marginalized young people select, engage with, and resist the dominant sexual scripts presented in the media is needed.

Engagement with Sexual Media Content

Once media content has been selected, the ways in which adolescents engage with the content will determine the effects of that exposure. In the MPM we use the term *Engagement* to encompass the psychological, interpretative, and physical interactions adolescents can have with sexual media content. Some types of engagement occur automatically and perhaps outside of conscious awareness. Counterarguing against sexual messages that do not match personal values may be less likely; for example, when an adolescent is multitasking (e.g., surfing the Internet and watching television at the same time) because cognitive resources are overtaxed. Engagement can also be physically active, for instance, when an adolescent wants to get pumped up before a party and starts dancing and singing along with a song's lyrics. Not all media are consumed in the same way, and how an adolescent engages with media content in the moment of consumption can influence the effect of that content on sexual attitudes, beliefs, and behaviors.

Processing Mediators

Studies of how people process messages have identified a host of psychological and physical factors that mediate the relationship between message exposure and message engagement. Some of the "processing mediators" that have been studied in relation to sexual content include interest, and the level of attention an adolescent chooses to or (p. 231) is capable of allotting, arousal (both sexual and general physiological excitement), character evaluations, narrative transportation, and resistance to persuasion. These processing mediators may suppress or enhance the effects of exposure to sexual content.

For example, two teenagers watching the same music video featuring men saying sexually degrading things about women, one watching attentively and the other multitasking by surfing the Internet simultaneously, are likely to be affected differently by the sexual content. The multitasker may be more likely to adopt program-consistent behaviors (Collins, 2008) because he has fewer cognitive resources to devote to counterarguing or critical evaluation. In this example the teenagers' attention, cognitive load, and resistance to persuasion are processing mediators that influence the effects of exposure to sexual content. Here we'll look at some of the main processing mediators in turn.

Attention

Attention has long been studied as a factor in message processing and message effects (e.g., Chaffee & Schleuder, 1986). Some level of attention is necessary to process any message. Researchers have shown that we have a finite amount of cognitive resources that we can allocate to the processing of messages (Lang, 2000). The sum of cognitive demands is the cognitive load. High cognitive load should result in less careful scrutiny of the factual and realistic nature of a message (Gilbert, 1991). The importance of attention as a processing mediator between sexual media exposure and effects is probably most relevant to adolescents in the context of multitasking.

Adolescents are estimated to multitask between half and three-fourths of the time they are engaged with media (Jeong & Fishbein, 2007). Although Collins (2008) found that watching television while surfing the Internet increased the sexual effects of media, another study (Jeong, Hwang, & Fishbein, 2010) found no significant relationship between television/Internet multitasking and sexual effects. Jeong et al. (2010) found, however, that exposure to sexual media had significantly less effect on subsequent sexual behavior for heavy media/nonmedia multitaskers (e.g., watching television while doing homework, listening to the radio while driving) compared with light media/nonmedia multitaskers. The conflicting findings suggest that more research is needed to distinguish the effects of media as the primary versus secondary task and any cumulative effects of media/media multitasking.

Involvement

In contrast to multitasking, which might inhibit elaboration, a highly involved viewer/reader/listener will be paying close attention to the media he or she is engaged with and be motivated to process it (Ward & Rivadeneyra, 1999; Peter & Valkenburg, 2010). In one correlational study, young adult female television viewers who reported high involvement in television shows with sexual content held more recreational attitudes toward sex and higher expectations of the sexual activity of peers, in keeping with the content they were watching (Ward & Rivadeneyra, 1999). A study of the effects of reality dating television shows on viewers' attitudes about sex and dating found that the positive correlation between watching the shows and having sexual beliefs similar to those portrayed in the shows (e.g., dating is adversarial, physical appearance is important in dating, men are motivated by sex) was fully mediated through viewer involvement (Zurbriggen & Morgan, 2006). Thus, the shows had more effect on viewers who were immersed in their viewing.

It is thought that greater involvement may make a media experience feel more like a real or personal experience, which may be especially likely for adolescents who have less personal sexual experience from which to draw. Peter and Valkenburg (2010), for example, found that adolescents who watched sexually explicit content on the Internet reported greater feelings of sexual uncertainty (unstable sexual beliefs and values) than adolescents who watched little or no sexually explicit content. The pattern was mediated by involvement and was stronger for females, suggesting that girls who are involved in their viewing of Internet pornography may be more susceptible to changing their existing sexual beliefs and values than those who look at the content in a more detached way. In another study, involvement was more predictive of expectations about sexual outcomes than amount of television viewed, suggesting that how television is consumed matters more than the volume of consumption (Ward &

Rivadeneyra, 1999). More research is needed to explore the gender differences found in some studies and also to better understand why some adolescents become more involved while engaging with media than others. Nevertheless, the level of involvement with which an adolescent consumes sexual media content (p. 232) appears to be an important determinant of the magnitude of effects.

Arousal

Physical and emotional arousal may also help explain the effects of exposure to sexual media content. When adolescents engage with sexual content in media they may become aroused sexually or in a more general physiological way (e.g., excitement, anticipation) (Hansen & Krygowski, 1994). Arousal is believed to operate as a processing mediator by both focusing the individual on the arousing content and strengthening the memory and retrieval functions of the brain related to the content. Peter and Valkenburg (2008) found that the relationship between viewing sexually explicit content online and sexual preoccupancy ("a strong cognitive engagement in sexual issues, sometimes at the exclusion of other thoughts," [p. 208]) was mediated by arousal. So if a teen was aroused when watching pornographic content online, then he was more likely to think a lot about sexual activities than the teen who was less aroused when watching. Arousal may also serve as a processing mediator for less explicit sexual content in the media, such as music videos, but little research has investigated this possibility.

Perceptions and Attachments

Perceptions of and attachment with characters and stories may also serve as processing mediators. Perceived similarity to and identification with media characters, as well as the perceived realism and desirability of characters' actions can affect the extent to which content will be believed and incorporated into the media consumer's life. The Message Interpretation Process (MIP) model incorporates a number of character and story elements to describe how adolescents process media messages (Austin & Meili, 1994; Austin & Knaus, 2000; Pinkleton, Austin, Cohen, Miller, & Fitzgerald, 2007). The MIP model posits that perceived realism of media portrayals (the authenticity of the character and storyline) influences adolescents' perceptions of similarity to and identification with the characters. Alternatively, adolescents may focus on the desirability of the media portrayals (believing the characters are happy and have a good life), which can also influence identification with the characters. The route through perceived realism is considered to be primarily logical, whereas the desirability route is more affective. Identification is predicted to influence outcome expectations about the behaviors within the storyline, and ultimately the viewer's own decision making.

For example, a teen may feel that a character on a popular television show is similar in some way and may think that the character's life is desirable. Portrayals of that character engaging in risky sexual relations (e.g., inebriated sex) with positive outcomes (e.g., the character is proud about the experience) may lead the viewing teen to expect that having sex after a night of excessive drinking is normal and likely to result in positive outcomes. Who identifies with which characters may depend on the viewer's existing sexual self concept. Sexual Sophisticates, for instance, may be quicker to identify with sexually expressive characters. Virgin Valedictorians, on the other hand, would be expected to find little in common with such characters.

