



## Review

## The Internet's impact on sexuality: A critical review of 15 years of research

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## ABSTRACT

The body of empirical research on Internet sexuality has grown steadily since 1993. The following paper provides an overview of the current state of research in this field in its full thematic breadth, addressing six areas of online sexuality: Pornography, sex shops, sex work, sex education, sex contacts, and sexual subcultures. Key research results are presented concerning Internet sexuality's forms of manifestation, participant groups, opportunities, and risks. This paper shows that sexually related online activities have become routine in recent years for large segments of the population in the Western world. Internet sexuality also takes somewhat different forms based on the age, gender, and sexual orientation of the individual. Academic studies to date have focused overwhelmingly on the possible negative effects of Internet sexuality. By contrast, little research has been conducted on potential benefits. Consequently, a surprising number of gaps are evident in the scholarship on Internet sexuality.

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## 1. Introduction

Online content and Internet activities with a sexual character are widespread. Yet the quantitative prevalence of Internet sexuality is not the only reason why it is an important subject of study. On a qualitative level there is often a substantial divergence between the forms of sexuality manifest on the Internet and in other contexts, both face-to-face and as depicted in various media. Clearly, the Internet is not merely a new distribution channel for standard forms of commercial and mainstream pornography. In the area of amateur pornography, for example, the Internet has facilitated the development of new collective forms of production, distribution, and reception. Standard notions of the interpersonal sexual encounter have also been expanded by so-called online sex or cybersex, a mediated form of sexual encounter often characterized by alternate standards of partner selection and divergent sexual scripts. On a general level, current research demonstrates that Internet sexuality should not be described as a form of “virtual pseudo-sexuality” in juxtaposition to “real sex.” Online and offline activities are often closely interlinked. Online dating services, for example, have proven to be a popular and successful method for meeting real-world sexual partners in both a fast and uncomplicated manner.

While individual actors and the larger social environment shape Internet sexuality, they are also impacted by it. Positive or negative consequences may result depending on how the Internet is used in various social contexts for activities of a sexual nature. Internet sexuality can have impacts on sexual attitudes and identities, the sexual socialization of children and adolescents, gender relations, the social position and political activism of sexual minorities, the inclusion of people with disabilities, the spread of sexually transmitted infections, sexual satisfaction in couple relationships, the promotion of sexual health, the development of sexual disorders, and the occurrence of sexual victimization.

Online sexuality was first seeded as a social force over two decades ago with the release of the first desktop computers and public computer networks in the mid-1980s. The first empirical studies in the field were published in the mid-1990s with the popularization of the Internet (e.g., Correll, 1995; Durkin & Bryant, 1995; Finn & Lavitt, 1994; Rimm, 1995; Rosen & Petty, 1995; Rosenberg, 1993; Wiley, 1995; for a critique on Rimm’s study that generated a heated “cyberporn debate” in both academia and the press see Hoffman & Novak, 1995, for its influence in U.S. legislative processes regarding the regulation of online pornography see Blevins & Anton, 2008, p. 123). Since then, the volume of academic publications on Internet sexuality has increased significantly with each passing year. Yet, in a broader sense, what do we currently know about Internet sexuality, about its various forms of manifestation and effects? And what do we not know?

### 1.1. Definition of Internet sexuality

The term “Internet sexuality” (or OSA, online sexual activities) refers to sexual-related content and activities observable on the Internet (Adams, Oye, & Parker, 2003; Cooper, McLoughlin, & Campbell, 2000; Leiblum & Döring, 2002). It designates a variety of sexual phenomena (e.g., pornography, sex education, sexual contacts) related to a wide spectrum of online services and applications (e.g., websites, online chat rooms, peer-to-peer networks). If an even broader range of computer networks – such as the Usenet or bulletin board systems – is included in this extensional definition, one speaks of “online sexuality” or “cybersexuality.”

### 1.2. State of research on Internet sexuality

To date, no review articles have been published that provide a systematic overview of the current body of scholarship in the field.

A bibliographic survey published by Eric Griffin-Shelley (2003) claims in its title to evaluate 20 years of research on Internet sexuality, yet the earliest academic reference cited is from 1993. The works are also grouped according to the type of publication and not based on their contents. Other narrative reviews are solely concerned with individual user groups, such as adolescents (Boies, Knudson, & Young, 2004), or individual phenomena such as Internet infidelity (Hertlein & Piercy, 2006), sexual harassment online (Barak, 2005), HIV prevention on the Internet (Rietmeijer & Shamos, 2007), or the influence of Internet pornography on marriage and family (Manning, 2006). At present only one quantitative meta-analysis has been published in the field, concerned with the prevalence of sexual risk behavior among men who seek out male sex partners on the Internet (Liau, Millett, & Marks, 2006).

Against this backdrop, the goal of the following review paper is to present a structured overview of the current state of research on Internet sexuality in its full thematic breadth. Two databases – *Psyc-Info* (maintained by the American Psychological Association) and *Web of Science* (maintained by Thomson Scientific) – provided the source material for the research conducted for this paper. To search the databases, sexually themed keywords (e.g., sex, pornography, queer, contraception, HIV) were used in combination with Internet-related terms (e.g., Internet, online, cyberspace, web, virtual reality). Over 450 relevant academic articles (primarily refereed journal articles in English language) published between 1993 and 2007 were identified in this manner. More current references were added during the revision of the paper.

### 1.3. Conceptual framework of the review

The classification and evaluation of the current state of research presented here considers Internet sexuality from the perspective of Internet users and their respective patterns of activity. The central question concerns which individuals are pursuing what sexually related activities on the Internet, and what are the consequences of these activities, according to current empirical research.

In this regard, *six central areas of online sexuality* may be distinguished. These have already been established outside the Internet and have been traditionally studied as separate areas of research. The Internet offers new configurations and possibilities of engagement for these different areas of behavior:

1. *Pornography on the Internet*: Internet users may access commercial as well as non-commercial online-pornography, as well as produce, distribute and discuss such material themselves. With respect to online pornography, there is a reuse of conventionally distributed pornography, such as scanned pictures from pornographic magazines, along with newly created material.
2. *Sex shops on the Internet*: Internet users may obtain information regarding sexual aids and toys and discretely purchase such items online. While commercial online pornography deals with digital goods, online sex shops generally concentrate on the marketing of non-digital products such as vibrators, condoms, aphrodisiacs, sexy lingerie, and erotic magazines. Online sex shops may exist as web presences of offline shops, but there are also independent Internet sex shops.
3. *Sex work on the Internet*: The Internet serves, on the one hand, for the marketing of conventional *offline sex work* (such as advertising for brothels and escort services, organizing sex tourism) and on the other hand enables new forms of *online sex work* (e.g., the live broadcast of sex shows via webcam). Internet users thereby have expanded opportunities to obtain sexual services or to offer them. In contrast to pornography, which is comprised of previously produced sexual texts, pictures or films, sex work includes interpersonal contact in real time

between client and sex worker (e.g., the visitors of online sex shows can tell the performers via online chat what they should do on the webcam).

