Adolescents in a Digital Everyday Environment

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Abstract

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The overall aim of this thesis is to examine different aspects of Swedish adolescents' everyday environment in a digital world. Drawing on ecological and psychosocial developmental theories I will discuss social, sexual, and biological aspects of the Internet as an everyday environment, an environment in which most adolescents spend a great deal of time. The thesis comprises four studies, all examining different aspects of the developmental stage of adolescence. **Study I** focused primarily on the extent to which adolescents encounter explicit online content, such as pornographic, violent, and/or hateful material, and how they react to it. What feelings are associated with explicit online content? And how do adolescents deal with those feelings? In s**tudy I** we analyzed questionnaire data collected from 226 adolescents between the ages of 13 and 15 (47% girls and 53% boys). In line with other studies on the subject, the results showed that many Swedish adolescents are exposed either intentionally or unintentionally to explicit online content. Adolescents in this study showed surprisingly low emotional response to their exposure to explicit content. Their coping strategies center on personal agency, with most choosing to avoid or block unwelcome content rather than turn to parents or siblings for support and advice. Almost no significant gender differences were found in the choice of coping strategies, except that young men were more likely to avoid a site than were young women. **Study II** focused on the association between various parental and child factors and the parents' attitudes toward adolescents' online sexual activities. The study was based on questionnaire data collected from parents (78% mothers) and adolescents (54% girls) in 496 families. Results showed that parental attitudes toward adolescents' offline and online sexual activities are closely related, although parents are more permissive in the offline setting. Parents' attitudes toward online sexuality are not only correlated with their attitudes toward sexuality in traditional settings, but also by their preferences on the Internet. Parental attitudes were found to differ by the sex of the parent and the sex and age of the child. The link between fathers' attitudes and adolescents' online sexual activities was mediated by parental rules, suggesting that communication is part of the transmission of values. The focus of **study III** was on the link between adolescent boys' pubertal timing and their offline and online romantic and sexual activities. The study was based on questionnaire data obtained from 142 early adolescent Swedish boys. Participants reported on stage-normative (physical) and peer-normative aspects of pubertal timing, and on offline and online romantic and sexual activities. Both aspects of pubertal timing were related to romantic and sexual activity offline, but only the stage-normative measure was linked to sexual activities online. In **study IV** the focus was on the relationship between sexual and romantic activity in a traditional offline context and similar activities online. Longitudinal questionnaire data were obtained from 440 adolescents over three years. Results revealed that both offline and online sexual activity increased over time within the group. We found that results for girls showed a somewhat larger effect, indicating that the link between offline and online sexual activity is largest within the female group. Results also revealed a small but significant increase in the slope for participation in offline sexual activity with online sexual activity as a predictor – but only for boys – indicating that the link between online and offline sexual activity (i.e., the other way around) only exists within the male group. Thus, as boys' participation in sexual activity increases online, so it also does offline. The article concludes that adolescents' romantic and sexual activities online are tied to their physical, offline equivalent and so the Internet can be regarded as an important context for sexual development. Taken together, the individual studies suggest that The Internet, as an everyday environment is linked to several aspects of the developmental phase of adolescence. Further studies should continue to explore the effect of the Internet on adolescents' developmental tasks.

Key Words: Adolescence, Internet, Romantic and sexual activity, parental attitudes, offline, online

LIST OF PUBLICATIONS

The thesis is based on a summary of the following papers, referred to in the text by their roman numerals.

I.   Hallberg, J., & Hwang, C. P. (2014). Swedish adolescents' exposure to pornographic, violent, and hateful content online. Pending revision.

II.   Sorbring, E., Hallberg, J., Bohlin, M., Skoog, T. (2014). Parental Sexual Attitudes and Adolescents' Online Sexual Activities. Pending revision.

III.   Skoog, T., Sorbring E., Hallberg, J. & Bohlin M. (2013). Boys' Pubertal Timing Measured on the Pubertal Development Scale is Linked to Online Sexual Activities. *International Journal of Sexual Health*, 25, 281-290. DOI:10.1080/19317611.2013.815299

IV.   Hallberg, J., Skoog, T., Sorbring, E., Bohlin, M. & Hwang, C. P. (2014). Adolescents' Sexual Activity Offline and Online: A Longitudinal Study. Manuscript submitted for publication.

SVENSK SAMMANFATTNING

Sedan mitten av 1990-talet har Internet funnits tillgängligt för allmänheten i många länder runt om i världen. År 1995 hade uppskattningsvis 16 miljoner användare tillgång till Internet. Runt 20 år senare har antalet användare med tillgång till Internet vuxit till 2937 miljoner användare, nästan 41 % av världens befolkning. Sociotekniska reformer såsom den ökade tillgången till informations-och kommunikationsteknik har snabbt förändrat hur vi som individer interagerar med varandra, särskilt vad gäller yngre individer. För första gången sedan uppkomsten av ungdomskulturen i efterkrigstidens Europa skulle man kunna hävda att ungdomar inte bara har krävt en plats i en annars vuxen värld, men att de är en viktig del av den styrande majoriteten i ett stort kulturellt sammanhang, det vill säga Internet.

Internet är idag en naturlig del av vardagen för de flesta innevånare i Sverige. Internets genomslag har förändrat hur människor inskaffar information och delar information med varandra. Internet har blivit en del av vår vardagsmiljö, något som påverkar allt från en individs sociala relationer till det sätt som denne arbetar, lär och ta hand om sig själv. Tack vare den stora tillgången till bredbandsanslutningar så är nu många svenskar ständig uppkopplade vilket även innebär att rollen som Internetanvändare har förändrats: som ständigt uppkopplad tillbringar individen mer tid på nätet, utför fler aktiviteter och producerar själv innehåll för publicering. Uppkomsten av sociala medier och sociala nätverk påverkar det sätt som människor tänker kring sina vänner, bekanta och även främlingar. Traditionellt så har människor oftast sociala nätverk bestående av familj och vänner som hjälper dem. Den nya verkligheten är att när människor skapar sociala nätverk i nya vardagsmiljöer så är dessa nät ofta större och mer varierande än tidigare. En effekt av detta är dock att de traditionella gränserna mellan privat och offentligt, mellan hemmet och arbetet, mellan att vara en konsument av information och producent av den har förändrats.

För de ungdomar som är födda under 90-talet är dock tillgång till Internet inte bara en anpassning till en ny teknik utan snarare anpassning till teknik som funnits tillgänglig under hela deras liv. Idag växer ungdomar upp i två världar, inte en. Det finns en så kallad faktisk värld, präglad av dagliga ansikte-mot-ansikte interaktioner och praktiska uppgifter, och det finns en virtuell värld, präglad av elektroniskt kommunikation med gränslösa möjligheter. I denna online-värld finns det en ständigt ökande mångfald av "platser" där ungdomar kan träffas och umgås med varandra, det finns en mängd olika sätt som de kan kommunicera och nätverka med varandra, det finns många olika sätt som de kan samla alla typer av information och roa sig, och det finns en mängd olika sätt de kan skapa eget innehåll och göra uttalanden om sig själva och sin identitet. Det gränslösa utbudet av information och interaktion innebär även en mycket större frihet gällande självdefinitionsmöjligheter. Idag får tonåringen bestämma själv hur de vill framställa och marknadsföra sig själva. Den "verkliga världens" identitet är inte längre tillräcklig; nu krävs en virtuell närvaro eftersom, "om du inte är på webben, är du ingen."

Det övergripande syftet med denna avhandling är att undersöka olika aspekter av svenska ungdomars vardagsmiljö i en digital värld. Med utgång i ekologiska och psykosociala utvecklingsteorier kommer jag att diskutera sociala, sexuella och biologiska aspekter av Internet som en vardagsmiljö - en miljö där som sagt de flesta ungdomar tillbringar en hel del tid. Avhandlingen består av fyra studier som undersöker olika aspekter av tonårstiden.

Fokus för den första studien, **Studie 1**, var att undersöka i vilken utsträckning ungdomar stöter på onlineinnehåll som kan anses vara opassande eller stötande såsom pornografiskt, våldsamt och/eller hatiskt och hur de reagerar på det. Studien undersöker även vilka känslor som är förknippade med denna typ av innehåll och hur ungdomar går tillväga när det gäller att hantera eventuella känslor som är kopplade till detta innehåll. Studien är baserad på enkätuppgifter som samlats in av ungdomar i åldrarna 13 till 15 år. I linje med andra studier visade resultaten att många svenska ungdomar utsätts antingen avsiktligt eller oavsiktligt för innehåll på nätet som kan anses vara opassande eller stötande. Trots detta reagerade tonåringarna i studien förvånansvärt lite på exponeringen av sådant innehåll. De hanteringsstrategier som användes var oftast inte att prata med någon; istället valde majoriteten av deltagarna att aktivt undvika eller blockera ovälkommet innehåll snarare än att vända sig till föräldrar eller syskon för stöd och råd. Det fanns få signifikanta skillnader mellan pojkar och flickor gällande val av hanteringsstrategier.

Fokus för **Studie II** var att studera sambandet mellan olika faktorer, huvudsakligen föräldrars attityder och ungdomars sexuella aktiviteter på nätet. Studien baserades på enkätuppgifter som samlades in av föräldrar, majoriteten av dessa mammor, och ungdomar i cirka 500 familjer. Resultaten visade att föräldrars attityder till ungdomars sexuella aktiviteter på och utanför nätet är nära besläktade med varandra, även om föräldrarna hade en mer tillåtande inställning gällande sexuella aktiviteter utanför nätet. Föräldrarnas inställning till onlinesexualitet hängde inte bara samman med deras attityder till sexuella aktiviteter utanför nätet, utan även med hur de generellt tänkte kring Internet. Föräldrarnas attityder visade sig även variera beroende på kön på föräldern och kön och ålder på barnet. Kopplingen mellan föräldrarnas attityder och ungdomars sexuella aktiviteter på nätet medierades av föräldrarnas regler gällande Internetanvändning, vilket tyder på att kommunikation kan vara en del av överföring av värderingar mellan föräldrar och ungdomar.

Fokus för **Studie III** var kopplingen mellan unga pojkars pubertetstiming och romantiska och sexuella aktiviteter både på och utanför nätet. Studien baserades på enkätuppgifter från unga pojkar. Deltagarna rapporterade om två aspekter av sin s.k. pubertetstiming, en skala som handlade om hur de upplevde sin egen fysiska utveckling i samband med puberteten och en som handlade om hur de upplevde sin egen mognad i relation till jämnårigas mognad. Vidare ställdes frågor gällande romantiska och sexuella aktiviteter både på och utanför nätet. Båda aspekterna av pubertetstiming var relaterade med romantiska och sexuella aktiviteter utanför nätet, men bara fysisk pubertetstiming var relaterad till aktiviteter på nätet.