The MIP model defines identification as wanting to be like the characters and to have a life like the storyline (Pinkleton et al., 2007). Other theorists have suggested that identification with characters is more about taking the perspective of a character by feeling as if you are experiencing the media situation as the character would (Cohen, 2001). Both identification and involvement speak to the importance of having the media experience feel real in the sense that a reader/viewer/listener experiences real emotions, imagines that the events are happening to them, and creates vivid images of the narrative (Green & Dill, 2013). Ward and Friedman (2006), for example, found in a correlational study that high school students who had higher levels of identification with popular television characters featured in shows with sexual content also reported more sexual experience (e.g., had a romantic relationship, had oral sex, had sexual intercourse). It may be that sexually experienced teens are emotionally attracted to characters who validate or share life experiences similar to their own, or, as predicted by the MIP model, that identification with sexual characters increases the likelihood that teens will adopt the behaviors of the characters.

Experimental evidence for the power of identification has been mixed. In one study with college students, intentions to practice safe sex measured immediately following exposure to a television show promoting safe sex were not

associated with identification with the show's characters (Moyer-Gusé & Nabi, 2010). A long-term effect, however, was found such that identification emerged as a significant mediating variable in a 2-week delayed posttest. Youth who identified more with the characters practicing safe sex were more likely to express intentions (p. 233) to practice safe sex in their own lives 2 weeks after the original exposure. This sleeper effect for identification may be the result of initial discounting of the show as unrealistic or fictional and over time forgetting the lack of realism but remembering the behavior.

Transportation

Much of the media content adolescents consume follows a narrative (story) structure. Growing scholarly attention has focused on the idea that powerful narratives can "transport" the reader or viewer into the story world (e.g., Green & Dill, 2013). Transportation occurs when readers are immersed in a narrative, so much so that it feels like they are experiencing that narrative world (they have been transported to it) (Green & Brock, 2000). Transportation is similar to involvement because both concepts entail being absorbed in media content. Unlike involvement, however, transportation does not necessarily lead to more elaboration about the people or issues in the media portrayal, but instead leads to a loss of the sense of or connection to the nonmedia world. Transported readers and viewers are less likely to notice others around them or to be thinking of contradictions in the narrative (Green & Brock, 2002).

Research has shown that greater transportation leads to greater persuasion or story-consistent beliefs (Green & Brock, 2000). There are three primary ways that transportation is thought to lead to greater persuasion: (1) making the narrative feel like a real experience, (2) suppressing counterarguing, and (3) promoting attachment to the characters within a narrative (Green, Garst, & Brock, 2004).

Thus far, little research has examined transportation in the context of sexual media content. In one study, however, participants read a story about a gay man witnessing homophobic behaviors during his college reunion and the more transported readers held more story-consistent beliefs about homosexuality after reading the story (Green, 2004). The quality of the story is believed to be crucial as to whether viewers/readers will be transported (Slater & Rouner, 2002); thus, we should expect that more engaging sexual stories will have more effect on sexual beliefs and behaviors.

Transportation may also promote interpersonal communication and health information seeking. In a three-wave survey study about a cancer subplot in the television show *Desperate Housewives*, viewers who reported being more transported over the course of the series were more likely to talk to other people about lymphoma and to seek out information about lymphoma compared with viewers who were less transported (Murphy, Frank, Moran, & Woodley, 2011). Thus, the extent of transportation into a media story may be an important predictor of when exposure to sexual media will stimulate adolescents to seek supplemental information on their own or by talking with others. By teaching the audience and cuing information seeking, media programs may act as health educators.

Resistance to Persuasion

Resistance to persuasion is a reaction, either automatic or conscious, against a message in response to some perceived pressure for change in belief, attitude, or behavior (Knowles & Linn, 2004). Resistance to persuasion has rarely been examined as a processing mediator in sexual media effects research, perhaps because sexual content in media (e.g., a romantic date scene on a teen television show or explicit lyrics in a popular teen song) is rarely seen as designed to be persuasive.

Classic forms of resistance to persuasion include reactance and counterarguing. A media consumer is said to experience reactance and is predicted to reject the message when she feels a message threatens one of her freedoms (i.e., freedom of choice) (Brehm & Brehm, 1981). Reactance is triggered by an awareness of persuasive intent (Dillard & Shen, 2005; Moyer-Gusé, 2008). In the context of sexual media effects, reactance could occur, for example, when an adolescent posts a sexually degrading song on a friend's Facebook page, suggesting that the song's lyrics will help him deal with his girlfriend's "drama." The recipient of the song may react negatively, feeling like his friend is trying to limit his freedom. His girlfriend may see the post and react against it as well. Reactance could also occur when storylines on television become overtly persuasive or are seen as "educational" rather than simply entertaining.

Counterarguing occurs when a person generates thoughts that rebut or refute a persuasive statement or position within the narrative (Busselle, Bilandzic, & Zhou, 2009; Moyer-Gusé & Nabi, 2010). Cacioppo (1979) operationalized counterarguments as "statements directed against the advocated position that mentioned specific unfavorable consequences, statements of alternative methods, challenges to the validity of arguments in the message, and statements of affect opposing the advocated position" (p. 494). Counterarguing may occur if a teen notices something that seems unrealistic (p. 234) or counter to his or her experiences. For instance, a character in a television show may say something like, "My mom would be happy if I were a teen parent." This statement is likely counter to the existing beliefs of many teens and may elicit a counterargument in which the viewer says aloud or to himself or herself, "That's not the way my mom would react. This show is dumb."

Moyer-Gusé and Nabi (2010) found that after viewing a television scene in which the characters positively discussed using condoms, participants who reported stronger reactance against the safe sex portrayal were the least likely to report intentions to practice safe sex themselves. Unexpectedly, however, counterarguing did not have a significant effect on safe sex intentions. Clearly more research is needed to sort out these different forms of reaction to messages youth may see as trying to persuade them to engage in healthy or unhealthy sexual behavior.

Interpretation

Most of the processing mediators discussed thus far are automatic or even nonconscious, but media can also evoke conscious processing and interpretation of the messages and values depicted in the content. Interpretation is the meaning-making process through which adolescent consumers form attitudes, beliefs, norms, scripts, and intentions related to sexual behavior. The mostly qualitative research that has focused on the ways in which youth understand sexual messages in the media has shown that interpretations are often quite varied. Typically interpretations fall into three main categories identified originally by British cultural studies scholars (e.g., Hall, 1980) as "preferred," "oppositional," or "negotiated" from the point of view of the intentions of the media producer.

Some media texts and genres are more open to interpretation than others, and sometimes it is not clear what the producer intended. A study of pop star Madonna's early music video "Papa Don't Preach" illustrates both points. In that song, Madonna sings, "Papa don't preach, I'm in trouble deep, I'm going to keep my baby." Whereas white female college students interpreted the lyrics and images to mean the teen girl in the video was pregnant and intended to keep the child, black males thought the "baby" she was singing about was her boyfriend. In this case, and as often is the case with media produced primarily for entertainment, Madonna refused to say what her intended meaning was when health advocates criticized the video as a "commercial for teen pregnancy" (Brown & Schulze, 1990). Clearly, however, the different interpretations would be related to different kinds of effects—young female viewers focused on the pregnancy might be persuaded that keeping the child would be the best option, whereas young male viewers might not be thinking about pregnancy at all, but rather about how to navigate romantic relationships.