4. *Sexual education on the Internet*: The Internet offers an abundance of information and advice which may be discretely obtained and that is directed at changing sexual awareness, attitudes, and behaviors, as well as promoting sexual health. According to their interests, Internet users may seek out and access information they find useful and trustworthy from a wide range of sources. In addition, they can become active participants in disseminating information; they can, for example, counsel other Internet users regarding their questions and difficulties. Conventional materials for sexual education – such as brochures – are widely available on the Internet, but there are also new formats and content such as multi-media learning modules, peer advice in online forums, and sexual field reports in online diaries.
5. *Sex contacts on the Internet*: There are two forms of sexual contact on the Internet: Contacts initiated exclusively for computer-mediated sexual exchanges (*online sex, cybersex*) and contacts leading to real-world sexual encounters (*offline sex*). In contrast to commercial sex work, these sexual encounters occur without any financial exchange. Sexual contact on the Internet may consist of fleeting engagements, but there are also long-term personal relationships. By using specific online dating platforms, Internet users can initiate offline sexual contacts far more easily and in a more targeted manner than outside the net. In addition, online sex has developed as new form of sexual encounter.
6. *Sexual subcultures on the Internet*: Individuals with non-mainstream sexual orientations or preferences who have difficulty finding like-minded persons are able to easily and inexpensively locate each other on the Internet. Sexual subcultures use the Internet both for internal networking and for public self-expression. This may involve the exchange of information, social support, and political activism. Internet users can inform themselves discretely about specific sexual subcultures in order to attach themselves to a particular affinity group, or alternatively engage in critical discussions and express their disaffection. Internet platforms for sexual minorities sometimes are extensions of offline communities, such as Internet sites belonging to community organizations, and sometimes they have a strictly online existence. Online platforms for sexual subcultures may include special supplies for all of the previously listed types of activities (e.g., pornography, sex shops, sex work, sexual education, and sex contacts tailored to the sexual preferences of the user).

The classification system described here, consisting of six discrete areas of sexuality, places the Internet user at its center as an individual actor. *Societal factors* (for example, at the technical, ethical-normative, or legal level) can also influence Internet content and patterns of use, and will be considered within each individual category. This proposed structure allows existing research on Internet sexuality to be arranged according to content. In this way, the most important findings can be summarized and the extent of research that has been undertaken regarding each type of activity can be compared.

Aside from describing forms of sexual behavior on the Internet (e.g., who uses what kind of online pornography in what way, and how often), this review also considers the consequences of different forms of behavior and organizes these in terms of opportunities and risks, or with a view to positive and negative consequences. In this article, Internet users are not understood as the victims of deterministic media effects, but rather as *active media users* who are able to consciously and selectively use, interpret, and co-create

online content according to their needs, and are also capable of rejecting it (for a critique of media determinism see e.g., Gauntlett, 1998). Used competently, the Internet provides users with an *opportunity* to satisfy their sexual needs in constructive ways – to experience sexual satisfaction through masturbation; to improve sexual communication in a relationship; to protect themselves from sexually transmitted diseases through safe sex knowledge; to anonymously discuss shameful sexual wishes with others; etc. According to the *Declaration on Sexual Rights (World Association for Sexual Health, 1999)*, no specific sexual behavior should be judged morally wrong, but rather, both the individual's right of choice and the multiplicity of human sexualities should be recognized, as long as there is no coercion, exploitation or abuse (ethics of consent).

By contrast, Internet activities that are harmful to oneself or others are viewed as *risks*. Such risks can occur, for example, when Internet users, confronted by the enormous quantity of online sexual content, exhibit addictive or compulsive usage patterns that have negative consequences for themselves or others. Additional risks, such as sexual harassment, are posed by unwanted exposure to sexual content or contacts. In this regard, our conception of the active media user who confidently pursues the satisfaction of his/her sexual needs must be qualified – a socially responsible engagement with online sexual content that encourages personal growth and that causes no harm to oneself or others is hardly something to be taken for granted, but demands the acquisition of specific *competencies* that not all Internet users possess equally (for an action theory based model of media use see Westerik, Renckstorf, Lammers, & Wester, 2006; on sexual and media literacy of porn users, see Attwood, 2007b). In addition, even competent Internet users can be affected by problematic Internet content or by behavioral patterns on the part of other Internet users that they cannot avoid.

According to the communication science and media studies perspective outlined here, it is neither within the power of the media to bring about inevitable effects upon all users (media determinism), nor is it within the power of media users to derive universal benefit (audience/user determinism). Rather, it comes down to a complex *contextualized interplay* between – more or less beneficial or problematic – media content and services on the one hand and – more or less imprudent or competent – patterns of media use and co-production on the other hand. It follows that the very same media service (e.g., an online platform for the exchange of sexual videos) may have entirely different consequences for different users or for the same user in different situations and phases of life. Against this backdrop, the present article will examine the state of research regarding Internet sexuality to illuminate what opportunities and risks have been shown to exist for which groups of individuals, and in which areas of research deficits are still evident.

## 2. Pornography on the Internet

Explicit, potentially stimulating portrayals of sexual activity exist on the Internet in the form of photos and photo series, video clips and films, comics, and texts. Online pornography is provided at websites both free of charge and for a fee. Websites with adult content can be found with the help of pornography search engines and directories. Pornographic material is also exchanged in peer-to-peer networks, online forums, and online chat channels. Alongside *erotica/softcore* (i.e., portrayals of naked individuals; simulated sex) and *hardcore pornography* (portrayals of real sexual acts), *illegal pornography* constitutes a third form of sexually explicit content available online (albeit to a lesser extent). Online child pornography is extremely difficult to find for unsophisticated users, as it is illegal in most developed countries ([International](#)

Centre for Missing & Exploited Children, 2006; Schell, Martin, Hung, & Rueda, 2007, p. 7). For this reason, *child pornography* is almost always sold or exchanged in closed circles (publicly accessible depictions of “teen sex” normally involve participants over the age of 18, so called “barely legal” pornography, Lewandowski, 2003; Paul & Linz, 2008, p. 311). *Violent pornography* is primarily offered on specialized websites for a fee. *Animal pornography*, on the other hand, is relatively easy to find free of charge because it is legal in several countries (Lewandowski, 2003, p. 311–313).

Unique to the Internet is the immense quantity and extremely wide range of often free pornographic material accessible anonymously regardless of time or place. These three characteristics of online pornography (anonymity, affordability, and accessibility) are described as a *Triple A-Engine* that drives its use (Cooper, 1998). The digital format of Internet pornography makes it easy for users to search for specific images, archive them in great volume on their home computers, and digitally modify them. The digital format of online pornography also allows users to conveniently produce and distribute their own sexually explicit content. The quantity of cyber pornography in relation to all other content on the Internet is estimated at about 1% (Zook, 2007, p. 106). Although small in relative terms, this figure still represents many millions of files.

### 2.1. Production and content of online pornography

At present, very few studies have systematically investigated the types and characteristics of online pornography. Lack of critical attention has also been devoted to providing a differentiated account of the processes and parties involved in its production. The majority of pornography available online was professionally produced (Cronin & Davenport, 2001). In this way, most commercial Internet pornography is a stereotypical product (Heider & Harp, 2002; Lewandowski, 2003; Mehta, 2001) of the socio-economic working conditions of the so-called “adult industry”.