I **Studie IV** var fokus relationen mellan att vara sexuellt och romantiskt utanför nätet och ta del i liknande aktiviteter på nätet. Studien byggde på longitudinella enkätuppgifter från 440 ungdomar under en period av tre år. Resultaten visade att sexuell aktivitet utanför nätet ökade

under denna period, såväl för flickor som för pojkar. Resultaten visade också ett samband för båda könen när det gällde vad man gjorde utanför och på nätet; ju mer romantisk och sexuell aktivitet utanför nätet, desto mer aktivitet på nätet. Sambandet mellan vad man gjorde utanför och på nätet var dock något starkare för flickor jämfört med pojkar. Studiens resultat tyder på att ungdomars romantiska och sexuella aktiviteter på nätet är bundna till deras "fysiska motsvarighet" och som sådan kan betraktas som en viktig kontext för sexuell utveckling.

Denna avhandlings syfte var att undersöka vilken roll Internet spelar som en vardagsmiljö i svenska tonårspojkars och -flickors liv genom att undersöka olika aspekter av tonåringars liv på nätet. Internet som miljö är i ständig förändring och att göra anspråk på bestående sanningar är således inte möjligt. De resultat som framkommit i avhandlingen är snarare en avspegling av hur aspekter av Internet som vardagsmiljö såg ut under en viss tidsperiod. Vad avhandlingen i första hand vill belysa är att Internet är en vardagsmiljö, där ungdomars liv flätas samman med familj, vänner, kärlek och sex. Internet är inte längre en hobby eller ett intresse, det är en självklar del av ungdomars liv.

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Jonas Hallberg

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TABLE OF CONTENTS

INTRODUCTION

Since the mid-1990s, access to the Internet has been available to the public in many countries around the world. In 1995 an estimated 16 million users had online access. Almost 20 years later, the number of users with access to the Internet has grown to 2937 million, almost 41% of the world's population (Internet World Stats, 2014). During the last 15 years, researchers have examined many aspects of the Internet and its potential impact on people. However in many areas the effect is still not all that apparent and remains in need of exploration. One of these areas is the potential impact of Internet use on adolescents. Furthermore, in an ever-changing landscape like the Internet, what was once found to be true might not be so a decade later. Historically, we know that implementation of a new medium in society can have a strong impact on social change. This was true for radio, true for television, and most lately is true for the Internet. If we regard the speed at which Western society has adopted information and communication technology (ICT) and its seemingly limitless versatility and adaptability, the Internet could well be the most influential medium the world has ever seen. The explosive impact of this relatively new medium resonates with its users, both those who experienced the massive change in communication infrastructure over the last several decades and those who have grown up with the Internet. Both groups experience the constant change of the Internet environment, but in families, parents usually experience the Internet itself as a massive change, while adolescents have inherited the technology and are more comfortable adapting to changes within it.

The rise of ICT and the massive increase in social networking sites and use of instant messaging (IM) technology have rapidly changed the way we, especially younger people, interact with each other. For the first time since the rise of youth culture in post-war Europe it may be argued that the youth have not only claimed a space in an otherwise adult world, but that they are a major part of the ruling majority in a vast and increasingly important cultural context – the Internet. These cultural, social, and historical circumstances have given adolescents equivocal prerequisites for their struggle with self-definition because online social spheres are much larger and abundantly more complex than traditional, pre-ICT social spheres (Valkenburg & Peter, 2011). For example, in traditional settings, sociocultural factors such as shyness and the absence of a social circle might hasten, suspend, or halt adolescent's developmental process; these sociocultural factors might, however be mediated, for better or worse, through an active online life.

This thesis aims to explore the Internet as an everyday environment for adolescents by examining important aspects of the developmental phase of adolescence, namely, 1) emotional distress and support; 2) Parental influence and transference of norms and views from parents to their adolescents; 3) The role of physical and emotional changes with regards to participation in sexual activity and 4) participation in romantic and sexual activity during the adolescent years. All these aspects are supposedly important parts of the developmental phase of adolescence. This thesis is based on findings from four different studies, one

1

completed during 2007 and three included in a longitudinal project undertaken from 2010 to 2013.

I will begin by exploring Bronfenbrenner's ecological systems theory (1979) and the psychosocial development theories proposed by Erikson (1959) and Marcia (1966), both of which are relevant to the subject matter of this thesis. I will continue with an exploration of the Internet's evolution in Sweden, focusing on adolescents´ use and access, and continue by exploring the role of Internet use, especially the use of online social networking, and its possible implications for development. I will also explore the risks, strategies, and implications for adolescents who are exposed to explicit online content. Further, I will explore the role of family, friends and romantic and sexual activities in an online setting during adolescence. Finally, I will discuss remaining gaps in our knowledge of the Internet as an everyday environment for adolescents and some of the limitations of the present studies.

Adolescence – A brief theoretical overview

The studies in this thesis draw primarily on two psychological perspectives. The (bio)-ecological systems theory proposed by Bronfenbrenner (1979, 1989, 2005) and later expanded by Johnson (2008, 2010) was the inspiration for exploring the Internet as a part of adolescents' everyday environment. The Internet not only functions as an important social context in itself, but it also reciprocally interconnects other environmental influences in the lives of adolescents. Because studies have shown that the Internet is a context in which adolescents experiment with their identity and explore their options for behavior and beliefs (Calvert, 2002; Lenhart, Rainie, & Lewis, 2001; Turkle, 1995; Valentine and Holloway, 2002), the psychosocial development theory proposed by Erikson (1959) and Marcia (1966) greatly influenced the analysis of different aspects in the studies, such as interpersonal-relationships, sexuality, and emotions.

The (bio)-ecological systems perspective

Because ICT has become integrated in many aspects of everyday life –at home, at school, and in communications with friends and loved ones – the Internet can be regarded as a bridge between different parts of adolescents' everyday life. Ecological systems theory, proposed by Bronfenbrenner in 1979, provides a perspective on child development that views individuals as surrounded by an environment of interconnected layers of relationships; they develop through their interactions with, and the interplay between, those various layers. Bronfenbrenner argues that not only does the environmental and cultural context influence individuals, but individuals also influence the environment and culture in which they live (Bronfenbrenner, 1979, 1989; Darling, 2007). This interactional perspective looks at the immediate environment (family, friends, school, and neighborhood) that many other psychological perspectives have highlighted, but extends its gaze to a much larger context

including institutions, history, and society in general. Interactions between and among the various levels occur regularly and over extended periods of time.

Bronfenbrenner theorizes that the individual's (the child's) development is fuelled by the interplay between, and changes and conflicts within, the different layers of the child's environment, and that all layers are consequential for the child's development. Growing children, driven by their own developing biology, interact with several different layers such as family and friends, community, and society, all of which influence and direct their development. Conflict or changes in any of these layers will have an impact on the other layers and, in turn, impact the child. In short, the study of individual development cannot be restricted to individuals and their immediate family, but should also include the interaction of contextual factors in the larger environment (Bronfenbrenner, 1979, 1989).

Five layers constitute an individual's environment. Four (often illustrated in cross-section, see Figure 1) are regional and relational systems: the micro, meso, macro, and exosystems; the fifth, the chronosystem, relates to changes over time in the individual and in the other layers. The relative distance of the layers from the individual indicates their importance to, and impact on, the individual (Bronfenbrenner, 1979).
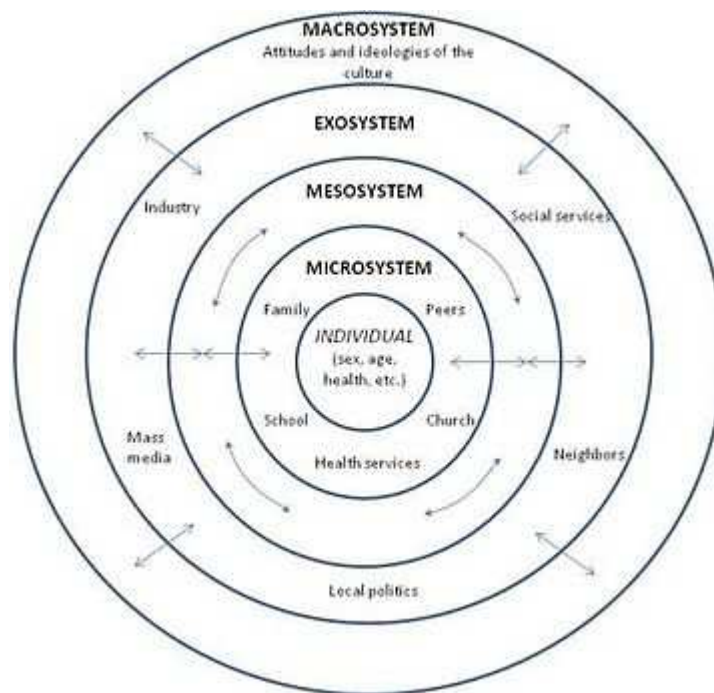
Figure 1. Ecological Systems Theory (Bronfenbrenner, 1979)

The layer closest to the individual is the *microsystem*, which comprises those social structures children interact with directly, such as family, friends, and school. In 2005, Bronfenbrenner expanded his theory to include biology (genetic inheritance) as a part of this microsystem (Bronfenbrenner, 2005). The second level, the *mesosystem*, comprises interactions between the different microsystems. Bronfenbrenner argues that these interactions could be as important as the individual's interactions in the particular microsystems. The third level, the *exosystem*, concerns indirect interactions with others' microsystems, such as a parent's work-

3

environment or a sibling's peer group. The fourth level of Bronfenbrenner's model, the *macrosystem*, concerns the norms and values of society in general. As the model illustrates, these systems are not hierarchal, but interact and influence each other. Knowledge, norms, and experiences on all levels interact to contribute to the child's development. The fifth level, the *chronosystem*, concerns environmental transitions and experiences over time such as adaptation to changes in family structure, living arrangements, location, and so on (Bronfenbrenner, 1979, 1989).