Too few studies have taken into account the varied interpretations possible as teens come to content from different backgrounds, with different motivations, beliefs, and expectations. As the MPM posits, such variations are likely and will affect subsequent outcomes, both behavioral and prebehavioral.

Prebehavioral Outcomes

A number of theories have been used to explain sexual media effects, such as Social Cognitive Theory, Cultivation Theory, Uses and Gratifications, and Priming. These theories support the idea that prebehavioral outcomes such as attitudes, social norms, outcome expectations (or scripts), self-efficacy, beliefs, and intentions may be affected by media exposure and ultimately contribute to sexual behavior.

Social cognitive theory helps explain how adolescents interpret the sexual content in media message and may come to imitate that behavior (Bandura, 1986). According to the SCT, characters in the media act as models that help adolescents predict likely consequences of sexual beliefs, attitudes, and behaviors. When a media character is rewarded for his or her behavior, an adolescent viewer may be motivated to imitate that behavior; the adolescent's desire to imitate will be suppressed if the modeled behavior is punished or not rewarded. Perceived similarity of the characters will moderate the relationship between exposure and effects, such that similar

characters should have stronger effects.

According to Bandura (2004), media influence behavior directly and through social mediation. In the direct pathway, media content affects behavior by informing, modeling, motivating, and guiding imitation. In the socially mediated pathway, media serve to link individuals to social networks (e.g., Facebook, You Tube) and community settings, which provide the guidance, incentives, and social supports that reinforce behavior. Social cognitive theory suggests that outcome expectations associated with a sexual behavior are likely to be a crucial mechanism that helps explain how exposure to sexual content in the media results in behavioral effects. Self-efficacy, an individual's belief that she can do the action to produce the desired result, (p. 235) is also an important motivator in SCT (Bandura, 1997). In their three-wave survey of adolescents, Bleakley, Hennessy, Fishbein, and Jordan (2009) found that self-efficacy for having sex was greater among youth who used friends and media as sexual information sources.

The basic idea of Cultivation Theory is that over time and repeated exposure to similar television content, viewers will begin to adopt views of the real world consistent with those portrayed on television (Gerbner & Gross, 1976). Most research on cultivation has focused on the extent to which television presents a distorted portrait of life. The cultivation effect may occur as some ideas (e.g., boys are preoccupied with sex) are frequently portrayed, and thus become salient and accessible (Shrum, 1996). Adolescents may form beliefs about expected sexual behavior and norms based on the distorted view of reality presented within the television shows they attend to most frequently. More research is needed to understand what, if any, relevance this theory may have for exposure to social media and other platforms increasingly popular with adolescents.

Uses and Gratification Theory posits that the motivations with which consumers come to the media will affect what they take away (Rubin, 1984). In one study, for example, college males who said they used sexual television to learn had stronger expectations about the variety of sexual behaviors that should occur within a romantic relationship than their counterparts who were not watching to learn anything (Aubrey, Harrison, Kramer, & Yellin, 2003). Ward (2002) similarly found that women who used television as a learning tool and for entertainment were more likely than those with different motives to believe in traditional gender roles and have stereotypical attitudes about sex and dating.

Priming Theory, in the context of sexual media effects, involves the activation of sexual scripts by relevant media content (Huesmann, 1988). To illustrate how this might work, in one study, college students either listened to sexually provocative lyrics or innocuous music immediately before viewing and evaluating online dating profiles of potential partners. Those who had been primed by the sexual lyrics were more likely to focus on the sexual characteristics of the potential partner than those who listened to the less provocative music (Dillman-Carpentier, Knobloch-Westerwick, & Blumhoff, 2007). Although priming effects are believed to last for only minutes, research suggests that some scripts are activated through primes so frequently that they become more accessible (Roskos-Ewoldsen, Roskos-Ewoldsen, & Dillman-Carpentier, 2009). Because much of the media draw on dominant sexual scripts, these frequently primed scripts may have a greater influence on beliefs and behavior over time than scripts that appear less frequently. Such a pattern would help explain the effect hypothesized in the Cultivation Theory.

Attitudes

In a comprehensive review of the research on television's effects on sexual behavior, Ward (2003) concluded that attitudes formed by television viewing were an important precursor to sexual behavior. Some studies have found, for example, that teens who watch more prime time television shows with sexual content are more likely than teens who view less frequently to think sex is primarily recreational rather than part of a relationship or for procreation (Ward & Friedman, 2006). We would reasonably think that such attitudes would be related to subsequently different patterns of sexual behavior.

A number of studies have found that exposure to some kinds of sexual content can affect sexual attitudes. Greeson and Williams (1986), for example, found that watching sexy music videos resulted in more positive attitudes about premarital sex. MacKay and Covell (1997) conducted an experiment in which emerging adults either viewed advertisements with sexual themes or advertisements that depicted females in progressive roles. Participants who saw the sexual advertisements reported more sexually aggressive attitudes (e.g., rape myth acceptance and adversarial sexual beliefs) and less supportive attitudes toward feminism.

Norms

One concern about the frequency with which young media characters engage in sexual behavior is that adolescent viewers will think that most adolescents are having sex and maybe they should be too. In an early correlational study, Davis and Mares (1998) found that frequent television viewers overestimated how many youth were sexually active and/or pregnant. One longitudinal study has found that feelings of pressure to have sex are stronger for teens with heavier sexual media diets (Bleakley et al., 2008). Another longitudinal study (Martino, Collins, Kanouse, Elliott, & Berry, 2005) also found that heavier sexual media diets were marginally predictive (p).05 and (.10) of less healthy normative beliefs about sex (e.g., those with heavier sexual media diets believed more of their friends (p. 236) were having sex), which in turn predicted sexual initiation.

Two correlational studies of college males suggest that media portrayals can influence perceptions of peers' sexual activity and that those normative perceptions influence casual sexual behavior (Chia & Gunther, 2006). Ward, Epstein, Caruthers, and Merriwether (2011) found that reading men's magazines (e.g., *Maxim*) and watching movies was positively associated with higher estimates of peers' sexual risk taking and more permissive attitudes about sexual behavior. Both attitudes and perceptions of peers' behavior were positively associated with earlier sexual debut.

Outcome Expectations

A great deal of survey and experimental research has documented an association between sexual media exposure and sexual outcome expectations and scripts. Aubrey et al. (2003), for example, found that females who watched television frequently expected that sex would occur earlier in a romantic relationship than females who watched less television. In an experimental test of the effects of reward versus punishment in portrayals of sexual intercourse, Eyal and Kunkel (2008) found that outcome expectations aligned with the media portrayals participants viewed.

Two longitudinal studies have found support for outcome expectations as an underlying mechanism between exposure to sexualized media content and behavior (Martino et al., 2005; Fisher, Hill, Grube, Bersamin, Walker, & Gruber, 2009). In the Fisher et al. study, teens with heavy sexual media diets were more likely to believe that sex would lead to positive outcomes such as feeling more grown up and preventing a relationship from ending. Martino et al. found that teens with heavy sexual television media diets were also less likely than teens with lighter sexual media diets to have negative outcome expectancies—such as that sex will result in a bad reputation or pregnancy. Lower negative outcome expectancies were marginally significant predictors for sexual initiation.