Some professional porno actors maintain their own websites in order to gain independent control over both their professional and private self-presentations and the conditions of production (Miller-Young, 2007; Podlas, 2000). Many amateurs also release their self-produced pornography on the Internet (e.g., stories, photographs, videos; McKee, Albury, & Lumby, 2008, p. 128). It is not uncommon for amateur or DIY (do it yourself) pornography to contain authentic sexual encounters (*reality porn*; Hardy, 2008). In many cases amateur pornography is also marked by a deliberate effort to develop thematic and aesthetic alternatives to mainstream pornography’s stereotypes (*alternative porn*), for example, by presenting a wide range of body shapes and sizes. Innovative pornographic depictions (such as pornography made for and by heterosexual and homosexual women) are thus increasingly common on the Internet (Attwood, 2007a; Schauer, 2005). The emancipatory potential of reality or alternative cyberporn is limited by its commercialization (Magnet, 2007) and contrasted by the greater ease with which illegal online pornography – such as depictions of supposedly real sexual abuse and violence – can be distributed and marketed (Gossett & Byrne, 2002).

### 2.2. Usage and users of online pornography

Today, the use of pornography in the Western world is common: A representative study in Norway revealed that the majority of the male and female population between 18 and 49 years of age has used pornographic magazines (men (m): 96%, women (w): 73%), video films (m: 96%, w: 76%), or Internet content (m: 63%, w: 14%) at least once previously (Træen, Nilsen, & Stigum, 2006, p. 248); around 50% of them had last used pornography within the previous 12 months. Offline and online pornography was used by younger individuals and homosexual/bisexual men and women

with considerably greater frequency: 40% of homosexual and bisexual females indicated they used online pornography, as opposed to 12% of heterosexual females (Træen et al., 2006, p. 248). In a convenience sample of students in Canada (average age: 20), 72% of male and 24% of female participants reported having used online pornography within the last 12 months (Boies, 2002, p. 82). While traditional porn formats (magazines, videos etc.) are often difficult or downright impossible for many people with disability to access independently, online pornography can be used by formerly excluded groups of people with the help of computer technology (e.g., blind people can use screen-readers to consume pornographic online stories; Noonan, 2007). Adult users of Internet pornography are more likely to be male, younger, homosexual or bisexual, sexually active, non-religious, unmarried and have a higher level of education (Stack, Wasserman, & Kern, 2004; Træen et al., 2006). Adolescent users of Internet pornography in the United States are more likely to be African American, older, and come from families with less education and lower socio-economic status (Brown & L’Engle, 2009).

Although sexually explicit Internet content is viewed by a significant group of users more or less regularly, “sex” and “pornography” are in no way the most popular search terms entered by Internet users, as often claimed by the mass media. While the search term “sex” – which is valid in nearly every language – is often entered in search engines such as Google (see [www.google.com/trends](http://www.google.com/trends)), according to systematic analyses of search-engine data, sex and pornography related searches comprise a comparably small – and falling – percentage of all search-engine queries: In 1997, 17% of all search requests were related to sex and pornography. In 2001 the figure was 9%, and fell to 4% in 2004 (Spink, Partridge, & Jansen, 2006). Among the 500 most popular websites worldwide according to the traffic ranking of [www.alexa.com](http://www.alexa.com), pornography platforms first show up at 49th (Youporn) and 50th place (Pornhub).

There have been no empirical studies to date that describe the specific criteria by which individual users select pornographic online content to visit once, to come back to again or to avoid. Thus, it is not known which Internet users prefer which kind of online amateur pornography or deviant online pornography as compared to commercial mainstream pornography. Not only the process of selection but also the process of interpretation (e.g., perceived realism) with respect to different cyberpornographic genres are missing elements in current research. In addition, Internet users have been considered until now as only passive consumers of pornography. Research has widely neglected a number of media-specific aspects of users’ relationships with Internet pornography. These include the frequency with which they collect, exchange, modify or use Web 2.0 technologies to publicly comment on, recommend or themselves produce and disseminate explicit texts, pictures or videos.

As is the case with offline pornography, online pornography is primarily consumed by individuals in moments of solitude. However, both forms of pornography are also used to a certain extent by couples and groups of friends. The main reasons provided for the voluntary use of pornography are: Curiosity, sexual stimulation, masturbation, and enhancement of sex life with partners (Goodson, McCormick, & Evans, 2001, p. 109).

Wanted access to online pornography needs to be differentiated from *unwanted exposure*: A representative sample of adolescent Internet users between the ages of 10–17 in the United States revealed that 25% had unintentionally come across online pornography in the previous 12 months. One quarter of them (6%) were very discomforted by the experience (Mitchell, Finkelhor, & Wolak, 2003, p. 9). Few studies have investigated how children and adolescents handle both voluntary and involuntary exposure to pornographic material on a cognitive and emotional level, however. There are various legal provisions, technical solutions (such as

blocking/filtering software; Mitchell, Finkelhor, & Wolak, 2005a), and educational programs aimed at protecting children and adolescents from online pornography (Dombrowski, Gischlar, & Durst, 2007).

### 2.3. Effects of online pornography

Cyberporn addiction, victimization through illegal online pornography and negative role models in mainstream Internet porn are the most often addressed risks. However, benefits of online porn consumption are increasingly acknowledged.

As online pornography is available anonymously at low cost and in enormous quantities around the clock – a fact which, according to the theory of the aforementioned Triple-A Engine, intensifies its use – the problem of compulsive or addictive usage patterns (*compulsive Internet porn use; cyberporn addiction*) has been widely discussed as a risk (Cordonnier, 2006; Meerkerk, van den Eijnden, & Garretsen, 2006; Young, 2008). The problem is investigated in different social groups such as Christian and non-Christian males (Levert, 2007), pastors (Laaser & Gregoire, 2003), and men who have sex with men (Chaney & Chang, 2005). Psychotherapeutic treatment programs have been developed (e.g., Putnam & Maheu, 2000) and online self-help groups have formed (Cavaglioni, 2008). While public political debates have cast online pornography in terms of hard drugs like crack cocaine (Singel, 2004), it is debatable from a psychological and psychiatric perspective whether excessive Internet (pornography) use constitutes a unique disorder (cf. Morahan-Martin, 2005; Shaw & Black, 2008). On the one hand, people with compulsive sexual behavior find an additional field of action on the Internet (Daneback, Ross, & Månsson, 2006), and, on the other hand, people who suffer from comorbid psychological disorders (such as depression, attention deficit and hyperactivity disorder, anxiety, and alcohol dependence) may seek temporary relief and distraction by using pornography excessively (cf. Cooper, Griffin-Shelley, Delmonico, & Mathy, 2001). In the United States, so called Internet addiction afflicts approximately 8.5% of Internet users who go online for sexual pursuits (Cooper, Scherer, Boies, & Gordon, 1999), which is equivalent to approximately 2% of all Internet users (Albright, 2008), or less than 1% of the general population (Shaw & Black, 2008). These individuals most often engage in excessive use of online pornography, but also online chats, online games, etc. An intensive preoccupation with online pornography (usually by the male partner) can negatively impact the quality of heterosexual relationships, both sexually and emotionally (Manning, 2006). The use of online pornography in the workplace can impair performance and potentially result in employee dismissal (Cooper, Golden, & Kent-Ferraro, 2002). To the extent that paid cyberpornography is consumed, excessive use may also lead to financial problems.