Ecological systems theory and the techno subsystem

Johnson (2010) expanded Bronfenbrenner's theory and proposed an addition to the ecological systems theory model called the techno subsystem, which is highly relevant for research into young people's use of Internet. The techno subsystem, which comprises an individual's interaction with both human and machine elements of communication, information, and recreational technologies, can be seen as another component of Bronfenbrenner's microsystem. Johnson theorizes that childhood could be mediated by techno-subsystem interactions within the microsystem. For example, online communications with friends can influence children's home or school subsystem. Schools often have a webpage allowing parents to access their children's timetable and homework, making the Internet and the school mesosystemic. In addition, many parents use the Internet on a daily basis in their work or studies, and this might indirectly affect how their children use the Internet at home, making it exosystemic in Bronfenbrenner's vocabulary. Cultural variations in how children are allowed to use the Internet, for example to gather information about school assignments, but not to pirate software, play games, or engage in social deviance, are related in part to the macrosystem. Finally, as the use of the Internet varies with key life changes such as school transitions, the Internet also transcends into the chronosystem. Studies have shown a link between specific online activities in specific contexts and specific measures of child development that supports this analysis of the role of the Internet in a developing child's everyday environment (Johnson, 2010).
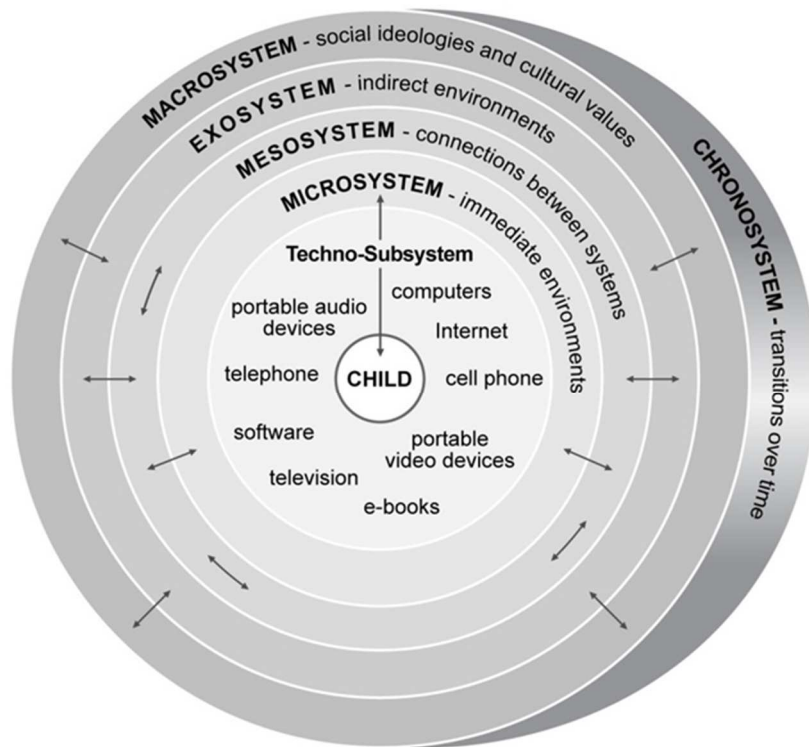
Figure 2. The Ecological Techno-Subsystem (Johnson & Puplampu, 2008)

The way the Internet is used is often directly linked to the age and developmental stage of the child or adolescent. Thus, it stands to reason that how adolescents use the Internet could be linked to developmental outcomes in both childhood and adolescence. For example, the Internet could be used both as a source of information about sexuality and as a context for sexual interaction. The ecological techno-subsystem proposed by Johnson (2008) includes the different types of Internet use across several contexts (see Figure 2). The techno-subsystem thus expands upon the two-dimensional representation of environmental influences on development proposed by Bronfenbrenner (1979) as social, emotional, and physical development are conceptualized as the outcome of reciprocal interactions between bio-ecological aspects (individual characteristics), the use of ICT at home, at school, and with friends (the techno-subsystem), and family and community environments (the microsystem).

As access to the Internet continues to grow, and information and communication systems evolve and become more intricate and integrated in adolescents' lives, it is clear that the Internet is an important social context that provides adolescents with opportunities to explore the developmental challenges ahead of them.

The psychosocial perspective

Developmental theories often have different core foci. For example, while ecological systems theory focus on the larger system in which an individual is influenced and has influence, the psychosocial approach focuses on the individual as a unique entity. Erikson is often

considered to have a more positive view of the human condition than his predecessors. He did not stress the significance of disruptions during developmental stages, anxiety, pathology, or the futility of the "pursuit of happiness." Nor did he believe that the mold for personality sets at the end of adolescence. Instead, Erikson emphasized healthy functioning and interaction with the surrounding world as key elements of identity development and he believed that the development of personality was an ongoing, lifelong process that did not end in adolescence (Erikson, 1959; Kroger, 1989).

Erikson's psychosocial theory essentially states that during the course of life people undergo eight psychosocial stages, each having a fundamental impact on their personality and development. Drawing from Freud's definition of the term *crisis* (internal emotional conflict), Erikson described these crises more as internal challenges or struggles that an individual needs to overcome in order to grow as a person. Each psychosocial stage corresponds to a period of time in a person's lifespan and the challenge characteristic for each period is to reconcile two conflicting emotional forces, which Erikson describes as "contrary dispositions." Erikson used the terms *syntonic* ("positive" forces such as intimacy) and *dystonic* ("negative" forces such as isolation) to describe the opposing forces in each stage. Erikson considered the ability to maintain a healthy balance between the syntonic and the dystonic throughout these stages to be optimal for personal growth. So, for example, in the stage that focuses on intimacy versus isolation, intimacy would be the development of establishing healthy romantic or sexual relationships with others (i.e., feelings of togetherness, love, and trust), and isolation would be characterized by the inability to establish close relationships (i.e., feelings of exclusion, loneliness, alienation and withdrawal). A healthy balance in this stage would be to experience both of these opposite feelings so as to establish a healthy capacity for intimacy as well as a healthy capacity for autonomy, to learn to be capable of giving and receiving love, but not pathologically to define oneself only in terms of acceptance or rejection by others (Erikson, 1950, 1959, 1968).

> What the child acquires at a given stage is a certain ratio between
> the positive and negative, which if the balance is toward the
> positive, will help him to meet later crises with a better chance for
> unimpaired total development (Erikson, 1959)

Erikson suggests that undergoing a stage of crisis without a healthy balance of positive and negative experiences might lead a person to develop damaging and even pathological tendencies that might hinder further psychologically sound development. These failed stages, he wrote, would lead to "maladaptation" (adopting an extremely positive attitude) and "malignancy" (adopting an extremely negative attitude), neither of which would allow a realistic approach to a particular situation (Erikson, 1950)

Erikson's posited "eight stages of man" that people undergo in the same sequence, although not necessarily at the same age. Thus, the eight stages of development are open to cultural and individual differences and circumstances as well as differences in time (Erikson, 1950).

In this thesis I will focus primarily on the psychosocial stage relevant to the adolescent years (about 13–19): *Identity versus Role Confusion*. At this stage, young people seek independence and a sense of self. It is an eventful time of life when questions of identity become important. How they appear to others becomes an important concern, as does continuity of their self-perception. It is a time when adolescents work to establish a school, peer, or occupational identity, but it is also a time when they start to develop a sense of sexual identity. Thus, it is a time when adolescents often start to reflect on their future roles as adults in an adult world, placing them in a state of living in both the present and the future. Erikson (1959) proposed that during this stage most adolescents establish a sense of identity not only about who they are as people, but also about where they are headed in life. However, this is also a cause of crisis as adolescents are faced with the need to reconcile the person that society expects them to be with the person they actually are. Thus this is a time of fundamental change in a person's life, both physically as they enter puberty and are faced with all the bodily changes this entails, but also mentally as they become acutely aware of societal expectations, the intentions of others, and their own intentions and expectations. These physical and mental changes often lead to confrontations with the adult world as they scrutinize and question inherited ideologies, political orientations, and perceptions of the world. According to Erikson, it is when adolescents balance their own perception of the world with the reality of the world that they establish their identity.

It is not in the scope of this thesis to employ the full model of Erikson's psychosocial theory (1959, 1968), however, his stage of *Identity versus Role Confusion* is highly relevant from an information-society perspective. In today's society, children use technology from toddlerhood through emerging adulthood. Depending on their age and phase of development, they use technology in different ways that can assist or impede their development in ways relevant to Erikson's psychosocial development theory (1959). For example, watching violent or pornographic content could have a negative impact on an adolescent's identity formation, while informational sites and web forums offering ideological, political, or religious views that are not present in their immediate physical environment might also act as a factor in identity development. In short, technology is an influential factor during development for many, if not most, adolescents in Western society.

Expanding on Erikson's theory, Marcia theorized that identity was a progressive developmental process during which four central points are essential for identity development. Much like Erikson, Marcia states that some events ("crises") function in different ways as catalysts for identity development. These events generate inner conflict and emotional disturbances forcing adolescents to reflect upon and likely change their beliefs, values, and goals for the future as their development progresses (Marcia, 1966).

Marcia (1966) identifies four main points or statuses in the development of identity:

Identity diffusion In this status adolescents do not have a strong sense of identity. They are not committed to, or perhaps have even explored, any specific identity. They have no specific future goals and have not reflected on their identity or their place in the world. Adolescents in this status are often volatile and unpredictable; without any specific plan for events to come,

they handle every situation as it arises and their main aim is to attain pleasure while avoiding discomfort.

Identity foreclosure In this status adolescents have a very strong commitment to inherited values and beliefs and engage in very little self-exploration. Rather than questioning inherited beliefs, they move toward a deepening of acceptance. Introspection and deciding what is important to them is not an active process. Instead, their sense of identity is attained by incorporating the values and beliefs of their family, friends, culture, and community. To some extent they accept the identity that is expected of them without considering other possibilities.

Moratorium In this status, unlike that of identity foreclosure, adolescents have a very high level of self-exploration and little commitment to inherited values and beliefs. Adolescents in this status are in a state of what can be described as an identity crisis. They explore different beliefs, values, and goals for the future. They experiment with their identity and their place in the world without making any ultimate decisions about what beliefs, values, and plans should dictate their life. They do not commit to an identity, but rather try out several options in a search for the best fit. An important aspect of this identity status is keeping options open, reflecting on and reassessing belief systems and changing sense of self.

Identity achievement In this fourth and final identity status adolescent have both a high level of self-exploration and a high level of commitment to values and beliefs. These adolescents have realized what beliefs, values, and goals are most important to them and have established a sense of purpose that will direct their life. Their active search for identity is over; they have already explored different alternatives, experimented with various beliefs and values, are confident and positive about the values and choices that will guide them through life.

Each of these statuses signifies a specific structure of identity development. Like Erikson, Marcia (1966) believes that these statuses are sequential, however, he does not assume that all adolescents go through all of the statuses. Depending on individual, geographical, cultural, and religious factors, some adolescents might undergo just one or two of his proposed statuses. Furthermore, he does not assume that an adolescent's identity status is the same in all areas of life, but allows that it might differ between areas such as school, work, politics, and religion. Thus, unlike Erikson, Marcia believes it is possible for the adolescent to have more than one identity status at a time. Also, unlike Erikson (1950, 1959), he does not believe that the developmental direction of these identity statuses must be linear. Certain life events might cause the adolescent to regress to an earlier identity status in order to adapt to a new life situation.

According to Marcia (1966), the purpose of the four identity statuses is to illustrate the gradual transformation of a very unspecific and vague identity to a defined autonomous personality with a strong sense of self. Thus the possession of a defined and autonomous identity is the mark of a "well-adjusted" person.