Self-Efficacy

In a survey, adolescents who reported movies, Internet, or magazines as their primary source of information about sex were more likely to have greater self-efficacy that they could have sex even if they encountered obstacles such as upset parents or intoxication, than adolescents who did not report any form of media as a primary sexual information source (Bleakley et al., 2009). Given the rarity of portrayals about practicing safe sex, a longitudinal study surprisingly found that the teens with heavy sexual media diets had greater self-efficacy for practicing safe sex than teens with lighter sexual television media diets. Further analysis revealed that teens with greater safe sex self-efficacy were more likely than teens with lower self-efficacy to practice safe sex (Martino et al., 2005).

In sum, existing research supports the notion that exposure to sexual media content will not result in uniform effects across the adolescent population. How youth engage with sexual media at the moment of exposure is likely to influence the effects of that exposure. The extent of attention, involvement, arousal, perceptions of and attachment with characters, transportation, and resistance to persuasion can mediate the relationship between exposure and effect, creating differential effects. We have also discussed that adolescents must also make sense of what they are seeing and hearing as they sort through the multiple, and sometimes mixed, messages about sexuality available in media.

The media provide sexual information and models that adolescents use to form and refine their sexual attitudes, norms, outcome expectations (or scripts), and sense of sexual self-efficacy. A number of studies, correlational, longitudinal, and experimental, provide empirical evidence that such prebehavioral sexual outcomes are affected

by sexual content in the media. Some outcomes and processing mediators, such as sexual attitudes and involvement, have been studied more thoroughly than others. Other mediators and outcomes such as transportation and resistance to persuasion deserve more attention. As youth become creators and distributors of media (e.g., You Tube, sexting), more research is needed to better understand the role of engagement and interpretation in the new media landscape. How adolescents engage with and interpret media messages to form sexual attitudes, beliefs, norms, scripts, and behavioral intentions likely mediate the relationship between sexual media exposure and sexual behavior, thus resulting in various sexual media effects. Although the focus of this chapter is on media effects, it is important to note that many other factors, such as opportunity to act and parental monitoring, are likely to influence adolescent sexual behaviors.

Application

The process of adolescents moving from engagement with sexualized media to incorporation of these messages in their lives is called application in (p. 237) the MPM. It is in the application stage that adolescents will try out various behaviors to see what they feel like, if outcomes align with their expectations, and how their peers react. We define sexual behavior broadly to include not only sexual intercourse, but also other precoital behaviors such as treatment of romantic partners, sexual talk, sexual touching, and use (or not) of contraception.

Two excellent scholarly reviews generally support the assertion that exposure to sexual content in media affects adolescents' sexual behavior (American Academy of Pediatrics, 2010; Wright, 2011). Wright (p. 360), for example, concluded that "all five longitudinal studies and all three national studies found a main or moderated effect" between sexual media exposure and virginity status. Exposure to sexual media content has also consistently been linked to earlier initiation of sexual intercourse, even after controlling for dozens of likely covariates.

The Teen Media project, for example, a two-year longitudinal study, found that 12- to 14-year-old white adolescents who had heavier sexual media diets (television, music, movies, and magazines) were 2.2 times more likely to have had sexual intercourse by the time they were 16 years old, than white teens with lighter sexual media diets (Brown, L'Engle, Pardun, Guo, Kenneavy, & Jackson, 2006). In a national longitudinal study that assessed exposure to sexual content only on television, Collins, Elliott, Berry, Kanouse, Kunkel, Hunter, and Miu (2004) similarly found that adolescents who were exposed to high levels of sexual content (90th percentile of exposure) were twice as likely as adolescents who watched little sexual content on television (10th percentile) to initiate sex within a year of the baseline survey.

Four studies also have examined the influence of sexual media diet on precoital behaviors (e.g., touching, oral sex) and found support for the effect of media on these behaviors, as well (Wright, 2011). At least four studies have also examined whether sexual media diet has an effect on the number of sexual partners. Wright (2011) concluded that there was "suggestive evidence" but noted that the evidence was not as compelling as the research on precoital and coital sexual initiation (p. 366).

Use of birth control, pregnancy, and STIs as well as other sexual behaviors have also been studied as possible sexual media effects. With a national sample of teens, a three-wave longitudinal study found that teens in the 90th percentile of sexual television exposure were twice as likely to have experienced a teen pregnancy than teens in the 10th percentile of exposure (Chandra, Martino, Collins, Elliot, Berry, Kanouse, & Miu, 2008). Other studies have found associations between watching professional wrestling and lower rates of birth control use (DuRant, Neiberg, Champion, Rhodes, & Wolfson, 2008), and exposure to rap music among black teen girls and testing positive for an STI (Wingood, DiClemente, Bernhardt, Harrington, Davies, Robillard, & Hook, 2003). Longitudinal studies of adolescents also have found that exposure to more sexually explicit content predicted perpetration of sexual harassment among males and earlier oral sex and sexual intercourse among male and female adolescents (Brown & L'Engle, 2009), uncommitted sexual exploration (i.e., one-night stands, hooking up) (Peter & Valkenburg, 2010), as well as sexual violence (Ybarra et al., 2011).

A few longitudinal studies suggest that the relationship between exposure to sexualized media and sexual behavior may best be characterized as one of reciprocal causation. One three-wave study of adolescents found that those adolescents who were sexually active (pre-coital or coital) at baseline were more likely to have heavier sexual media diets (television, music, magazines, and video games) in subsequent waves of the survey. Such consumption of sexualized media subsequently increased the probability that adolescents progressed in their level

of sexual activity within the following year (Bleakley et al., 2008).

Distribution/Creation as a Sexual Behavior

In the 20th century we were primarily concerned about young audiences' interaction with sexual content in professionally produced mass media: music, television programs, films, and magazines. Today, these young audiences also play an active role in producing and circulating sexual content. This has been facilitated by increasingly easy access to inexpensive production hardware (e.g., digital cameras, smartphones), editing software, and dissemination platforms (e.g., social media). Young people today are "prosumers" (Toffler, 1980), both producers and consumers, of sexual media content.

We understand youth-produced sexual media broadly, as any sexual content that youth transmit to audiences via communication technologies. This may include a self-description in a Facebook profile that characterizes the profile owner as a "boob girl"; a Facebook photograph that depicts the profile owner suggestively licking a lollipop; a text message with a nude photograph of the sender; a link to a sexual music video posted on Facebook or (p. 238) Twitter; or a video created from photos of scantily clad celebrities posted on You Tube.

The production and dissemination of such sexual content fits best on the "Application" arch of the MPM. These acts may also be characterized as sexual self-presentations or sexual self-disclosures. We thus address two broad issues: Who are the young people who engage in mediated sexual self-disclosure? and What are the implications of sexual self-disclosure for these youth?

Who Produces Sexual Media Content?

The way individuals present themselves and what they disclose about themselves is shaped through an interplay of their personal attributes, the characteristics of their audience, and the context of their disclosure (Leary, 1995; Schlenker, 2005). Among personal characteristics, an adolescent's sexual self-concept may be one of the most salient predictors of sexual self-disclosure. Those items that are more vital, more centrally located within the self-concept, have a greater likelihood of being readily displayed (Schlenker, 2005). Youth for whom sexual identity is a more salient component of the self-concept likely engage in more sexual self-disclosures, whereas youth for whom sexuality is not an important characteristic are more likely to refrain from disclosing sexually.