Aside from the risk of Internet users becoming excessively involved in online pornography and thereby neglecting other areas of life, there is also the danger that they may consume *illegal pornography* and thereby harm others and themselves. It is indisputable that minors are seriously harmed when they are sexually abused for the production of child pornography. In this connection, the Internet may serve as a medium of distribution that leads to increased demand and, as a consequence, to a larger number of victims. For this reason, child pornography is criminally prosecuted nearly everywhere in the developed world. More controversial is the dangerousness of child pornography when no children are involved in its production (e.g., adolescent-appearing adult performers: “barely legal pornography,” and 100% digitally produced imagery: “virtual child pornography,” Burke, 1997; Kleinhans, 2004; Paul & Linz, 2008; Wasserman, 1998). Apart from *legal implications* of new cybercrimes like possession or distribution of illegal cyberporn (Moultrie, 2006; Newville, 2001) *psychological treatment*

is suggested for (more or less compulsive) users of illegal online pornography (e.g., Burke, Sowerbutts, Blundell, & Sherry, 2002; Quayle, Vaughan, & Taylor, 2006). It is argued that certain pathological inclinations can be exacerbated by access to deviant pornographic material: The availability of online child pornography is seen as encouraging the biased perception that pedosexual behavior is normal and might therefore foster the transformation of the porn users’ pedophile fantasies into actual pedosexual abuse (Quayle & Taylor, 2002, cf. Section 7). It seems unlikely, though, that mere exposure to deviant pornography is able to create sexual disorders or crimes, the influence of biopsychosocial background factors needs to be considered instead. Deviant fantasies are already a natural part of human sexuality, and interest in deviant pornography is often not connected to sexual offensive or criminal behavior against people (e.g., Frei, Erenay, Dittmann, & Graf, 2005; Popovic, 2007). Determinants (e.g., sexual desires, curiosity, peer pressure) and emotional, cognitive and behavioral consequences (e.g., sexual arousal, but also shame, anger, disgust) of the wanted or unwanted exposure to different types of legal or illegal *deviant online pornography* (e.g., child, animal, violent, fetishist pornography) by clinical, criminal, and normal populations are not well understood so far (most studies address child porn use by sex offenders, e.g., Quayle & Taylor, 2003). The consumption of pornography (especially violent pornography) may increase the probability of sexually aggressive behavior in a small group of sexually aggressive men (cf. Hald & Malamuth, 2008, p. 622). In general, however, no correlation has been demonstrated between the prevalence of pornography and acts of sexual violence in a society (Bauserman, 1996; Diamond & Uchiyama, 1999).

Finally, there are also suspected negative consequences of online pornography in situations that involve neither excessive overuse nor illegal or deviant content. Traditional heterosexual *mainstream pornography*, directed primarily at heterosexual male audiences, in both its online and offline variants is often suspected, (a) of communicating a sexist portrayal of women, thus furthering sexist attitudes and abusive behavior against them (cf. Barak, Fisher, Belfry, & Lashambe, 1999), (b) of communicating unrealistic body images and standards of sexual performance, thereby making the viewers insecure and unhappy with their own or their partner’s bodies and sex lives (cf. Albright, 2008), or (c) of undermining traditional values of marriage, family, and monogamy by showcasing sexual freedom, thus setting the stage for sexual liberalism and “amoral” or “irresponsible” sexual behavior. In fact, empirical studies have shown that the consumption of online pornography by Danish adolescents was accompanied by sexual insecurity (Peter & Valkenburg, 2008b), and among adolescents in Taiwan and Hong Kong it was associated with negative attitudes toward marriage, family, and monogamy (Lam & Chan, 2007; Lo & Wei, 2005). Such correlation studies, however, do not permit any determinations of causality. For example, it may be the case that sexually insecure adolescents turn more frequently to pornography rather than becoming insecure because of it. Caution is advisable not merely regarding the attribution of causality, but also in the assessment of the presumed consequences. So, for example, the fact that encounters with pornography may foster sexual liberalism or dissatisfaction with one’s own sex life may not be negative *per se*, but might stimulate constructive personal development (Fisher & Barak, 2001). Claims of negative effects are often based on simple stimulus-response or imitation models. Whether or not and in what manner online pornographic images (e.g., of anal intercourse) are imitated by its users depends on numerous factors though, particularly on the recipient’s evaluation of such practices and interpersonal communication and consent. An empirical study of such processes – considering among other factors sexual desires, sexual and gender identities, communication skills and power imbalances in couple relationships – has yet to be undertaken.

If one asks users of (online) pornography about the effects of pornography on themselves and on others, it turns out (as is observed for other media content) that there is a “*third-person effect*”: As a rule, people say that online pornography clearly has a more negative effect on other people than on themselves (Lee & Tamborini, 2005; Lo & Wei, 2002). Female and especially male pornography users in Denmark and Australia reported little or no negative effects from their pornography consumption in a questionnaire and predominantly cited diverse *positive effects* on their quality of life and their sexual experience (e.g., frequency of sexual activity, sexual performance, positive outlook on sex, improved sexual knowledge; Hald & Malamuth, 2008; McKee et al., 2008, p. 85). Potential positive effects of self-selected (predominantly legal and non-violent) online pornography – such as increased pleasure, self acceptance, inclusion of handicapped people, improved communication between sexual partners, in addition to the widening of traditional gender roles and sexual scripts – have been the subject of only a few empirical or theoretical studies so far (Boies, 2002, 85; Innala, 2007; Jacobs, Janssen, & Pasquelli, 2007). In marked contrast to earlier uniformly negative evaluations – quite similar to those accorded to pornography – the new field of academic (*computer*) *game studies* has recently begun to take computer games more seriously as cultural creations, to incorporate the perspectives of adolescent and adult users and seek empirical validation regarding their positive effects (see peer-reviewed journals like “Games and Culture” and “Game Studies”). A similar tendency has begun to appear in the emerging field of academic *porn studies*: It recognizes pornography “as a genre for the production of viewing pleasure” (Williams, 2004, p. 11), takes seriously the (cyber)porn consumers’ viewpoints (Attwood, 2007b; Lillie, 2002), and some philosophical discourses even validate the ethical value of the “enjoyment of pornography” (Kershner, 2007).

### 3. Sex shops on the Internet

There are numerous sex shops on the Internet. Sexual products – including sex toys, sexual aids, lingerie, condoms, aphrodisiacs, and erotica – are sold online by both mass-market retailers such as Amazon and specialized sex shops. The visibility and easy accessibility of sexual products on the Internet might contribute to the increasing normalcy with which the use of such products is viewed, as large segments of the population can now familiarize themselves with and purchase such products discretely (e.g., older adults, Adams et al., 2003). Online sex shops geared toward hetero-, homo- and bisexual women present dildos and vibrators as fashionable lifestyle products while communicating new and (at least partially) empowering images of female sexuality (Attwood, 2005).

In accordance with the Sexual Behavior Sequence Model, online sex shops can be classified as a sexual stimulus that triggers various physiological, affective, and cognitive reactions in the user depending on his or her predispositions. These reactions can prime the user for sexual activity and also impact the nature of the activities engaged in (Fisher & Barak, 2000, p. 579). There are currently no empirical studies available concerned with investigating the contents and forms of online sex shops (e.g., in contrast to – often not very female-, elderly- or handicapped-friendly – offline sex shops; see Noonan, 2007), their clientele, the ways in which they are used, and their effects. Not much is known about the prevalence and risks of online shopping for sexual drugs like Viagra (e.g., unprescribed self-medication, low-quality drugs; Solomon, Man, Gill, & Jackson, 2002).