It is not within the scope of this thesis to fully apply Marcia's theory of psychosocial identity, but to recognize that a vital developmental task of adolescence is to integrate originally compartmentalized identities into a solid sense of self and a committed identity. This is

achieved through experimenting with identities, beliefs, and plans. Examining the Internet as an everyday environment might add to our knowledge of adolescence, because the Internet is a context that allows for identity exploration in a way no other medium has ever offered before. The availability of different influences and the possibilities for identity exploration on the Internet far surpasses that of pre-Internet society. Several studies have provided evidence for adolescent identity experimentation online (Calvert, 2002; Lenhart et al., 2001; Turkle, 1995; Valentine & Holloway, 2002).

Although the Internet can be regarded as an everyday environment for adolescents, with several similarities to offline social networks and communication, it is difficult to make a fair comparison between the online and offline environments. Most noticeably, the very nature of an ICT setting is based on a lack of physical proximity. The online user is "disembodied" to some degree, although the technology integrated in the means of communication (e.g., webcam images, VoIP), allows some depiction of the physical self. Still, even though online communication has come a long way since its text-based origin, there are some major differences between it and offline communication. For one, how users choose to depict themselves online is in many cases totally in their control. Thus, their depiction might be completely different from their actual physical self. Secondly, many social cues, such as expression and body language, commonly used to interpret or signal mood and meaning are often lost in an online setting. However, this is not necessarily a bad thing, as the lack of social cues can be favorable for individuals who struggle with social interaction and may be adapted to without the pressure of face-to-face interaction (Subramanyam & Smahel, 2011).

In the following chapter, I will explore the literature on the Internet as an everyday environment.

The Internet as an everyday environment

As ICT has become an important part of young people's everyday life, boys and girls now use it extensively to interact socially, extend existing relationships, establish and maintain new ones, and keep up with daily activities in their life (Valkenburg & Peter, 2011). The incorporation of ICT into adolescent's everyday environment appears to be an imperative for the 21st Century information society, where production and availability of information progresses at an incredibly high rate. ICT is a tool for accessing not only a wide range of educational and professional knowledge and opportunities, but also tools for increasing social capital. In contrast to the mid-1990s, when the majority of the online population was techno-centered individuals, early adopters, and university students, the Internet is now an embedded part of children's and adolescents' daily lives (Subramanyam & Smahel, 2011).

The average European child aged 9 to 16 spends about 88 minutes online every day, much of which is spent using social media sites and applications to communicate with friends and family (Livingstone, Haddon, Görzig, & Ólafsson, 2011). Internet usage has also become much more private as many adolescents use mobile devices to go online. In a large European study it was found that on average, one third of European children and teenagers use their

mobile devices (mobile phones, tablets, handhelds, etc.) to go online. In Sweden, more than 45 percent of teenagers access the Internet from a mobile device (Livingstone, Haddon, Görzig, & Ólafsson, 2011).

The Internet's infrastructure could be described simplistically as a vast array of machines, all linked together by ordinate and subordinate interconnected networks communicating together when needed. Online social networks are based on a similar principle, only the networks are made of people, all linked together and organized through the smaller groups of personal networks. Any offline social network emerges from communality based on family, social status, recreational activity, or geographic or social proximity. This is also true for online personal networks; however, the possibilities for extending, complicating, and simplifying existing personal networks and the possibilities for creating new ones are almost endless for adolescents on the Internet. The lack of requirement for proximity offers the opportunity to partake in the same sorts of networks as in the offline sphere, such as lifestyle and common interests, but with less fewer complications due to time, geography, culture, and availability. Furthermore, activity in online personal networks is more easily regulated, and adolescents can choose whether to actively participate or to be a passive observer. Young people also have the choice to be anonymous but at the same time be a contributing member of a social group, which promotes their socialization without the fear of preconceptions leading to exclusion. In this way, young people may have greater control over their social circles and less fear of breaking the cultural or social stigmas they may face in their offline everyday environments (Valkenburg & Peter, 2011).

In Sweden, 86 percent of households have a broadband connection, which is among the highest percentages in Europe (Findahl, 2013). Most adolescents in Sweden have access to the Internet from their home and most have a computer in their own room (Findahl, 2013). In Europe as a whole in 2011, about half of all children and teenagers went online from their own rooms (Livingstone, Haddon, Görzig, & Ólafsson, 2011). Northern Europe, however, has a very high Internet penetration rate, with three out of four children and adolescents having online access from their own rooms, making Sweden one of the most connected countries in Europe (Livingstone, Haddon, Görzig, & Ólafsson, 2011).

Sweden's high Internet penetration rate would imply a significantly reduced *digital divide*— the imbalance between socio-economic groups of access to ICT such as computers and Internet access. The term also refers to the discrepancy between early adopters and the general public. It could be argued that the digital divide still exists in Sweden to some extent with only some people able to afford more expensive new technology with new functions. However, the basic functions and activities of the Internet, such as browsing and communicating, are accessible through most home computers and mobile devices. It should however, be pointed out that the digital divide is more likely to be a gap in knowledge concerning the use of ICT between age-groups than between different socio-economic groups.

Anonymity

Over the years the role of online anonymity has changed. There are several reasons for these changes: communication hardware such as web cameras and changes in software such as optimized high resolution video and audio feeds are more common today than just a few years ago. However, the very nature of social networking has had a great impact on the concept of Internet anonymity. One of the most influential forces behind this change has been the rise of the world's currently largest social network, Facebook. Approximately a decade ago when Facebook was founded, a major change in Internet anonymity also came about. Participation required users to forego their online aliases and instead post under their real names. A decade later, Facebook is a vital part of the Internet's identity infrastructure; "connect with Facebook" is even integrated into other social applications and services and has come to be known as an individual's online passport. In David Kirkpatrick's book *The Facebook Effect* (2010), Facebook CEO Mark Zuckerberg was quoted on his views about using online personas:

> You have one identity. The days of you having a different image for your work friends or co-workers and for the other people you know are probably coming to an end pretty quickly … Having two identities for yourself is an example of a lack of integrity.

However, Bloomberg Business Week (Stone & Frier, 2014) recently quoted Zuckerberg withdrawing a little from that position:

> "I don't know if the balance has swung too far, but I definitely think we're at the point where we don't need to keep on only doing real identity things," he says. "If you're always under the pressure of real identity, I think that is somewhat of a burden."

Whether or not this shift in viewpoint resonates with the adolescent online user is anybody's guess, however, it could represent a counter-reaction to the massive decrease in active adolescent Facebook users we have seen during the last couple of years. In fact, during three months in 2013 about 16 percent of teenagers in the United States between the ages of 16 and 19 decreased their activity on Facebook. In Europe this decline was even higher, with a 30 percent decline in Sweden and a massive 52 percent decline in the Netherlands (Global web index, 2013).

Social Networking Sites

Today, one of the primary tools for communication in the adolescent group is that of social networking sites (SNSs) such as Facebook (Reich, Subrahmanyam & Espinoza, 2009) and Twitter. Facebook, for example, allows the user (age 13 or above) to register a profile which is either public (i.e., available to everyone) or private (i.e., only available to users within the person's network). These networks are made up of other users such as family and friends with

whom the adolescent can socialize in either a private or public setting. Interactions in a private setting would be private messages shared only by two or more people to whom the message/discussion are intended. Interactions in a public setting would be commenting on, approving (liking), or sharing either their own or others' submissions on the user's profile page, timeline, or wall. Submissions are not restricted to text but may also include user-generated content such as photos and videos.

Over the years, trends in the use of SNSs have changed. Sites such as Myspace and Friendster grew less popular as more and more users of all age groups migrated to Facebook. Currently Facebook is the largest SNS in the world ranked by the number of users (1.15 billion). However, region-specific sites like Qzone and Sina Weibo (mostly in the People's Republic of China) are also massive, with between 500 and 712 million users (Ballve, 2013).

Much previous literature has focused on anonymity as an important variable for adolescent Internet use. However, anonymity does not seem to be an important factor in social networking. Not only does creation of a Facebook profile require the user's actual name, but the user's network is most often comprised friends and family, rather than anonymous connections. This is also true for adolescents, whose networks are often made up of friends, classmates, relatives, and immediate family, indicating that adolescents tend to gravitate toward interactive settings used by other people in their lives (Subrahmanyam, Reich, Waechter, & Espinoza, 2008).

Chatrooms

Historically, anonymity has been reported as an important aspect for adolescents in online interactions (Cooper, 1998). With the rise of real-identity SNSs such as Facebook the way adolescents interact with others has changed to some extent. However, there are other online venues, namely chat rooms, where anonymity is still a factor. A chat room is most often a place for text-based synchronous chat between two or more people, often strangers. Like SNSs, interaction within a chat room can be either public or private; however, the typical chat room is based on real-time interaction, i.e., a simultaneous dialog or discussion between two or several individuals (Greenfield & Subrahmanyam, 2003). Chat rooms predate SNSs by years and were originally text-based only with close to total anonymity for the participants.

When using chat rooms, participants often create a user/nick-name which identifies them within the context of that room. This name can be anything but is often based on aspects of the user's self-identity such as special interests, sexual persona, or gender (Subrahmanyam, Greenfield, & Tynes, 2004), and is often used to broadcast a message about the sort of people they seek to interact with (Šmahel & Subrahmanyam, 2007).

As technology has progressed, however, so have many chat rooms and audiovisual functions have been integrated. Many of the more popular chat rooms such as Omegle, Chat roulette, and Chatrandom are randomized and anonymous to a certain extent, but users can both see and hear the person they are interacting with. As one might expect, safety concerns about

interacting with strangers have resulted in a rapid decline in these sites' popularity from their glory days. However, even with that decline about 20 to 40 million people worldwide still use these chat sites every day (PRWeb, 2014).

Risks

As with any environment, it is not without risk to navigate the digital landscape. Depictions of pornography, violence, hate propaganda, pro-anorexia sites, bullying, and sites advocating self-harm and drug-use are some of the more common negative experiences reported by children and adolescents (Livingstone, Kirwil, Ponte & Staksrud, 2013). These risks are not necessarily perceived as upsetting or harmful by adolescents who come in contact with them, but some do report feelings of distress when confronted with explicit online content. It is therefore important for parents and teachers to be aware of the experiences young people might have and acknowledge that this is a part of their everyday life as important as any other. In this thesis, I define risks as explicit online content of a pornographic, violent, and/or hateful nature.

Sexually Explicit Internet Material

The explicit content most commonly reported by European teens as offensive is sexually explicit internet material (SEIM). SEIM is defined as "(audio)visual material on or from the Internet that depicts sexual activities in unconcealed ways, which include the overt depiction of (aroused) genitals and oral, anal, and vaginal penetration" (Peter & Valkenburg, 2009). Many adolescent Internet users report contact with sites containing SEIM (Peter & Valkenburg, 2009; Staksrud & Livingstone, 2009; Livingstone, Haddon, Görzig, & Ólafsson, 2011).