Research has supported this association. Sexually active emerging adults and those with a history of casual sex presented more sexual self-disclosures in their MySpace profiles than their peers who have not had sex or who engaged in less risky sex (Bobkowski, Brown, & Neffa, 2010). In an experiment, girls who had suffered sexual abuse as children were more likely to select sexier characters (i.e., avatars) to represent them in an online game than matched girls without a history of abuse (Noll, Shenk, Barnes, & Putnam, 2009). Thus, youth for whom sex figures more prominently as a component of their identities, as measured by a history of sexual behavior, are more likely to be sexual content producers.

Certain personal dispositions may curb sexual self-disclosure among some young people and promote it among others. Self-monitoring (Fuglestad & Snyder, 2009) is one individual characteristic closely associated with self-disclosure. Self-monitors tend to be concerned about situationally appropriate self-presentations more than self-presentations that accurately reflect their self-attributes. Bloggers who are high self-monitors, for instance, updated their blogs more frequently and were more concerned about managing what they share with their audiences and what they keep private than bloggers who are low self-monitors (Child & Agyeman-Budu, 2010).

Youth who are high self-monitors may be less likely to self-disclose sexually if they perceive that some in their audience may consider such disclosure as inappropriate. Other attributes such as self-consciousness, social anxiety, and inhibition, have been associated with overall lower online self-disclosure among adolescents (Schouten, Valkenburg, & Peter, 2008).

Young people with good offline social skills, meanwhile, have been shown to use the Internet to enhance their offline relationships (Peter, Valkenburg, & Schouten, 2005; Schouten et al., 2008; Valkenburg & Peter, 2009).

In general, research suggests that online sexual content may be produced by those youth who are also more likely to engage in sexual self-disclosure in offline contexts. More research is needed to understand the extent to which

online platforms might promote sexual self-disclosure among youth who are not predisposed to this behavior offline.

It is also important to consider the audience-related goals that motivate a young person to portray herself sexually in a digitally mediated context. The primary audiences for disclosures made in social networking websites, for instance, are friends and other individuals whom a user knows offline (Manago, Graham, Greenfield, & Salimkhan, 2008; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). The way a youth relates to these offline friends and his or her goals for these relationships will thus determine how the adolescent presents himself or herself online, and whether it is done in a sexual way. Friendship group norms also inform the way that a young people digitally present themselves. In what an adolescent communicates about his or her sexual self, a youth is likely to conform to what his or her friends find appropriate and the way they present themselves online (Liu, 2007). An analysis of online religious self-disclosure showed that, holding their religiosities constant, MySpace users whose friends were religious were three times as likely to identify religiously in their profiles as users who had no religious friends (Bobkowski & Pearce, 2011). As with other behaviors, both problematic and prosocial, friends influence how young people present themselves in new media.

Because online communication often takes place asynchronously, individuals have more time online than they do in face-to-face interactions to construct their self-presentations. Online users also have fewer (p. 239) identity cues to control than individuals communicating in person. Internet users thus harness these unique characteristics of online communication to selectively and favorably present themselves to their audiences (Walther, 1996, 2007). Young people's digital sexual self-disclosures may deviate from the ways in which they present themselves offline. The Theory of Symbolic Self-Completion (Wicklund & Gollwitzer, 1982), for instance, suggests that individuals who are committed to a specific identity but feel that they have not fully lived out this self-definition, will use symbols to approximate their desired self. Thus, in one study, undergraduate MySpace users said that online profiles allow them and their peers to present not only their actual selves, but also the selves they aspire to become (Manago et al., 2008). Youth who perceive themselves as sexy or who want to be seen as such, may use online sexual self-disclosures to symbolically communicate a sexual identity to their audiences and themselves. Conversely, however, some youth may use online technologies to tone down their offline sexual portrayals or reputation.

Because offline friends are the primary audiences on social networking sites, the extent to which young people are able to embellish their offline identities in online spaces may be limited. In instances in which individuals who do not know each other offline connect online, the new visitor to a profile may look for difficult-to-change data such as friends' posts and photos to corroborate the accuracy of online self-claims (Walther, Van Der Heide, Hamel, & Shulman, 2009; Gibbs, Ellison, & Lai, 2011). Online users' preference for confirmatory information that cannot be manipulated by the presenter is known as the warranting principle (Walther & Parks, 2002). A youth who uses the Internet to meet a potential friend or mate will ask, "Is what she is saying about herself online warranted by what her friends are saying about her and by what she looks like in pictures?"

What Are the Effects of Producing Sexual Media Content?

Understanding the characteristics of youth who produce and distribute sexual media content is important in light of the potential effects of such production. Sexual self-disclosure online puts youth at greater risk for offline sexual encounters. Young people who communicate with strangers via the Internet about sex are more likely to receive aggressive sexual solicitations than young people who do not engage in such behaviors (Wolak, Finkelhor, Mitchell, & Ybarra, 2008). In an experiment, girls who chose sexualized avatars in a virtual environment were more likely to be approached in sexual ways by other characters, and were also more likely to have met someone offline (Noll et al., 2009).

Beyond this increased risk of victimization, a young person's digital, sexual self-disclosure may reinforce the centrality or salience of sexual self-concepts within his or her broader identity. Studies have shown that affirming a particular position or enacting a behavior results in the internalization of that position or behavior within one's self-concept, especially when the position or behavior is performed publicly for an audience (e.g., Fazio, Effrein, & Falender, 1981; Kelly & Rodriguez, 2006). This "identity shift" dynamic has been shown to operate in online environments. For instance, participants whose interview responses were published in a public blog and who answered the interview questions as extroverts scored higher on a subsequent extroversion scale than those who answered the questions as introverts (Gonzales & Hancock, 2008). Participants in the introverted and extroverted

conditions who answered questions in a text document that was not going to become public did not differ in their extroversion scores. Research conducted in virtual environments has also shown that participants take on attributes of the virtual characters (i.e., avatars) to whom they are assigned. Thus, participants assigned to "be" more attractive avatars were more extroverted than participants assigned to be represented by less attractive avatars, and those assigned to taller avatars acted more aggressively than those with shorter avatars (Yee & Bailenson, 2007).

Researchers have suggested two mechanisms that may account for this internalization of outward characteristics. Drawing on Self-Perception Theory (Bem, 1972), some have argued that individuals look to their self-presentations and self-disclosures to inform their self-concepts (e.g., Yee, Bailenson, & Duchenaut, 2009). Others have argued that the public nature of a self-presentation commits the presenter to be and act consistently with what is publicly disclosed (Kelly & Rodriguez, 2006; Gonzales & Hancock, 2008). According to the "public commitment" perspective, individuals thus strive for their self-concepts to match their self-presentations.