### 4. Sex work on the Internet

While pornography on the Internet has been the subject of a large number of studies, very little research has focused on sex

shops and on the politically and economically even more relevant topic of sex work.

#### 4.1. Offline sex work

The Internet now plays a central role in the marketing of sex tourism, prostitution, and other forms of offline sex work (e.g., strip clubs). Many feminists reject prostitution on the principle that it is a form of sexual exploitation. It is argued that the Internet encourages sex tourism and prostitution while lending it a patina of normalcy (Hughes, 2000, 2003; Jones, 2001); that online forums concerning prostitutes and the quality of their services impart a cynical view of women (Holt & Blevins, 2007); and that online communication with customers constitutes a new form of stress for prostitutes (Davies & Evans, 2007). Furthermore it is posited that the Internet is used in connection with forced prostitution and the sexual trafficking of children and women (Surtees, 2008, p. 56f).

Other feminists who recognize prostitution as a legitimate occupation – on the condition that equitable working conditions are present – have to some extent evaluated the Internet in a positive light. The Internet offers female and male prostitutes additional opportunities to market their services, work independently, network, participate in political activism, or verify the identity of potential clients (Ray, 2007; Uy, Parsons, Bimbi, Koken, & Halkitis, 2004).

#### 4.2. Online sex work

A new market for sex work has developed online with the advent of live sex shows broadcasted via webcam. A number of professional female sex workers have reported that their activity in online sex shows (which involves responding to customer wishes in front of the camera) is much more comfortable and safe than the prostitution they previously practiced on the street or in brothels (Bernstein, 2007; Podlas, 2000). On the other hand, females can be lured or forced into online sex work. A potential risk is faced by individuals who voluntarily chose to enter into the seemingly unproblematic online sex business with excessive haste, overestimating the financial rewards while underestimating the negative psychological and social effects (Ray, 2007). The providers and consumers of online sex services have not been systematically identified, nor have the individual consequences for participants in the online sex business. The effects exercised by the easy accessibility of online sex shows on the social perceptions of woman, men, and sexuality also have yet to be explored.

### 5. Sex education on the Internet

Institutions, companies, groups, and individuals use the Internet to obtain and provide information about sexuality, as well as to promote changes in attitudes and behavior (e.g., to increase awareness about safe-sex practices).

#### 5.1. Access to online sex information

The majority of Internet users occasionally search for sex information online (Gray & Klein, 2006) and disabled people are not excluded (Noonan, 2007). In a convenience sample of 760 Canadian students, 45% of females and 68% of males indicated they had searched for sex information on the Internet within the previous 12 months (Boies, 2002). In a survey of 500 Ugandans aged 12–18, 45% indicated they used the Internet. Of this number, 77% had previously searched for information online concerning HIV/AIDS and other sex-related topics (Ybarra, Kiwanuka, Emenyonu, & Bangsberg, 2006). The wide variety of content, as well as the

confidentiality with which it can be obtained, are the main reasons indicated for engaging in such online searches. When assigned the task of finding online information about condom use and sexually transmitted diseases, test participants between the age of 18 and 21 in the United States were able to locate an appropriate website within four minutes – or five to six clicks – on average (Smith, Gertz, Alvarez, & Lurie, 2000). If an Internet-capable computer equipped with filtering software designed to block pornographic content is used (cf. Section 2.2), the most restrictive settings block out 91% of pornographic content, although 24% of sexual information available online is also no longer accessible (Richardson, Reznick, Hansen, Derry, & Rideout, 2002).

### 5.2. Quality of online sex information

Which websites communicate scientific and well-founded medical or psychosocial sex information? How many websites disseminate questionable or even dangerous advice (e.g., sexual abstinence is an effective method of contraception during adolescence; homosexuality can and should be cured; sexual dissatisfaction in women is mostly caused by female sexual dysfunction or FSD and should be treated with pharmaceuticals, Hartley, 2006)? Numerous questions such as these have still to be answered. A few studies have dealt with the quality of selected information being offered online for sex education (e.g., in terms of scope, completeness, topicality, factual correctness, web-design, etc.). In a study of online information available in English pertaining to birth control, for example, it was discovered that the intrauterine device (IUD) was incorrectly portrayed at 10 of 28 (36%) general birth-control sites and 84 of 155 (54%) IUD-specialized sites. Incorrect information primarily pertained to the presentation of risks and dangers unsubstantiated by scientific evidence (Weiss & Moore, 2003). Varying informational deficits were discovered in English language websites that presented information on emergency contraception (Latthe, Latthe, & Charlot, 2000) and sexually transmitted diseases (Keller, Labelle, Karimi, & Gupta, 2004), as well as on Chinese websites presenting information on HIV (Li, Lu, Yong, & Zhang, 2006). There have been no systematic comparisons to error rates in other sources of information, though (e.g., print brochures, oral communications of medical personnel). To date, it remains an open question as to which measures best assure quality among suppliers of online sex information (e.g., quality seals), or how one might give online users greater competence as consumers of information in order to help them to evaluate the quality of online content more critically themselves. A collection of links with commentary (“webliography”) – selected by independent experts – could help to orient individuals searching for online sex information (e.g., Millner & Kiser, 2002).

### 5.3. Types of online sex education

In order to ensure sexual well being and to overcome sexual problems, individuals need to be equipped with sex-related information (I), motivation (M), and behavioral skills (B) (so called IMB model of sex education: Barak & Fisher, 2001). For this reason, online sex education covers a broad range of services, including, for example, multimedia training modules for sexual-communication skills, regular visits of social workers and sex experts in online sex chats, e-card services designed to warn former sex partners of a possible STD infection, or laboratory results viewable online (for a review of online prevention programs see Rietmeijer & Shamos, 2007). In scattered instances, the Internet is also being used to support professional sex therapy via e-mail (e.g., Hall, 2004). Control group studies confirm that online interventions lead to an increase in knowledge and changed attitudes (e.g., Lou, Zhao, Gao, & Shah, 2006); to date, changes in behavior (e.g., use of condoms) have

been researched with comparatively less frequency (e.g., Roberto, Zimmerman, Carlyle, & Abner, 2007).

In addition to educational interventions by experts, there is a great deal of sexually enlightening content available on the Internet and at Web 2.0 platforms that has been created by Internet users themselves. By authentically portraying their personal sexual desires, experiences and attitudes in *personal narrative sex blogs*, women help to make the diversity of female sexualities visible, while also helping themselves and others to overcome prejudice and shame (Attwood, 2009; Wood, 2008). The authors can preserve their identity by remaining anonymous or using a pseudonym. New, individually helpful, but also politically relevant *sexual discourses* arise from the public commenting and reciprocal linking of weblog entries. Protected by the anonymity that an *online forum* provides, it is possible to discuss sexual experiences and to receive information and *peer advice* from a wide range of different people (Suzuki & Calzo, 2004). This form of online support also includes online *self-help groups* for sexual topics – with their attendant opportunities (e.g., round-the-clock help, no matter where one is located) and risks (e.g., excessive emotional demands; social conflicts; cf. Waldron, Lavitt, & Kelley, 2000).