Studies have shown that boys are more positively disposed toward pornographic content, regardless of whether they have sought out this content or "stumbled" upon it by mistake and are therefore less likely than girls to report avoiding SEIM-oriented websites (Mediaradet, 2008; Livingstone, Haddon, Görzig, & Ólafsson, 2011). Still, almost half of all adolescent girls report contact with SEIM (Peter & Valkenburg 2006; Mediaradet, 2008; Livingstone, Haddon, Görzig, & Ólafsson, 2011). Furthermore, several studies show that many adolescents report being exposed to violent or bloody images online (Hasebrink, Livingstone & Haddon, 2008, Livingstone, Haddon, Görzig, & Ólafsson, 2011).

In the United States, the National Juvenile Online Victimization study found that exposure to SEIM, sexual solicitation, and violent content is on the decline. This may be attributable to advances in search engine technology and filtering software. However, it could also be a sign of a general loss of interest in explicit content as a result of a fatigue-effect regarding content that adults would consider upsetting but that has become boring to adolescents. According to a study in the United States, however, unsolicited exposure to pornographic content is also on a decline, to some part owing to development of search engine tools (Mitchell, Finkelhor,

Jones, & Wolak, 2010). Still, many teens aged 13 to 16 report unintended exposure to pornographic websites (Livingstone, Haddon, Görzig, & Ólafsson, 2011).

Hate & Violence

Another type of online content that could be upsetting is hateful content. Hateful content is material that promotes hate against individuals or groups and is posted by racial supremacy groups, religious extremists, and others who wish harm to specific people. Although it is not as abundant as SEIM or violent content, many adolescents report contact with this type of websites and individuals (Stahl & Fritz 2002).

A problematic aspect of the Internet is the ease with which anonymity can be exploited by hate groups to spread propaganda and threaten others (McKenna & Bargh, 2000). According to Lee and Leets (2002), hate groups use the Internet for recruitment purposes, to disseminate political propaganda, and to sell paraphernalia. They argue that adolescents are more likely to sympathize with such viewpoints, and compared to adults, are more accepting of them. However, studies show that individuals who are exposed to hateful propaganda usually find it a cause of distress (Leets, 2001).

Studies show that online explicit content could have a negative impact on young users, who report feelings of vulnerability after contact with explicit online content. Contact with pornographic, violent, and hateful content have been reported to have a negative impact on young boys' and girls' self-confidence (Beran & Li, 2005; Patchin & Hinduja, 2006; Stahl & Fritz, 2002).

More than a fifth of adolescents report feelings of insecurity and threat when using the Internet. Many of these feelings were due to website content, but even were provoked by people they had contact with via chat or email. Boys more often reported feeling vulnerable as a result of website content, and girls more often reported feeling threatened by other people via chat or email (Stahl & Fritz, 2002). In addition to feelings of discomfort and vulnerability, these experiences can also pose a risk to adolescents' development. This does not by any means imply that everyone views exposure to explicit content as a harmful experience, but many teenagers report negative feelings related to explicit content, especially if the exposure was unsolicited. During the late 2000s and early 2010's, unsolicited contact with pornographic contact was a very common occurrence, with 65 percent of adolescents between the ages of 13 and 16 reporting involuntary exposure (Livingstone, Haddon, Görzig, & Ólafsson, 2011).

In the following section I will explore the literature on the importance of family, friends, and romantic/sexual activity during adolescence and relate those themes to adolescents' use and experience of the Internet.

Family, friends and romantic/sexual activity

Emanating from either an ecological systems perspective or a psychosocial perspective, family is portrayed as a central point for identity development. Relation to, and interaction with parents have most frequently a huge impact during childhood and adolescence (Bronfenbrenner, 1979, Erikson, 1979; Marcia, 1966). Furthermore, relation to one's peer group is also considered as highly important, especially during adolescence as proposed for instance by Harris (1998). Furthermore, another important part of establishing a stable identity as proposed by Marcia (1966) is the creation of a sexual identity. These aspects are all considered to be important parts of the adolescent development and everyday life. Earlier studies have shown that relation to family and friends have been linked to participation in sexual activities in an offline setting (Shulman & Scharf, 2000). Internet as an everyday environment entails by definition that it is connected, not only to the worldwide web but also connected to, and integrated with, most other aspects of the adolescents relational, social, romantic and sexual life. As proposed by Johnson (2008), ICT interconnects systems of personal, social, societal, professional and chronological proportions.

The relation to, and ultimately, separation from, immediate family is an important aspect of growing up and establishing a stable identity. Equally important is relationships with peers and romantic interest as well as finding a sexual identity (Erikson, 1979, 1989; Marcia, 1966).

Family

Especially for younger adolescents, parents are among the primary agents of socialization regarding relationships as well as sexuality (Miller, Norton, Fan, & Christopherson, 1998; Whitaker & Miller, 2000). Studies indicate that parental attitudes are among several of individual and contextual influences for adolescents with regards to sexuality (Meschke, Bartholomae, & Zentall. 2002).

In offline contexts, three primary aspects of parenting have been found to correlate with adolescents' sexual activity: attitudes, communication, and control strategies. Transmission of attitudes and values does not have to involve direct communication, but can be conveyed indirectly to the adolescents by observing the behavior of their parents (Newcomer and Udry 1984). For instance, one study found that sexual activity is lower among adolescent girls who perceive their family's attitudes toward sexual activity to be less positive (Akers, Gold, Bost, Adimora, & Fortenberry, 2011). However, parent's attitudes regarding sex can also be conveyed to the adolescent through direct communication i.e., through discussion (Miller, Norton, Fan, & Christopherson 1998).

With regard to communication, many parents find it difficult to have an explicit conversation about sex with their children. One study in the United States found that as many as two thirds of parents reported communication difficulties with their teenage children due to difficulties such as embarrassment (Jerman & Constantine 2010). Nevertheless, several studies have shown that when parents discuss sexual aspects with their teenagers, it seems to lead to

healthier sexual behavior (Jaccard, Dittus, & Gordon 1996; Leland & Barth 1993; Miller, Forehand, & Kotchick 1999).

There is also a gender aspect to be observed with regard to communication as parents seem to be much more inclined to discuss sex and sexuality with their adolescent daughters than with their sons (Regnerus 2005). This has been shown to be even more apparent in mother-daughter relationships as mothers especially communicated about sex more frequently to daughters than to sons (Jerman & Constantine 2010; Tobey, Hillman, Anagurthi, & Somers 2011). However, studies have also shown that daughters are more likely to talk about sex with their mothers than boys are. In one study on parent-teen communication, it was found that daughters were much more likely to talk to their mothers about sexual topics than sons, although there were no gender differences in communication about sexual topics with fathers (Raffaelli, Bogenschneider & Flood, 1998). Kotchick, Dorsey, Miller, and Forehand (1999) found that when communication with mothers was perceived as open and mothers were perceived as approachable, reported levels of sexual risk-taking behaviors were lower (Kotchick et al. 1999).

There are, however, also studies showing that parental communication is unrelated to adolescent sexual activity in both male and female adolescents (DiIorio et al. 2002; Guzmán & Dello Stritto, 2012). Another factor that has been shown to be important is the age of the adolescent as older adolescents reported more talking about sex with their parents than younger adolescents (Tobey, Hillman, Anagurthi, & Somers, 2011).

A final primary aspect of parenting that has been found to correlate with adolescents' sexual activity is parental control strategies. Meschke et al. (2002) argues that it is likely that the perceived quality of the parent-child relationship plays a significant mediating role between parental factors and adolescents' sexual activity. If the parent-child relationship is perceived as warm and supportive it can contribute to more positive and frequent communication. This in turn would mean that the likelihood that parents' attitudes will transfer to their children are greater, and that parental control strategies are perceived by the teenagers in terms of support and commitment rather than critique and scolding.

As adolescents tend to focus on relationships with peers and to a certain extent reduce communication with their parents it can cause some strain on the family. In the quest for autonomy, young boys and girls often grow unsatisfied with their parents authority and choose to rebel against them (Middleton & Putney, 1963). Mesch (2010) hypothesizes that in the information age, tensions connected to this conflict are heightened due to the diversity of the adolescent's personal networks. To clarify, traditional measures to exercise control of, and obtain insights into the adolescents' social sphere, has in the past been more of a possibility as most of these environments have been located in schools, community centers and certain neighborhoods, all of them institutions with a fair amount of parental control and attendance. Parents could have some insight in how their child acts in these places, who they socialize with and they could, to some extent, regulate access for them (for example by issuing a curfew). A major difference in the information age for adolescent is their possibility to greatly diversify their social networks, beyond all the traditional institutions without interruption and

regulation by their parents. The lack of insight can of course can be a cause for alarm for parents as can be a significant part of their child's everyday life of which they have little to no insight. Furthermore, Mesch (2010) argues that the level of technical expertise can displace the family dynamics, as the family is a hierarchy of authority, an authority that might be placed with the adolescent instead of the adult due to the imbalance in technical competence. The information-age adolescent might therefore be the member who the others turn to for technical guidance and advice, further expanding their power within the social network and preventing parental control of their social interactions outside of the home.

Furthermore, Whitaker and Miller (2000) found that adolescents' adaptation to peer norm behavior regarding sex and the use of contraceptives was moderated by parental communication. Thus, a possible outcome of absence of parent-child communication regarding sex could be adolescents relying more on peer groups for information about sex and more likely to adapting to norms prevalent within that group rather than those of parents (Whitaker & Miller 2000).

Adolescents' online activities

Knowledge about the association between parents' attitudes and adolescents' online sexual activities is very limited. Cho and Cheon (2005) found that parental engagement and insight into their teenagers' Internet use contributed to safer Internet use but research describing the link between parents' attitudes and teenagers' online sexual activities is still lacking (Meschke et al. 2002).

Concerns about Internet as a social context for adolescents are somewhat conflicting. On the one hand, there is a concern that content of an explicit nature such as pornography, violence or hateful content might harm children and adolescents (Staksrud & Livingstone, 2009). On the other hand, the fear of children and adolescents being socially and educationally disadvantaged if being disallowed online access is equally prevailing (Sandvig, 2003; Johnson, 2010). Parents can of course, to an extent, regulate their children's access to the Internet, at least to the home computer, directly challenging the adolescent's autonomy. However, European studies show that most parents do not regulate their teenager's computer use (Livingstone, Haddon, Görzig, & Ólafsson, 2011).

Attitudes toward how explicit content should be regulated differ between European countries. Most countries leave the decision to parents and network administrators whether or not they activate parental security settings. However, not all, in the UK for instance a proposal was made to four of the country's largest Internet service providers to force their customers to either "opt-in" or "opt-out" which means making an active decision regarding the access to explicit content on their home network, placing the responsibility with the parents rather than on the Internet as a whole. This proposition was based on a policy document from the UK Council for Child Internet Safety (Cameron, 2013).

According to previous studies, parents seem to have very limited insight in what adolescents actually do online (Cameron, Salazar, Bernhardt, Burgess-Whitman, Wingood, & DiClemente, 2005). Thus, given the accessibility of online sexual content in conjunction with

little social control, it is likely that participation in online sexual activity could have an impact on sexual behavior. For instance, early-maturing boys experience sexual arousal and drive earlier than their peers (Mendle & Ferrero, 2012; Ostovich & Sabini, 2005), it could be expected for them, in early adolescence, to engage more in this online behavior than later-maturing boys.