The exact means by which internalization occurs deserves further attention and the two mechanisms mentioned here may not be mutually exclusive. The literature does suggest that when young people (p. 240) portray themselves sexually in social media or send sexual text messages, they position their sexual attributes more centrally within their self-concepts. When repeated, such sexual self-presentations may lead to an ingraining of the sexual attributes, a reordering of self-understandings to prioritize the sexual aspects of the self over other characteristics. Although research has tested only the short-term effects of internalizing online disclosures (e.g., Gonzales & Hancock, 2008), studies on virtual environments have suggested that these effects may linger beyond the duration of an experimental manipulation. In one study, participants playing a card game against avatars who appeared shorter than themselves played more aggressively even after they were taken out of the virtual environment than those playing against avatars who appeared taller (Yee et al., 2009). In another experiment, participants who observed avatars who looked like them and who exercised on a treadmill, reported engaging in more exercise in the 24 hours following the experiment than participants who observed avatars who looked like them but who did not exercise (Fox & Bailenson, 2009). Such empirical evidence supports the notion that engaging in public sexual self-disclosures may lead to a sexualization of the self-concept.

Audience feedback is an essential component of the interactive digital media world. Each sexy photo that a youth posts on Facebook, for instance, is likely to generate comments from her Facebook friends. Research has shown that the identity shift is magnified when an online self-presentation is followed by a feedback message affirming the presented self-attributes (Walther, Liang, DeAndrea, Tong, Carr, Spottswood, et al., 2011). For example, study participants who answered interview questions as extroverts and who received a message affirming their extroversion, scored higher on a subsequent extroversion scale than those who did not receive a feedback message. Participants in the introverted condition who received a message affirming their introversion scored lower on the extroversion scale than those who did not get feedback.

From the perspective of public commitment, feedback may communicate to the presenter the level of commitment to which he or she has obligated himself or herself through the self-presentation. Although research has thus far examined only the effect of positive feedback, it is possible that a young person who receives little feedback or whose friends' comments are tepid or negative will not internalize the sexual elements disclosed digitally to the extent that a youth who receives positive, lavish, and enthusiastic friends' comments will. Negative feedback, however, may also have negative consequences, especially for youth who already have less self-esteem than their peers (e.g., Brockner, Derr, & Laing, 1987). In some cases, negative feedback may even rise to the level of cyber bullying, particularly when it is repeated, hostile, and meant to inflict harm or discomfort (Tokunaga, 2010). Feedback to sexual self-disclosures may also take the form of unwanted sexual solicitation, which is more likely when youth communicate with strangers about sex (Wolak et al., 2008). Whether negative or positive, feedback is a key characteristic of new media environments and must be considered when examining the ways in which young people perceive and communicate their sexual selves.

Researchers have only begun to examine the function of sexual self-disclosure within the digital media environment and much work remains to be done. For one, the effects of the mediated self-disclosure that we have discussed here (e.g., internalization, feedback) have not been tested within the context of sexual self-disclosure. The hypotheses presented here need careful scrutiny using innovative, ethically conducted study designs. Second, although in this discussion we have not distinguished between different types of sexual self-disclosure, all

sexual self-disclosures are not the same and their effects are also likely to be disparate. Even within the same communication venue such as Facebook, content disclosed via different communication modes will likely generate unique effects. Posting one's sexy photos in a Facebook photo album is different from sending a private message with a sexy photo attached, and different still from posting a Facebook status update about the sexual appeal of a celebrity. The intensity of the content, the intended goals of the disclosure, and the audience response to the disclosure all contribute to the differential effects that each of these disclosures may stimulate.

Finally, we have emphasized the potentially negative effects of sexual self-disclosure rather than the potentially constructive ways in which new media may facilitate composing and communicating the sexual self. The Internet offers unprecedented opportunities for connecting with remote like-minded individuals and for exploring and affirming identities, especially for those who are otherwise stigmatized (McKenna & Bargh, 1998). Gay and lesbian youth, for instance, may find positive peers and mentors in online communities, and these relationships may facilitate the rehearsal of disclosing their sexual orientations, same-sex friendships, attractions, and (p. 241) sexual expressions (Hillier & Harrison, 2007). More research is needed to understand the ways in which digital media help young people engage in positive sexual development. These and other potentially constructive outcomes of sexual disclosure via new media underscore the need for new media literacy initiatives that educate youth about both the risks and opportunities of sexual self-disclosure in online contexts.

Conclusion

"Protecting" Youth from Harmful Effects

As evidence has accumulated that media play an important role in adolescents' sexual socialization, different strategies have been proposed to address potentially harmful effects and increase the possibility of sexually healthy outcomes. Health organizations, such as the American Academy of Pediatrics and the American Medical Association, have issued policy statements calling on parents, medical professionals, and the entertainment media to limit children's exposure to unhealthy media messages about sex, and increase access to information about contraceptives and healthy sexuality (American Academy of Pediatrics, 2010). The courts have forbidden sexually explicit content that features children (child pornography), but have been reluctant to restrict the distribution of other kinds of sexually explicit material because such regulations could infringe on adults' free speech rights (Iannotta, 2008). Ratings systems for movies, television, and video games that specify the amount and sometimes kind of sexual content have been developed but often are inconsistently applied, not understood or used by parents, and may actually stimulate some adolescents to taste the forbidden fruit (Gentile, 2008).

Media literacy education (MLE) is another strategy that holds some promise and speaks more to the idea of young people as active media consumers and producers. Media literacy education programs have been designed to teach young people about the production process of media and critically evaluate media content; many include media production skills training, as well (Chakroff & Nathanson, 2008). Although few systematic field tests of MLE curriculum have been conducted, a few have been shown to be effective in changing attitudes about substance use in early adolescence (Austin & Johnson, 1997; Pinkleton et al., 2007; Kupersmidt, Scull, & Austin, 2010) and body image issues and eating disorders in late adolescence (Irving & Berel, 2001; Watson & Vaughn, 2006). A meta-analysis of 27 large randomized control trials of university-based health promotion programs found that the MLE programs were more successful at changing body image outcomes than knowledge-based and cognitive behavioral interventions (Yager & O'Dea, 2008).

Although more research and theorizing about how media literacy education works is needed (Chakroff & Nathanson, 2008), successful MLE interventions apparently alter media-related cognitions, such as reducing the perceived realism of and similarity to media portrayals by engaging youth in message deconstruction exercises. Such skill development is expected to change adolescents' cognitions and attitudes about the unhealthy behavior and beliefs about the normativeness of the behavior (Pinkleton, Austin, Cohen, Chen, & Fitzgerald, 2008). Production exercises help young people see that material has to be cut and constructed, and learn first-hand persuasion techniques. Media literacy education typically includes training in the persuasive techniques used by media creators, which can enhance skepticism in media messages and also help make adolescents aware of persuasive intentions, which in turn may promote greater resistance to persuasion. Changes in attitudes and beliefs, in turn, are predicted to result in decreased intentions to enact the unhealthy behaviors.

Only a few curricula have applied MLE to sexual health. One, "Take it Seriously: Abstinence and the Media," developed and evaluated in Washington state, is a five-lesson peer-led MLE program aimed at early adolescents. The evaluation field experiment showed that students who participated in the lessons had more accurate normative beliefs regarding teen sexual activity, perceived sexual portrayals in the media as less realistic, were more likely to believe that media messages influence adolescents' sexual behaviors, had lower positive expectations about what would happen if they had sex, and more positive attitudes about abstaining from sex (Pinkleton et al., 2008).