## 6. Sex contacts on the Internet

There are two forms of sexual contact on the Internet: Contacts initiated exclusively for computer-mediated exchanges (online sex), as well as contacts leading to real-world sexual encounters (offline sex).

### 6.1. Online sex

When engaging in online sex, partners seek to stimulate one another sexually by exchanging explicit digital texts, images, and/or video – often while masturbating (Daneback, Cooper, & Månsson, 2005; Waskul, 2002). Cybersex partners can be found in various online chat rooms, online communities, online games, or virtual worlds (e.g., Second Life). Fleeting contacts between anonymous strangers are possible, as are more enduring online relationships. As with solo sex, a number of sexual risks are eliminated when engaging in online sex, including physical violence, unplanned pregnancy and the transmission of STDs. In contrast to solo sex, however, cybersex offers many of the gratifications associated with partner sex, including sexual and emotional intimacy (for a review of the role of emotion in computer-mediated communication see Derks, Fischer, & Bos, 2008). Due to its mediated nature and the opportunities it offers for anonymity, cybersex helps to lower inhibitions and also encourages particularly open communication. Sexual inclinations and preferences otherwise concealed in the real world due to the fear of rejection can be acted out on the Internet. Participants experience this as liberating, and it often encourages self-acceptance (McKenna, Green, & Smith, 2001).

Online sex provides participants with the opportunity to collect new sexual experiences and engage in sexual activities with a diverse range of partners in a relatively safe and playful setting, behaviors contributing to *sexual empowerment* (Whitty, 2008). Cybersex is not “disembodied” per se. Sexual stimulation is experienced on a bodily level, and physical attributes and carnal reactions are also symbolically portrayed. Cybersex allows participants to present themselves in a much more favorable light than otherwise possible in face-to-face encounters. By projecting a specific persona in an online setting, individuals who are otherwise unexceptional in real-world settings can experience the lust and desire of others: Any physical handicap can be made disappear; senior citizens can become young lovers; adolescents can be taken more seriously by portraying themselves as older. While age and

skin color are frequently altered in online settings, virtual gender swapping is much less common: Only 1% of people regularly switch gender when going online for sexual purposes (Cooper et al., 1999).

Cybersex should not be classified as a deficient substitute for “real sex,” but should instead be understood as a specific form of sexual expression that can play a legitimate role in the sexual and relational life of its participants (Carvalho & Gomes, 2003; Döring, 2000; Ross, Rosser, & Stanton, 2004). The degree to which online sex is experienced as satisfying and meaningful depends on the participants involved, as well as their behavior and relationships with each other. Women seem to have a stronger preference for cybersex than men (Cooper et al., 1999). In a sample of Swedish Internet users who go online for sexual reasons, women in all age groups – aside from those aged 18–24 – engaged in cybersex more often than men (25–34 years: w: 35%, m: 30%; 35–49 years old: w: 37%, m: 25%; 50–65 years old: w: 22%, m: 13%; Daneback et al., 2005). Cybersex is also particularly popular among gay and bisexual men (Ross et al., 2004; Træen et al., 2006, p. 249). In a convenience sample of Canadian students (aged 20 on average), 13% of males and 7% of females responded that they had voluntarily visited an online sex chat room within the past 12 months (Boies, 2002, p. 82).

Aside from its advantages, cybersex is primarily associated with three forms of risk:

1. Perpetual search for and *addictive or compulsive preoccupation* with online sex can result among individuals who suffer from acute psychological afflictions (so called “cybersex addiction”; Schwartz & Southern, 2000). Not infrequently, these behaviors are accompanied by the excessive consumption of other sex-related Internet content (online pornography, online sex shops; Daneback et al., 2006). While compulsive use of online porn is more widespread among men, compulsive cybersex affects women as well (Ferree, 2003).
2. If married persons or individuals with a steady partner secretly engage in cybersex with a third party, this – not infrequently – is registered by the partner as an act of betrayal (*online infidelity, cyberinfidelity*), and may lead to a crisis or exacerbate existing problems in the relationship (Hertlein & Piercy, 2006; Mileham, 2007; Young, 2006). However, some couples allow each other officially to have cyber affairs within agreed upon limits (e.g., online contact only).
3. Cybersex is not always initiated based on mutual consent, which can result in unwanted sexual advances (i.e., *online sexual harassment, online sexual solicitation*) among adults and adolescents (Barak, 2005), as well as the online sexual molestation of children: Adults may, for example, pose as adolescents in chat rooms intended for teenagers or on social networking websites like MySpace or Facebook and initiate computer-mediated intimate and sexual interactions with under-aged persons. In a US-based random sample of 10–17 year olds, 18% of girls and 8% of boys responded that they had experienced online sexual harassment in 2005; 7% of girls and 2% of boys experienced these contacts as very unpleasant (Mitchell, Wolak, & Finkelhor, 2007, p. 121). Five years before self-reported victimization rates were even higher (girls: 27% and boys: 12%). Today, minors seem to be less at risk because they communicate more often with friends than with strangers and online child protection is more common (e.g., moderated online chat rooms for teenagers; Dombrowski et al., 2007). Knowledge about how sexual offenders seek to contact children on the Internet can assist in their criminal prosecution and educate children and adults about suspicious behavior (Malesky, 2007; Marcum, 2007). It is often easier to fend off and track undesired sexual overtures on the Internet than it is in the real world, as Internet users can avoid

undesired contacts with the click of a button, use special online services to identify bothersome individuals, or refer problems to legal authorities, who in many cases can trace data (Mitchell, Wolak, & Finkelhor, 2005c).

## 6.2. Offline sex

In two recent surveys conducted in British hospitals, 7% and 5% of heterosexual women, 14% and 10% of heterosexual men, and 47% and 44% of gay men had used the Internet to search for offline sex partners within the past 12 months (Bolding, Davis, Hart, Sherr, & Elford, 2006; Malu, Challenor, Theobald, & Barton, 2004). In a Swedish sample of individuals who use the Internet for sexual purposes, 35% of men and 40% of women responded that they had had sex at least once with a person met online (Daneback, Månsson, & Ross, 2007). Particularly active were singles, women between 34 and 65 years old, and homosexual/bisexual men. In a 1993 British survey, 3% of young male homosexual Internet users reported meeting their first sex partner online. In 2002, this figure was 61%; other locations for meeting partners have waned in significance, such as schools (Bolding, Davis, Hart, Sherr, & Elford, 2007). According to a qualitative survey of seven senior citizens in Australia (aged 71 on average), each of whom had begun a romantic relationship online, the first real-world encounter with their partner took place after 4.5 months on average, in all cases leading to sexual intercourse (Malta, 2007, p. 95).

Online profiles, photos, and various dating, chat, and social networking sites are used to identify potential sex partners; communication is undertaken by e-mail, instant messenger, webcam and/or telephone conversations. These means allow relevant criteria such as physical attractiveness, mutual personal interest, matching sexual preferences, and preferred safe-sex practices or HIV status to be clarified in advance. Prior to meeting in the real world, potential partners sometimes engage in online sex (cf. Section 6.1) and/or telephone sex in order to test their sexual compatibility. Among a large number of potential partners a both hedonistic and safety-conscious selection is finally made through this filtering process (Couch & Liamputtong, 2007; Padgett, 2007). The Internet expands opportunities for sexual contact among people who live in geographic isolation, as well as among people who seek partners for specific sexual practices, who do not want to be visible in sexual scenes, or who have little access to typical locations where sexual partners can be met (e.g., people with physical impairments; ethnic minorities; Poon, Ho, Wong, Wong, & Lee, 2005).