Friends

Developmental transformations during adolescence include physical, emotional and social changes. Relationships with peers become superordinate and as such, the communication with parents decrease as the adolescent focuses on forming and maintaining friendships and romantic relationships (Giordano, 2003). Peers tend to assume a more central and different role than parents and siblings. Interaction with friends becomes the most important activity for most adolescents. One consequence of this shift in social interaction is that the peer group to a large extent replaces the parents as the primary source of identification (Harris, 2011). The values and norms of the peer groups make up the template for identity within that specific social structure and adoption of these templates offer a sense of belonging, of being part of a larger context, countering feelings of insecurity and alienation that are common during adolescence (Rosenthal, Moore, & Flynn, 1991).

Studies show that quality of relationships to peers is closely related to the individual's psychological well-being. For instance, adolescents who lack attachments to peers are more probable to report psychological distress (Bearman, Moody, & Stovel, 2004). Thus, it could be argued that the availability of social interaction online could fill an important function as a tool for establishing and strengthening peer attachments, especially for those adolescents who do not have an active offline social life. One example of such tools is social networking sites such as Facebook and Twitter. These sites and other types of social media not only offer the possibility of expanding ones social circles but also offer the user a higher degree of control over who and when they socialize with others, but also how they represent and describe themselves online.

Studies show that the rapid increase in adolescents Internet use is largely due to the use of social media (Roberts & Foehr, 2008) Several studies have found that adolescents primary purpose for use of Internet as a medium is for social purposes (Livingstone et al, 2011., Gross., 2004; Lenhart et al., 2001). It could be argued that the reasons for this are the alluring aspect of establishing and maintaining peer-relationships, typical for the developmental phase of adolescence (Mesch, 2009; Erikson, 1959; Marcia, 1966). In many ways, the online sphere and the social aspects of this environment has brought about a change in how we define roles of race, gender, power, economics and ethics.

The concept of online community's has with its rampaging progress both challenged and redefined the idea of what a community is and what it means to be a participant of a community. (Johnson, 2001) Children and adolescents use Internet in different ways. At a younger age studies show that Internet is primarily used for communication such as email, seeking information such as school related information and hobbies and playing games. As

young boys and girls grow older, the interest for SNSs increase, partly because of age restrictions enforced by the more popular sites such as Facebook (Peter, Valkenburg, & Schouten, 2007; Johnson, 2010). In average, 82 percent of European teens aged 15-16 years old, have a social networking profile, the majority of them on Facebook. In Sweden, adolescents between the ages of 13-17 constitute 15 % of the country's entire Facebook population (Social Bakers, May 2014).

Interaction on every social networking system is structured in a particular way, making it a way to intermingle with a selected group of friends but also to meet new "friends" and contacts. Interaction is also dependent on how the user chooses to utilize their profile i.e. how much information they share about themselves to strangers. How adolescents choose to control this is related to a sense of self-disclosure, but also to a degree related to digital skills. For example, one in four European teenagers report using a public profile, enabling anyone to view their profile page (Livingstone et al, 2011). Facebook penetration rate in Sweden is about half of all the country's population and more than half in relation to the number of Internet users. The total number of Facebook users in Sweden is reaching close to 4.5 million. The male/female ratio is distributed somewhat equal with five percent more male users than female users (Social Bakers, May 2014). The largest age group is currently 25 - 34 with almost a million users, constituting more than a fifth of all Facebook users in Sweden. The age group of adolescents and young adults (13-24 years old) make up more than a third of the Swedish Facebook population (Social Bakers, May 2014).

With regards to how much time adolescents spend online and the fact that social activity is one of the main uses for adolescents online, one might argue that developmental psychology needs to pay more attention to Internet as an important part of young boys' and girls' daily life. The Internet is an environment in which adolescents learn, explore, socialize and maybe grow up within, in parity with the physical sphere.

Romantic and sexual activity

During early and mid-adolescence, as sexual maturity sets in, young boys and girls become more and more interested in romantic and sexual activities (Collins, Welsh, & Furman, 2009; Ott, 2010). A major part of coping with sexual development is to learn how to deal with the upsurge of sexual feelings in a socially acceptable, satisfying, healthy and non-exploitative way. The difference in how sexuality is depicted and presented might be very different in nature depending on its origin (Frydenberg, 1994). For example, a sex-educator or parent might describe it very differently than popular media, peers or pornography. This might be confusing for the adolescent. Thus, it could be argued that the dominating origin of information regarding sex and sexuality could have a major impact on the young individual's internalization of sex as a concept (Frydenberg, 1994). Previous research has shown a noticeable increase in sexual activities during this period of time (Ott, 2010), an increase closely associated with puberty. Pubertal timing has also been found to be a significant factor as adolescents who enter puberty at an earlier stage than their peers has shown to be correlated with having a stronger sex-drive and earlier experience of sexual urgings during early- and mid-adolescence. Furthermore, pubertal timing is also correlated with earlier

experiences of romantic and sexual activities such as intercourse (Ostovich & Sabini, 2005). One recent review concluded that this link is primarily biologically or hormonally driven (Mendle & Ferrero, 2012). If it is a matter of biology and hormones, it could be assumed that engagement in romantic and sexual activity in different contexts, such as that of the Internet, could be expected in boys with an early pubertal timing.

Median age for sexual debut in Sweden is, according to recent studies, between 15 and 16 years of age (Häggström-Nordin, Borneskog, Eriksson & Tydén, 2011; Ungdomsbarometern, 2014). During adolescence, sexual behavior and experiences of such differs somewhat between boys and girls, for example, girls report having more experiences of sexual activities such as petting and receiving oral sex than boys while boys report more experiences of masturbation and watching pornography (Häggström-Nordin et al, 2011).

Studies with repeated measures on sexuality also point to a general increase in sexual activity over a 10-year time period. Tydén, Palmqvist and Larsson (2011) found in their study of young Swedish women that between 1999 and 2009 that the mean number of reported sexual partners had more than doubled, as had the frequency of reported unprotected sex as well as the decline in use of contraceptives. In a large-scale American study there were apparent differences in participation in sexual activities between the ages of 14-15, 16-17 and 18-19 as participation in different sexual activities was higher the older the adolescents were (Herbenick, Reece, Schick, Sanders, Dodge, & Fortenberry, 2010).

Sexuality as a developmental factor is present through most of a person's life, but is particularly prominent during adolescence (Steinberg, 2008). Adolescents are forced to adjust to their developing sexuality, especially their increased sexual drive and general interest in sexual activities (Chilman, 1990; Macek, 2003; Weinstein & Rosen, 1991).

In a traditional context, studies suggest that there are some gender differences in how adolescent boys and girls relate to sex. For one, boys tend to have more sexual expectations than girls. However, as relationships progresses these differences are reduced. This change might be due to the difference in social context of adolescent sexuality (Macek, 2003). For instance, sexual proficiency in the Western adolescent male culture is often connected to an increase in social status and sexuality is associated with looking for a partner, especially during early and mid- adolescence. Contrary, adolescent girls on the other hand perceive sexuality as a matter of their attractiveness to boys and boyfriends (Miller & Benson, 1999).

Romance and sex online

The social elements of sexual expression comprise much more than the usual focus on sexuality, that is, intercourse. They range from flirtation through handholding, kissing fondling, mutual masturbation and various forms of penetrative sexual encounters (Frydenberg, 1994). So can young people find togetherness online? Can the interpersonal relationships of individuals who cannot touch, see or smell each other be intimate and constructive? ICT frequently play a vital role in relationships, casual relationships as well as

the initial stages of serious relationships. There are several settings and technologies for adolescents to meet, explore and promote romantic relationships with others with the advantage of physical distance in addition to anonymity. One such technology is streaming audiovisual communication which offers the possibility of real-time communication with other users over a wide array of sites (Peter, Valkenburg, & Schouten, 2007).

The advancement of information technology such as webcams offers the possibility of sexual exploration and experimentation with the benefit of anonymity and the choice to end the activity at any given time. As such, some of the dangers of sexual experimentation are avoided, however, some new arise. Sexual transmitted diseases and unwanted pregnancies are of course not an issue when practicing webcam sex, instead the concept of practicing safe sex is more about protecting ones identity than using prophylactics. Showing ones face before a webcam makes it a much more risky situation as ones identity is might be exposed to others (Chiou, 2007). Even though physical and geographical distance and the possibility of anonymity offer a safe environment for sexual exploration and socialization, the size and complexity of online networks also brings a wide range of questionable content and risky situations (Wolak et al, 2010).

Our understanding of adolescent sexuality has taught us that the sexual repertoire of the adolescent can be quite varied but also that sexual activity takes place in different contexts (Tolman & McClelland, 2011). Sexual activities like viewing pornography online has several appeals such as that it is easy, anonymous, and affordable (see Cooper, 1998), all factors who could be regarded as appealing to adolescents. There are several online activities that are defined as sexual but one of the most prominent is the consumption of pornography, especially common in the male adolescent age group (Peter & Valkenburg, 2008; Sabina, Wolak, & Finkelhor, 2008; Wolak, Mitchell, & Finkelhor, 2007). However, even though it is a commonly reported activity the number of users varies between studies, for example, in a study by Wolak and colleagues (2007), about 25 percent reported having solicited sexually explicit content online. Other studies have found even higher prevalence (Flander, Cosic & Profaca, 2009). It is therefore likely to assume that gender as well as pubertal timing is related to online sexual activity. However, reasons for partaking vary. Sexual gratification and sexual information are both reported reasons (see Attwood, 2005, for a review). Regardless of reasons, it is apparent that the Internet is an environment in where many young people engage in activities of a sexual nature.

GENERAL AIM

Based on the literature, it stands clear that the last 15 years of research has explored what adolescents engage in on the Internet. The pros and cons of information found online, the way adolescents use social media to interact with others, and what activities of sexual nature adolescents partake in, are all questions that have been explored previously. However, research on the Internet as an everyday environment for young people could still be regarded as in its early stages. There are several important gaps of knowledge that needs to be addressed. For instance, studies have shown that adolescents encounter content that can be

regarded as offensive by the viewer. Inappropriate content which adolescents report coming in contact with, is often of a pornographic, violent, and/or hateful nature. What we know less about is how adolescents actually feel about being exposed to this type of content: What emotions arise due to this exposure? Do they conceptualize "inappropriate" in the same way the adult world do? Furthermore, we know even less about what strategies are used by adolescents to deal with the emotions which might arise from such content. Studies have also shown that parental attitudes regarding sexuality can be transferred to adolescents both directly and indirectly. What we do not know, is if this is true for sexual activity online as well. We also know that parents' attitudes regarding adolescent sexual activity differ depending on the gender of both the parent and of the child. What we know less about is if this is true in an online setting as well. Another important part of the developmental phase of adolescence is the onset of puberty. We know from previous research that pubertal timing is linked to participation in romantic/sexual activity in a traditional setting (offline). However, we do not know if this is true for an online setting as well. Finally, previous research has shown that adolescents partake in online sexual activities such as flirting, watching pornography and engaging in discussions about sexuality. What we know less about is whether or not participation in these activities increases over time, and more importantly, if they are correlated with participation in sexual activity offline.