Other such curricula are needed for older adolescents that focus not only on abstinence, but also on contraception and other aspects of sexual relationships. Young people also need guidance on how to use the Internet and interactive media in sexually healthy ways. Buhi et al. (2009) concluded from their study of college students' use of the Internet for sexual health information that even older adolescents and young adults need training in how to find and distinguish accurate information online.

(p. 242) Using Media for Sexual Health

Media have also been used to promote healthier sexual behavior. Effective mass and new media campaigns promoting abstinence, teen pregnancy prevention, condom use, and HIV testing have been run in countries around the world, as well as in the United States. Some have taken a social marketing approach, including public service announcements as well as other media strategies. Some have included entertainment-education, in which educational messages are embedded in entertaining content. Other interventions are making use of newer media, such as interactive websites and cell phones to attract and engage youth in healthy sexual practices (for reviews, see Brown, 2008; Collins, Martino, & Shaw, 2011).

Sexual Health Mass Communication Campaigns

Mass communication campaigns are defined as organized sets of communication activities, intended to generate specific effects in a relatively large number of individuals, and usually within a specified period of time (Rogers & Storey, 1987). The Two-City Safer Sex campaign run in Kentucky in 2003 is one of the best examples of the successful use of mass media for sexual health in the United States. Designed to promote condom use among older adolescents and young adults (18–23 years old), messages were tailored to appeal to high sensation seekers and impulsive decision makers who were most likely to engage in sexual risk taking. Ten safer sex PSAs were aired for 4 months during programs known to be popular with the target audience. A 21-month controlled time-series evaluation beginning before the campaign and continuing for 10 months afterward documented high exposure to the ads, and increased condom use self-efficacy and use for 3 months after the campaign (Zimmerman, Palmgreen, Noar, Lustria, Hung-Yi, & Horosewski, 2007).

Meta-analyses of the effectiveness of media campaigns have found that such campaigns can be effective (Snyder & Hamilton, 2002). Media campaigns are an attractive strategy even though the proportion of people who change their behavior typically is modest because a campaign can reach much larger segments of the population than individual or group-based interventions. A review of international and US campaigns designed to improve sexual health among adolescents and a 10-year (1998–2007) systematic review of HIV/AIDS mass communication campaigns focused on sexual behavior, HIV testing, or both concluded that successful campaigns draw from behavior-change theories, have clear target audiences, use multiple media channels, and strive for long-term exposure and sustainability (Brown, 2008; Noar, Palmgreen, Chabot, Dobransky, & Zimmerman, 2009). Media campaigns conducted as part of community-based programs supported by behavior change policies and available services, such as school-based health clinics and comprehensive sex education, are most likely to be effective (Wakefield, Loken, & Hornik, 2010).

Entertainment-Education

Entertainment-Education (E-E) is the intentional placement of education content in entertainment messages (Singhal & Rogers, 2002). Entertainment-Education is a versatile approach because media characters in different kinds of media and genres can be used to model behavior, teach skills, provide behavioral cues, and simulate consequences of behaviors over time in a compelling way (Green, Strange, & Brock, 2002). Used effectively for many years around the world to promote sexual health practices such as condom use and HIV testing, E-E also has been used in the United States by organizations such as the Centers for Disease Control and Prevention, and

the National Campaign to Prevent Teen and Unplanned Pregnancy.

The National Campaign, for example, consulted with MTV producers as they developed the *16 and Pregnant* reality television series that featured 16-year-old girls dealing with the challenges of teen pregnancy. The Campaign developed discussion guides for each show that MTV then distributed with a DVD of the first season's six episodes to the more than 4,000 Boys & Girls Clubs of America. Evaluations showed that club teens who saw and discussed the shows were more likely than those who did not see or discuss the shows to talk with a parent or friend about teen pregnancy (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2010).

Previously, the Kaiser Family Foundation (2004) had partnered with MTV's parent company Viacom to sponsor the KNOW HIV/AIDS campaign that included PSAs and print and outdoor advertising worth more than $120 million. Viacom also directed the producers of its television programs to include storylines that would raise awareness about AIDS and encourage prevention, counseling, and testing. Surveys showed that the campaign was especially effective in increasing awareness and intentions to practice safe sex among adolescent blacks who had seen Black Entertainment Television (BET)'s campaign component called "Rap It Up."

(p. 243) In other countries, whole programs and long story lines have focused on characters who serve as positive or negative models of sexual behavior for viewers. *Soul City*, a long-running E-E campaign in South Africa, was a prime-time television drama series that addressed various health-related topics each year, including HIV prevention and control. Using pre- and posttest panel surveys, evaluations showed that the broadcast was associated with increases in knowledge of HIV transmission and prevention, positive attitudes toward condom use, and increases in prevention behaviors (Singhal & Rogers, 2001).

Systematic evaluations of E-E messages on attitudes toward safer sex are rare in the United States, but generally positive. In one study, female participants who read an excerpt from a romance novel that mentioned condom use reported more positive attitudes and stronger intentions to use condoms than participants who read a similar excerpt that did not mention condom use (Diekman, McDonald, & Gardner, 2000). In another experiment (Farrar, 2006), college students who watched a prime time dramatic program featuring sexual intercourse and a safe sex message had more positive attitudes toward condoms than students who saw similar depictions without mention of condoms.

Although more theoretical work to understand the mechanisms by which narrative persuasion works is needed (Moyer-Gusé & Nabi, 2010), preliminary theorizing suggests that because the narrative's message is directed at the character, the reader/viewer may not see the message as manipulative, and persuasive defenses such as selective exposure and attention are circumvented. Some theorists also suggest that highly engaged (transported) viewers are devoting all of their cognitive energy to constructing a mental model of the story, making critical thinking less likely and emotional attachments more likely (Busselle et al., 2009).

Digital Media Interventions for Sexual Health

Novel interventions using interactive and portable media such as websites and text messaging services have been developed to communicate with youth about sexual health. Such interventions may be especially effective among youth because these are the media they use frequently, and the benefits of interpersonal communication can be combined with the advantages of mass communication by tailoring messages based on feedback while reaching more people than one-on-one or group counseling.

Interventions using digital media have included text messaging services for information about sex (e.g., "What if the condom breaks?") (Levine, McCright, Dobkin, Woodruff, & Klausner, 2008) and to get STI test results and counseling referrals. A soap opera depicting safer sex scripts that could be played on a hand-held computer was successful in persuading young black women to be more assertive in using condoms (Jones, 2008). The pediatrician "Dr. Meg," successfully encouraged young MySpace users to reduce their risky sexual disclosures on their personal profiles and to implement privacy controls (Moreno, VanderStoep, Parks, Zimmerman, Kurth, & Christakis, 2009). Multiple-lesson curricula to delay sexual behavior among middle school students, and increase HIV prevention behaviors among high school students have been delivered effectively on computers (Lightfoot, Comulada, & Stover, 2007; Tortolero, Markham, & Peskin, et al., 2010). (For a comprehensive review of evaluated digital media interventions for adolescents' sexual health, see Collins, Martino, & Shaw, 2011.)

A meta-analysis of 20 computer-mediated interventions for safer sex practices for youth and adults found that interventions significantly improved HIV/AIDS knowledge, perceived susceptibility, sexual/condom attitudes, and communication about condoms as well as self-efficacy and intentions to use condoms (Noar, Pierce, & Black, 2010). The analysis suggested that programs were especially appealing to youth, and were more successful if they were tailored for individual participants and included more sessions.