The online search for offline sex potentially poses even more – and more severe – risks than the online search for online sex:

1. The option of perpetual online search for more and more or better and better offline sex partners can lead to patterns of *addictive or compulsive behavior*.
2. The convenient and covert online search for offline sex can be associated with increased *unfaithfulness* and relationship problems.
3. *Unwanted contact, non-consensual behavior and violence*, like the rape of women and the sexual abuse of minors by Internet dates are further potential risks. Some child molesters attempt to contact minors on the Internet in order to meet with them in real-world settings (Malesky, 2007). Although some children have been molested by pedosexuals who use the Internet to identify and meet their victims, the number of children abused in this manner is exceedingly small in relation to the high number of sexual attacks perpetrated in everyday social settings, despite the intense media attention called to the Internet as potential source of abuse (Gallagher, 2007; Döring, 2007). All the same, the Internet plays a role in sexual crimes against



minors by family members and acquaintances (Mitchell, Finkelhor, & Wolak, 2005b). The media coverage of rape cases involving Internet dates might contribute to creating a new rape myth (rape happens to women who are careless enough to have Internet sex dates) neglecting the fact that acquaintance or date rape are widespread anyway. There is lack of empirical evidence as to whether sexual attacks or violations of consent occur with greater frequency when contact between adults is initiated via the Internet as opposed to other means.

4. The online search for offline sex is also presumed to foster the *spread of sexually transmitted infections and diseases* (particularly HIV). This is because homosexual and heterosexual individuals who seek out sexual partners on the Internet tend to be more sexually active, more willing to take risks (i.e., more frequently decline to practice safe-sex), and more often affected by STDs (Liau et al., 2006; McFarlane, Bull, & Rietmeijer, 2000, 2002). About one-fifth to one-third of women and men seeking offline sex on the Internet report having unprotected vaginal or anal intercourse with sex partners met online (Liau et al., 2006; McFarlane, Kachur, Bull, & Rietmeijer, 2004); directly-comparable data on unprotected intercourse with sex partners met offline are sparse, though. The association of Internet sex-seeking and increased likelihood of unsafe sex could be explained by mere *self-selection*: High-risk people may be more prone than low-risk people to seek sex partners both online and offline. Additionally, a dynamic process of *risk accentuation* could take place as the Internet fosters more sexual encounters among high-risk people. However, the few existing findings (focusing mostly on sex between men) do not support the risk accentuation hypothesis (Liau et al., 2006, p. 563). Internet-based STD/HIV prevention interventions can specifically address people who seek offline sex partners online (Bull, McFarlane, Lloyd, & Rietmeijer, 2004; cf. Section 5.3).
5. The possibly increased risk of *unplanned pregnancies* due to unprotected intercourse has not yet been investigated.
6. Last but not least, there is also a lack of data on the *success or failure rates* of online attempts to arrange for offline sex (e.g., problems with no-shows or misleading online self-descriptions).

On the whole, studies exploring the problems and risks associated with the online search for offline sex comprise the bulk of scholarship in this area. Virtually no publications describe this type of behavior as largely ordinary and harmless (Daneback et al., 2007). Even rarer are studies which expressly examine the benefits arising from this behavior as viewed by its participants – e.g., expanded opportunities to overcome sexual isolation, to find new sex partners, to experience sexual self-exploration and enjoyment.

## 7. Sexual subcultures on the Internet

When a sexual minority is accepted in a specific cultural circle and viewed as unfairly discriminated against or marginalized (e.g., lesbians and gay men in Western Europe), the emancipation and empowerment brought by the Internet is typically welcomed. By providing an easily accessible platform for the establishment of contacts between individuals of similar creeds and sexual orientations, the Internet can ameliorate social isolation, facilitate social networking, strengthen self-acceptance and self-identity, help to communicate practical information, and encourage political activism, among other things (e.g., Hillier & Harrison, 2007; McKenna & Bargh, 1998). To some extent, online sexual subcultures have also been subject to processes of commercialization (as seen with the outgrowth of online sex shops or commercial dating platform addressing specific sexual minorities such as homosexuals; Campbell, 2005). The Internet is an important place of refuge for

individuals who do not have access to urban subcultures by virtue of social restrictions or their place of domicile (such as homosexual youths in rural areas). The spectrum of sexual subcultures on the Internet encompasses homosexuality and bisexuality (e.g., Heinz, Gu, Inuzuka, & Zender, 2002; Lev et al., 2005; Nip, 2003), transsexual/transgender/transidentical people (e.g., Gauthier & Chaudoir, 2004; Shapiro, 2004), cross-dressers (Hegland & Nelson, 2002), as well as recreational sadomasochists (e.g., Palandri & Green 2000), practitioners of different kinds of fetishism (e.g., Newman 1997) and polyamory (e.g., Barker 2005) or asexuals (e.g., [www.asexuality.org](http://www.asexuality.org)). The opportunities for empowerment may come with the risk of renewed discrimination, if participation in public Internet forums does not remain anonymous.

By contrast, the Internet is viewed as a social danger when it is used by sexual minorities who are rejected in specific cultural contexts (e.g., on religious grounds or due to potential harm to themselves or others), and are thus viewed as rightfully ostracized, such as pedosexuals (Durkin, Forsyth, & Quinn, 2006). It is feared that the online presence of these deviant minorities could help to justify socially unacceptable forms of sexual behavior, strengthen the development of pathological disorders, or even encourage criminal activities. For example, posts which seek to legitimize the sexual abuse of children are circulated in online forums frequented by pedophiles, as recent research has shown (Malesky & Ennis, 2004). Online forums geared towards other varieties of sexual deviation with the potential for grievous harm (including amputation, cannibalism, and barebacking: Grov, 2004; Tewksbury, 2006) are also seen as a danger.

On the other hand, due to the visibility of such groups on the Internet, it is easier to extend offers of psychological counseling. The Internet also facilitates efforts to conduct research into such groups. Alongside subcultures who contest the notion that their behavior is destructive to themselves or others, there may also be online subcultures that consciously strive to deal with controversial sexual proclivities in a socially responsible manner while seeking, for example, to establish norms of behavior. Where to draw the line between pathological sexual dispositions and behaviors on the one hand, and harmless sexual variation on the other hand is an issue of on-going debates (e.g., feederism and erotic weight gain; online money masochism: Durkin, 2007).

There is a deficit in scholarship concerned with analyzing the influence of online sexual subcultures on mainstream culture. The self-promotional and political activities of a diverse range of sexual subcultures could contribute to greater sexual liberation. For example, previously marginalized minorities, such as polyamorists, might be able to receive increased positive media coverage. On the other hand, the Internet activities of ostracized minorities could incite fears or even moral panic, leading to popular calls for greater governmental control over the Internet and for more severe criminal sentencing, all while fostering a generally repressive sexual climate (Potter & Potter, 2001). In some cases, the Internet is used to promote discrimination against sexual minorities (e.g., hate speech on the Internet; anti-gay politics online: Irvine, 2005). US sex offender registry web sites (such as [www.nj.gov/njsp/info/reg\\_sexoffend.html](http://www.nj.gov/njsp/info/reg_sexoffend.html)) are suspected by mental health professionals to increase discrimination and vigilantism against former sex offenders instead of preventing crimes (Malesky & Keim, 2001).