The general aim of this thesis is to fill the above mentioned gaps in knowledge by examining the role of the Internet as an everyday environment in adolescent boys' and girls' social and sexual life. Aspects such as romantic and sexual experiences, pubertal timing, experiences of disturbing and frightful experiences as well as parental involvement, insights and attitudes in their children's digital everyday environment will be examined and discussed. This thesis emanates from findings from four different studies, all touching on subjects such as coping, parental involvement, pubertal timing and sexual experiences in a digital context.

SUMMARY OF THE STUDIES

The four studies which constitute the basis of this thesis all deal with different activities during adolescence in a digital everyday environment. The first study is based on questionnaire data from 14-16 year olds (n=226). The three following studies are based on data from a larger research program, called FUN (an acronym for Föräldrar (Parents), Ungdomar (Youths), and Nätet (the Net). It covers approximately 660 secondary and upper secondary (Swedish high-school) students. Participants in the FUN project consist of two cohorts of students and their parents in rural and urban districts in western Sweden over a period of three years. Computer-based questionnaires concerned with youth sexual activity in new (i.e., Internet) and traditional (i.e., not on the Internet) contexts were used. Half of the adolescents are tracked from grade 7 to grade 9, and half from grade 10 to grade 12. At the first and third data-collection waves, the parents of the participants also took part by answering questionnaires. The second project was funded by the Swedish Council for Working Life and Social Research (FAS).

Study I

Aims

The overall aim of **study I** was to examine to what extent adolescents come in contact with explicit online content, what feelings are linked to this exposure and what, if any, coping strategies were used.

Participants & Procedure

During spring 2007 data were collected from students in groups of 20 to 25 individuals in classroom settings in the students' schools. Students completed a comprehensive questionnaire that, in addition to including demographic data, covered the following areas; experiences and use of the Internet, social-relationships, self-esteem and risk-behaviors. Furthermore, questions regarding feelings associated with explicit content and coping strategies used were directed at the persons concerned. The questionnaire took between 20 to 40 minutes to complete and during this time at least one researcher where present at all times to answer any questions in connection with the survey.

Participants in **study I** were 226 students (119 boys and 107 girls) (*M* age = 14.5, *SD* = .92) from two secondary schools in a mid-sized city in Sweden. The schools had a predominantly middle class intake. Informed consent was obtained from both parents and participants if the participants were younger than 15 years old, and from the students in the older group (older than 16). All students who had agreed to participate and who had written consent from their parents were included in the study. Nearly all participants reported having access to computers at home (97%) and used it to access the Internet (95%). Many of the participants had a computer located in their room (51.4%). The majority of the participants reported going online every day (62.4%).

Measures

Character of Internet use. Questions regarding the focus of the participant's online activity (chatting / accessing information for educational purposes / online gaming / browsing just for fun/etc.) and how frequently they engaged in these activities (ranging from "almost never" to "more than three hours every day") were asked. Questions pertaining to the frequency of being online (ranging from "almost never" to "more than two hours every day") were also asked. Participants were also asked to report where in their home their computer was located (own room / living room / home office etc.).

Experiences with explicit online content. Questions regarding contact with explicit content were asked in two sets of questions, one pertaining to intentional contact (have you ever intentionally visited sites with pornographic content/violent or gory images/hateful content), and one for unintentional contact (have you ever by mistake found yourself on a site with pornographic content/violent or gory images/hateful content). Participants were also asked how often this had occurred (ranging from "never" to "yes, more than 5 times") Participants who reported contact with explicit online content were asked what feelings, if any, were experienced in conjunction with that specific content by answering a set of predefined statements ranging from negative emotions (I was upset/I wish I had never seen it/etc.) to positive emotions (I found it fascinating/I thought it was interesting/etc.). Items measuring neutral emotions (I didn´t think much of it/etc.) were also asked. Participants were asked if they used any specific coping strategies when encountering to explicit online content. Response option alternatives were provided in the form of a set of predefined statements (I contact the site in question and demand they remove the content/I didn't let it get to me/I talk and discuss my feelings with my parents/friends/sibling/I block the site in my web browser/I keep it inside). Each statement included a dichotomous (Yes/No) answer.

Self-esteem. Self-esteem was measured using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The scale is a ten item Likert scale with items answered on a four-point scale (ranging from "strongly agree" to "strongly disagree") with higher scores indicating higher self-esteem. The scale consists of ten statements related to overall feelings of self-worth (you think that you have a lot of good qualities) or self-acceptance (you believe that that you are worth a lot, at least as much as others) (Rosenberg, 1965).

Risk-assessment. Predisposition to risk-taking was measured using the Adolescent Risk-taking Questionnaire (ARQ) (Gullone, Moore, & Boyd, 2000). The scale measures how adolescents estimate risky situations and behavior in order to assess their inclination to take risks. The scale consists of 25 items which describe situations/behaviors (smoking cigarettes/use of drugs/having unprotected sex/joyriding/etc). Items are estimated by the participants on a 5-point scale (ranging from "not risky at all" to "extremely risky". One question regarding meeting online acquaintances in an offline setting (Meeting someone in real life whom one had gotten to know online) was added as it was pertinent to the study.

Social relations. Questions regarding relationships with parents and friends consisted of Armsten and Greenberg's (1987) Inventory of Parent and Peer Attachment. The instrument is used to assess children and adolescents' self-perceptions of the degree of trust, quality of

communication and the extent of anger and disaffection within the context of their personal relationships. Each scale (relation to mother/relation to father/relation to friends) consists of 25 items (My mother respects my feelings/My father understands me/My friends accept me for who I am/etc.) measured on a 5-point Likert-type scale (ranging from "not true at all" to "very true") with higher scores indicating a more secure attachment.

Main findings

The main finding in **study I** was the link found between adolescents contact with explicit online content and interpersonal relationships. For example, results indicated that boys were more likely to seek out explicit content if they perceived their relationship with their mothers as poorer. For girls, results showed a similar link but with their peer group being the correlating factor i.e. if they perceived their relationships with their friends as poorer, the more likely where they to seek out explicit online content. Another interesting finding was that both intentional and unintentional contact was linked to specific online activities such as downloading software but also to other factors such as age and risk-assessment (for girls). Furthermore, analysis of the use of coping strategies to deal with negative emotions that stem from contact with explicit online content showed a difference in pattern between boys and girls. Girls who reported talking to their mothers about Internet use were more likely either to talk to their friends or parents if they were sad, concerned, angry etc. about something they encountered online. Boys, however, where more likely to take a more proactive approach and block specific sites and/or content. Lastly, a correlation between the use of coping strategies and age was discovered as older boys and girls were less likely to take any action at all compared to their younger counterparts.

Study II

Aims

The overall aim of **study II** was to take a closer look at the parents' perspective regarding adolescents' sexual activities online and if their attitudes are related to what extent their children engage in online.

Participants & Procedure

Papers **II**, **III** and **IV** are based on the same research program, labeled FUN which is briefly described on page 23 (an acronym for Föräldrar (Parents), Ungdomar (Youths), and Nätet (the Net)), The research program covers approximately 660 secondary and upper secondary (Swedish high-school) students. in rural and urban districts in western Sweden concerned with youth sexual development in new (i.e., Internet) and traditional (i.e., not on the Internet) contexts Half of the adolescents are tracked from grade 7 to grade 9, and half from grade 10 to grade 12. The participants filled in computerized questionnaires during normal school hours, in the presence of a graduate student, but with no teachers. They were given instructions on how to fill in the questionnaires, and positioned physically in the classroom to ensure that they were unable to see each other's responses. At the first and third data-collection waves,

the parents of the participants also took part by returning postal questionnaires. The program was funded by the Swedish Council for Working Life and Social Research.

Contact was established with schools in western Sweden who provided the names, addresses and telephone numbers of pupils in grade 7 and grade 10. Teenagers, as well as, their parents were informed about the study and their rights as participants, by individual letters. For the younger cohort both teenagers and parents active consents, for the participation of the teenager, were obtained. For the older cohort active consents were obtained only from the teenagers. Teenagers filled out computerized questionnaires during normal school hours with a graduate student present. Questionnaires were sent out to the parents of the teenagers in connection with the information letter. Only one of the parents in a family was asked to complete the questionnaires, the parents choose whether the mother or father would complete the questionnaires and marked their relation to the child (mother or father) on the front page. The Gothenburg regional ethical review board approved the study.

Both the parents and the teenagers participated in the study by completing individual questionnaires where focus was on adolescents' sexual activities in general and in relation to the Internet in specific. In addition to the measurements presented, a part of the questionnaire also asked about participant's age, sex and educational status for the parent.
Participants in **study II** consisted of two categories, category 1 contained 649 parents of whom 77% were mothers. Category 2 consisted of teenagers in two different cohorts. The first cohort was 304 early adolescents (M age = 12.85; SD = .41; 54% daughters) and the second cohort was 333 late-adolescents (M age = 16; SD = .48; 49% daughters). All teenagers had computers at home, in the younger cohort 71% go online every day and in the older cohort 95% go online every day, this numbers are similar for Swedish teenagers in the current age spans in whole. Among parents in the study 5.9% had completed a nine-year compulsory education (mothers 5.2%, fathers 8.4%), 43% an upper secondary education (mothers 43.7%, fathers 40.6%) and 51% had a university education (mothers 51.1%, fathers 51%). The two age cohorts did not differ due to parents' sex or education status.

Measures

Parent attitudes toward adolescent's sexual activities offline include six question pertaining to different sexual activities in an offline context such as "To what degree do you approve of adolescents" 1) Flirt, 2) Go on dates, 3) Kiss each other, 4) Engage in conversations about sex, 5) Read pornographic material and/or 6) engage in sexual intercourse. Parents were asked to self-report on a five-point scale ranging from "Do not approve at all" (=1) to "Completely approve" (=5).

Parent attitudes toward adolescents sexual activities online include six question pertaining to different sexual activities in an online context such as "To what degree do you approve of adolescents" 1) Flirt, 2) Looks for a boyfriend/girlfriend, 3) Visits sites with pornographic content, 4) Engage in online conversations about sex, 5) Publishes pictures or movies of themselves to look attractive and/or 6) Use a webcam to engage in cybersex. Parents were asked to self-report on a five-point scale ranging from "Do not approve at all" (=1) to "Completely approve" (=5).

Parent's own Internet preferences include three questions that are treated as different variables.