As more such programs using varieties and combinations of digital media are developed for sexual health, it will be important to consider questions of confidentiality and informed consent, especially when targeting youth on their cell phones. Although social networking sites seem like an ideal venue for such interventions, privacy settings may limit the extent to which researchers can gain access and/or evaluate impact. Online curricula and interactive sexual heath websites are also difficult to evaluate because users may skip modules so it will be hard to know which parts are most effective. Despite these concerns, the possibility of using digital media to reach teens where they are, when they have questions, is exciting and worthy of much more attention.

Future Directions

We have used the MPM to organize our discussion of the role of the media in sexual socialization because it is clear from existing research that (p. 244) adolescents and emerging adults do learn from the media and that who they are, what they are looking for, and how they process and react to what they see, read, and hear matters. The research shows that young people do come to media to learn more about their sexual feelings and interests and that although a heterosexual script of love, sex, and relationships prevails, what media provide is often open to interpretation, depending on what the adolescent already knows and believes. A host of processing mediators, or factors that influence how the content will be attended to and retained, also affect whether media scripts and messages will be incorporated into the adolescent's sexual self-concept and will affect subsequent sexual beliefs and behavior. Throughout the process, the digital media provide the means for friends to play a bigger role than ever before in supporting or refuting what the commercial media provide. We have also seen that the media can be positive players in helping young people develop healthier sexual lives, as campaigns have effectively taught adolescents about safer sex practices in compelling ways.

This overview of what we currently know about media and adolescent sexual socialization also points to a number of topics that still should be addressed. First, we must find ways to look at the array of media adolescents are using rather than only one medium at a time. Although adolescents still do spend more time with television than any other medium, even television is now being watched in very different ways—on laptop computers, tablets, and cell phones. We currently know very little about whether these different ways of viewing affect what is learned. These new ways of viewing also make it much easier to pass on favorite bits, comment on shows while they are being watched, and go to other kinds of media, such as online magazines, songs, music videos, and even interviews with the actors that are stimulated by the viewing. That kind of involvement could lead to very different outcomes.

Measurement of those kinds of patterns will be difficult in population studies, but one approach may be to construct measures that focus on the outcome of interest, such as Ward et al. (2011) did in their study of masculinity among college men. The measure of media exposure combined self-reports of use of four media, men's magazines, music videos, movies, and prime time television programs that are known from previous content analyses to contain high proportions of content about male gender roles. More innovative measurement techniques, such as experience sampling (Hektner, Schmidt, & Csikszentmihalyi, 2007) that would allow simultaneous assessment of content, context, and level of involvement could be valuable.

The results of the small body of work on the effects of adolescents' use of online pornography are troubling and worthy of further study. The program of research in the Netherlands (e.g., Peter & Valkenburg, 2010) and the few studies elsewhere suggest a pattern in which initial curiosity may lead to more negative outcomes, including preoccupation with sex, feelings of sexual inadequacy, and even sexual violence (Ybarra et al., 2011). Given youths' unprecedented access to sexually explicit content, much more work is needed to answer the question, How does early exposure to the bodies and scripts of pornography affect adolescents' developing sense of their own sexuality?

Given that current and future generations of adolescents will be growing up in a 24–7 media world in which they can be producers as well as consumers, we must learn more about the effects of audience-generated and

distributed content such as sexting and viral sexually explicit videos. A developmental approach will be especially relevant in this domain because research suggests that peers are most influential at transitional moments in an adolescent's life. The need for identity validation and support from popular teens is most needed as adolescents move from middle school to high school and then to college (IOM & NRC, 2011), so focus on those moments in adolescents' lives may be most fruitful.

More longitudinal and experimental studies that will provide better evidence of the sequence of causality are needed. Only a few studies have included both good measures of media exposure and sexual outcomes at more than one time. Cross-sectional surveys can establish that a relationship between exposure and sexual beliefs and behaviors exist, but they cannot be sure about time-order. The few surveys that have included more than two waves of data support the MPM's assumption that, in fact, the process is reciprocal—early adolescents do seek sexual content in the media and that exposure then is related to their sexual behavior. Those studies have not found consistent results across racial groups, however, and may have begun too late to detect the patterns of media use for adolescents who are coming to sexual maturation earlier or for those who are using sexual content in late childhood.

The interplay of gender, race, and class as contexts in which young people come to the media with different expectations and life possibilities has also not (p. 245) been taken into consideration sufficiently. Similarly, we know very little about how non-heterosexual youth find relevant and supportive media fare or how they cope with dominant scripts in mainstream media. Qualitative research may be particularly important to study how individuals incorporate sexual media in their lives by helping us to better understand the meaning-making processes adolescents engage in when experiencing sexual media (Polkinghorne, 2013).

Broader definitions of what we mean by sex and sexuality will also be helpful. Further studies of the extent to which adolescents learn standards of sexual attractiveness, masculinity/femininity, romantic relationship and breakup scripts, norms of fidelity, and expectations about pregnancy, motherhood, and fatherhood, from the media are needed.

A word here about the challenges of enrolling preteens and teens in research about sexuality may be worthwhile. Especially in the United States, but also in other countries in which sexual topics are rarely discussed openly, it is often difficult to obtain permission to talk with young people about sex. Given that sexual media content is increasingly available to children and preteens, it is important that we find ways to start earlier with good longitudinal studies. One possibility is to recruit samples from schools for the media-related questions and administer the more sensitive sexual behavior–related questions in the child's home so parents may see what is being asked. This was the strategy used successfully in the Teen Media longitudinal study conducted in North Carolina with middle-school students (L'Engle, Pardun, & Brown, 2004). Institutional review boards also need to be educated about the importance of being able to enroll children and preteens in age-appropriate studies of the role of the media in sexual socialization.

Finally, the media can be helpful in guiding young people to lifelong healthy sexuality (Halpern, 2010). Media literacy education may help young people make healthier choices about which media to use and to approach content with a more critical eye. Campaigns to promote safer sex practices may help fill in the gap in the current media script that rarely includes patience or protection. The potential of digital media to reach teens where they are, when they are receptive to messages about sexual health is exciting. As Robinson, Patrick, Eng, and Gustafson (1998) have suggested, we will learn more about media effects as we evaluate interventions. We should proceed on both fronts with the ultimate goal of helping young people develop healthy sexual lives.

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Notes:

(1.) We have updated the figure of the original model (Steele & Brown, 1995 Steele, 1999; Brown, 2000) to depict the changing media environment: (1) added a second layer on the pathway to depict the importance of peers; (2) changed "Interpretation" to "Engagement" and included lists of "processing mediators" and "prebehavioral outcomes" that are the components of the work a media consumer does when consuming media; and (3) added "media production/circulation" to signify that media consumers can also create and distribute their own media.

(2.) In statistical models, mediation occurs when the relationship between the independent variable (X) and dependent variable (Y) is explained by the presence of a third intermediary variable, the mediator. The independent variable influences the mediator variable, which in turn influences the dependent variable. This effect can be complete, meaning the mediator explains the entire effect of X on Y or partial, meaning that the mediator explains some of the relationship between X and Y (MacKinnon, 2008).

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