Yet beyond public and media debates on issues of sexuality, a number of questions pertaining to sexual minorities on the Internet remain unanswered. How do individual Internet users react to the online presence of sexual minorities? To what extent do users actively engage with online content produced by sexual subcultures? And, more specifically, under what conditions does this engagement lead to positive or negative effects, e.g., reduced or increased prejudices towards sexual minorities?

## 8. Discussion

In closing, the most important findings are summarized. Furthermore, the limitations of this review will be underscored and recommendations will be made for future research in the field.

### 8.1. Summary and evaluation of research in the six fields of Internet sexuality

The most researched area to date has been the consumption of *Internet pornography*, which also has the greatest intensity of use compared to the other areas of Internet sexuality. Above all, these studies emphasize risks: Harm to children and adolescents; addictive patterns of use; the dissemination and consumption of illegal or deviant pornography; and creation of negative role models through mainstream porn. Existing studies seldom consider any positive aspects of pornography use, although from the perspective of users, benefits are predominant. With regard to the intensity of research in the six areas, *sex contacts* initiated through the Internet ranked in second place. Here, as well, previous research is focused on risks: Sexual harassment and abuse, particularly of minors; addictive or compulsive overuse; the facilitation of infidelity toward current life partners; and, in the case of offline contacts, the spread of sexually transmissible diseases such as AIDS. Alongside these potential risks, however, existing studies also consider opportunities for sexual empowerment, including expanded opportunities for self-exploration.

In terms of the volume of published material, both sexual subcultures and sexual education on the Internet were the third most common subjects of research. *Sexual subcultures* are able to organize efficiently and present themselves publicly on the Internet. In the literature this is considered an opportunity, as long as the issue involves sexual minorities who are considered to be the object of unjust discrimination. For minorities whose sexual preferences and activities are considered of harm to themselves or others, their Internet presence is categorized as a societal risk. *Sexual education* on the Internet is primarily viewed in the literature as an opportunity to expand upon traditional forms of sex education and to reach certain target groups more directly.

To date, hardly any peer-reviewed English-language publications exist regarding the characteristics, prevalence or effects of sex work and sex shops on the Internet. Current studies regarding *sex work* highlight certain opportunities (e.g., the ability of prostitutes to become more independent through their own Internet advertisements or services), but also identify risks (e.g., expanded or new forms of forced prostitution through the Internet). With respect to *sex shops* the literature also identifies opportunities, such as the removal of taboos regarding sex toys like vibrators, but also risks, such as unregulated online sales of prescription medications like Viagra.

In terms of *methodology*, current studies span a broad spectrum with respect to data collection: Interviews, questionnaires, observations, content analyses, and Internet log file recordings have all been used. As is generally the case with social science research, standardized written surveys are the most common method. Alongside ad hoc questionnaires new psychometric survey instruments have rarely been introduced (e.g., the Internet Sex Screening Test ISST, Delmonico & Miller, 2003). One seldom encounters more sophisticated research designs such as field (e.g., Roberto et al., 2007) or laboratory experiments (e.g., Paul & Linz, 2008) or longitudinal studies (e.g., Brown & L'Engle, 2009; Meerkerk et al., 2006; Peter & Valkenburg, 2008a), that seek to determine cause and effect relationships. One-shot studies are the rule. Similarly, there are few population-representative studies (e.g., Træen et al., 2006). Frequently, studies employ opportunity sampling (usually among college students) or use clinical samples (e.g., of sexual compulsives or sex offenders), which limits their generalizability.

Regarding the *theoretical conceptualization* of the effects of sexually related Internet activity, many studies rely on models of media determinism: Internet users are predominantly understood as passive victims of problematic online content instead of *active media users*, who selectively access or avoid and interpret specific Internet content. Such studies are also completely blind to positive learning effects in the sense of *gaining sexually related Internet competency* (e.g., improved self-regulation of consumption; critical evaluation of online sources; open discourse regarding online sexual activities with sexual partners and peers; etc.).

### 8.2. Limitations of the review

The aim of this review was to examine, for the first time, the state of research regarding Internet sexuality by means of a structure that encompasses its full breadth of content. For this purpose, the six central fields of Internet sexuality were considered. Due to space limitations in this broad presentation it has been necessary to leave out numerous deeper details. It would thus be useful to expand this  *cursory overview* by means of further reviews (or meta-analyses) that would deal in greater detail with selected phenomena or particular user groups.

The review is based upon a compilation of peer-reviewed English-language literature. This literature largely comes from the United States and Europe, much less often from Asia or Africa, and Arabian sources are completely absent. The studies referenced thus approach the subject of investigation from a predominantly Western perspective: The review provides little information on both, the online sexual activities in non-Western populations and the non-English academic discourses on these activities. In addition, the underlying structural and evaluative perspectives of the review, emphasizing individual behavior and sexual human rights (cf. Section 1.3) is ingrained in a Western worldview cast in modernity and secularism. From another perspective, such as a religious worldview, different principles of evaluation would predominate.

In this review, the complex subject of Internet sexuality has been structured around six central fields of activity. This *action-oriented or individually centered* perspective seemed particularly appropriate for the present review, as a majority of social scientific studies regarding Internet sexuality concentrate on the micro-level of individual experience and behavior. Meso-level implications of Internet sexuality (e.g., how is the sex industry changed by the online sex industry?) and macro-level implications (e.g., how does Internet sexuality influence values and norms in different societies?) lie beyond the focus of this review.

### 8.3. Recommendations for future research and practice

Although the number of studies on Internet sexuality increases every year, there are still a number of research gaps:

- a) English peer-reviewed publications concerning sexual Internet use rarely address inter- and cross-cultural issues and do not cover, for example, Islamic countries.
- b) The implications of Web 2.0 on Internet sexuality, especially in the fields of online pornography and sexual education are under-researched.
- c) Studies on the growing numbers of older Internet users and their sexual interests and needs are exceedingly rare.
- d) Conspicuous is that virtually no studies have investigated how adolescents (and especially girls who are traditionally limited in their sexual agency) in fact could benefit in their sexual development from various forms of self-determined Internet sexuality (e.g., sexual self-exploration in online sexual encounters; sexual self-expression on personal homepages, weblogs or online profiles).

- e) Quantitative data representative of national populations at large is lacking for numerous aspects of Internet sexuality.
- f) There is also a marked deficit of qualitative studies concerned with how specific online sexual activities or contents are selected and processed cognitively and emotionally by individuals, as well as with how such activities fit into an individual's sexual biography and impact relationships between sexual partners and peers.

In order to promote the Internet's positive effects on sexuality, two strategies seem particularly advisable according to the model of active media use on which this review is based (cf. Section 1.3):

1. Alongside the critique and restriction of problematic sexually related Internet content, more attention should also be paid to the public visibility, accessibility, and range and quality of helpful, innovative, and emancipatory sexually related Internet content.
2. In addition to the critique, diagnosis and management of harmful online sexually related activities on the part of particular user groups, more attention should be paid to supporting the broad population of Internet users in raising their sexual and media literacy in relation to Internet sexuality.

Both strategies require a greater openness on the part of academic research and teaching to the potentials for constructive sexual Internet activities.

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