1. *Internet use.* Parents were asked the general question "How often do you use the Internet?" Response alternatives were: "Never/almost never" (= 1), "Once or twice a month" (= 2), "A few times a week" (= 3), "Every day, less than three hours" (=4), "Every day, more than three hours" (= 5).

2. S*elf-rated Internet skills*. Parents were asked to report on their own ability to use the Internet by answering the question, "How skillful do you consider yourself to be at using the Internet?" on a five-point scale ranging from "Not skillful at all" (= 1) to "Very skillful" (= 5).

3) *General view of the Internet.* Parents were asked the general question, "What alternative do you think best describes the Internet?". Response alternatives ranged from "Only disadvantages" (= 1) to "Only advantages" (= 5).

Parents' use of rules for the teenagers' Internet use included statements about what, if any, rules were enforced in the home regarding adolescents Internet use such as "they are not allowed to" (1) chat with strangers, (2) visit any site he/she wants, (3) partake in sexual content or activities, (4) share personal information, (5) publish pictures of themselves, and/or (6) go online as often and for as long as they want. Response alternatives were dichotomous yes (= 1) and no (= 0) answers for every rule in the home.

Teenager rating of parent-child relationship. The parent-child relationship was one of three variables apart from demographics that were obtained from the teenager. Questions regarding relationships with parents and friends consisted of Armsten and Greenberg's (1987) Inventory of Parent and Peer Attachment adapted to adolescent participants. The instrument is used to assess children and adolescents' self-perceptions of the degree of trust, quality of communication and the extent of anger and disaffection within the context of their personal relationships. Each scale (relation to mother/relation to father/relation to friends) consists of 25 items (e.g., My mother respects my feelings, My father understands me, My friends accept me for who I am) measured on a 5-point Likert-type scale (ranging from "not true at all" to "very true").

Teenage frequency of Internet use. Teenagers were asked to indicate on a five-point scale how often they used the Internet. Response alternatives were: "Never/almost never" (=1), "Once or twice a month" (=2), "A few times a week" (=3), "Every day, less than three hours" (=4), "Every day, more than three hours" (=5).

Teenagers' self-reported online sexuality. Teenagers were asked whether they had: 1) used the Internet to flirt, 2) used the Internet to come in contact with future possible partners, 3) consumed pornographic material online, 4) taken part in conversations about sex or which was sexual in its nature, 5) published pictures or movies of themselves with the purpose of looking attractive and/or 6) used a webcam to engage in cybersex. For all six questions, they indicated their response on a five-point scale where alternatives ranged from "never" (=1) to "yes, every day" (=5). Due to a floor effect, we have chosen to collapse response alternative

2-5, making the three questions to dichotomies variables with only two alternatives each; experience the sexual activity – <u>not</u> experience the sexual activity.

Main findings

The main findings in **study II** concerned parents' attitudes regarding sexual activity in both traditional- and online contexts and the link to boys and girls participation in online sexual activity. Results suggested some similarity between earlier findings of attitudes reflected in the home having an impact on adolescents' disposition toward sexual activity in a traditional context i.e. offline. Results in this study revealed that parents' attitudes towards adolescents' offline and online sexual activities are closely related, although parents are more permissive in the offline setting. Furthermore, parents' attitudes towards online sexuality are not only influenced by their sexual attitudes based on traditional settings, but also by their preferences to the internet. Further, differences in attitudes based on the sex of both the parent and the adolescent was found, once again indicating that online sexual activities are associated with different feelings and emotions. Finally, the link between parents' attitudes and adolescents' online sexual activities are mediated by parental rules. These findings indicate transference of norms and attitudes from parents (fathers) to adolescents regarding sexual activity to some extent. Another interesting finding is the lack of linkages between mothers' attitudes and adolescents' online sexual activity. This is surprising, as previous studies have shown that the strongest links between attitudes regarding sexuality and adolescents' sexual behavior have been those between mothers and daughters. This finding (or lack of finding) might be attributed to the level of parental dedication in the father sample. However, due to the complexity of the research question and the relative simplicity of the statistical analysis (bivariate correlation analysis), this study does not claim to make any causal inferences whatsoever; these findings should rather be regarded as a link between two variables in a much larger nexus. This link could, however, be seminal for further analysis of longitudinal data and more complex analysis and regression modeling.

Study III

Aims

The main aim of this study was to investigate the role of pubertal timing in boys' online romantic and sexual activities. We examined how two aspects of pubertal maturation, stage-normative and peer-normative, were linked to a variety of offline and online activities in a sample of early adolescent boys (in school grade 7). As there are considerable differences in pubertal status among boys of this age (Tanner, 1978), and, more specifically, early-maturing boys differ from other boys. It is, therefore, an optimal age for testing the effects of early pubertal timing.

Hypotheses were formulated on the basis of the conclusion drawn in the recent review by Mendle and Ferrero (2012) that the link between early pubertal timing and boys' sexual activities is due to hormonal influences, and on the assumption that the peer-normative measure is not necessarily linked to physical or biological development (Tilton-Weaver et al., 2001).

Participants

The boys (N = 142) form part of an ongoing three-year longitudinal research project (described in study II). Participants in the current study came from six schools and 30 classes. The analyses were based on wave-1 data, when participants were in grade 7 (M age 12.9 years, SD 0.34).

Measures

The measures that were used are the same as those employed in other previous studies (Brown & L'Engle, 2009; Luder et al., 2011; Peter & Valkenburg, 2006; Skoog et al., 2009). We focused entirely on boys because the number of girls reporting engagement in voluntary online sexual activities is relatively small in early adolescence (Flander et al., 2009; Flood, 2007).

Stage-normative pubertal timing. Stage-normative pubertal timing was measured on the widely used Pubertal Development Scale (PDS; Petersen et al., 1988), which has been shown to have high reliability and validity (Dick, Rose, Pulkkinen, & Kaprio, 2001). Responses are given on a four-point scale, from 1 = No development to 4 = Development is complete. The items concerned skin changes, height spurt, body hair development, voice change, and beard growth. The minimum and maximum scores on the total scale were 5 and 20, respectively (M =10.89, SD =2.81; α = .78). Since all the participants were in the same grade, we used the PDS as a measure of pubertal timing.

Peer-normative pubertal timing. Just one question was used to measure peer-normative pubertal timing: "Do you think your development is earlier or later than that of other boys of your age?" Responses ranged from 1 = Much earlier to 5 = Much later. This type of itemization has been widely employed (e.g., Brown & L'Engle, 2009; Wichstrom, 2001). The scale was reversed, so that higher scores indicated earlier perceived timing.

Offline romantic and sexual activities. We asked participants whether they had ever engaged in the following activities offline: flirting, dating, kissing, and talking about sex with peers. Response ranged from 1 = never to 5 = yes, every day.

Online romantic and sexual activities. Participants were asked one general question on whether they had ever come into contact with any type of romantic or sexual content, or activity, on the Internet. Examples were given of different activities. The response options were Yes or No. The participants were asked more specific questions about their online sexual activities only if they endorsed the general item. The specific questions concerned whether they had engaged in the following activities online: looking for information about sex, flirting, searching for a girlfriend/boyfriend whom they could meet outside the Internet, posting pictures or movies of themselves in order for others to find them attractive, visiting websites with pornographic pictures or movies, engaging in or "observing" discussions about sex on chat sites, and using a web camera to take part in a sexual encounter (webcam sex). Response ranged from 1 = never to 5 = yes, every day. With regard to the specific items, adolescents

who had answered No to the general item were coded in the same way as those who had responded never.

Main findings

The main findings of study III were that stage-normative measure of pubertal timing was related to all but two aspects of online sexual activity. Stage-normative pubertal timing was related to the general measure and to seeking information, flirting, posting pictures/movies of oneself, visiting pornographic sites, and sex chatting, however, not to searching for a partner or having webcam sex. By contrast, the peer-normative measure of pubertal timing was not significantly associated to any of the activities. Early adolescent boys clearly engaged in different types of online activities, not just in viewing sexually explicit material. Although, romantic and sexual activities were more common offline than they were online. As for the associations of the two aspects of pubertal timing with the boys' engagement in different offline romantic and sexual activities, both aspects were found to be linked to offline activities of this kind, and early maturation was associated with more frequent involvement in flirting, dating, kissing, and talking about sex Furthermore, both measures of pubertal maturation where strongly linked to each other, however, they differ in what they actually measure. In general, boys with early stage-normative pubertal timing where found to perceive themselves as more mature than their peers.

In sum, early pubertal timing was found to be related to various aspects of being romantically and sexually active online, but only when using the stage-normative pubertal-timing measure. The peer-normative measure was not related to engaging in such activities

Study IV

Aims

The overall aim of the present study of Swedish adolescents was to explore possible longitudinal links between offline and online sexual activities in boys and girls.

Participants

The participants (N = 440) partook in a three-year longitudinal research project (described in **study II**). For this study, only the participants who were present at all three measurement points (440 of the 660) were included in the analysis.

Measures

Offline romantic and sexual activities. We asked participants whether they had ever engaged in the following activities offline: flirting, dating, kissing, talking about sex with peers, reading pornographic magazines and had sexual intercourse. Response ranged from 1 = never to 5 = yes, every day.

Online romantic and sexual activities. Participants were asked one general question on whether they had ever come into contact with any type of romantic or sexual content, or activity, on the Internet. Examples were given of different activities. The response options were *Yes* or *No.* The participants were asked more specific questions about their online sexual activities only if they endorsed the general item. The specific questions concerned whether they had engaged in the following activities online: looking for information about sex, flirting, searching for a girlfriend/boyfriend whom they could meet outside the Internet, posting pictures or movies of themselves in order for others to find them attractive, visiting websites with pornographic pictures or movies, engaging in or "observing" discussions about sex on chat sites, and using a web camera to take part in a sexual encounter (webcam sex). Response ranged from 1 = never to 5 =yes, every day. With regard to the specific items, adolescents who had answered *No* to the general item were coded in the same way as those who had responded never.

Main findings

The test yielded no significant results regarding the extent participation in online sexual activity between boys and girls as a general measurement. However when looking at different online sexual activities individually there were some differences; the largest difference was the activity of viewing online pornography as boys significantly more reported doing this. Activities more commonly used by girls were: 1) Searching for information about sex and sexuality 2) Flirting, especially at wave 3 and 3) posting pictures of themselves online in order to look attractive to others.

Results also showed that participation increased at every measurement point. At wave 1, 35.5% of the 440 participants reported engaging in one or more online sexual activities. At wave 2 this number had increased to about 48% and at wave 3 more than half (53.4%) of the participants reported engaging in one form of online sexual activity or another. This increase over time was more prominent for boys as results showed that at wave 1 about half of the male participants reported engaging in at least one online sexual activity. At wave two this had increased to about 65% and at wave 3 more than 73%. The increase was a bit smaller within the girl-group as the change from wave 1 to wave 3 was 23%, 32.3% and finally 36.2%.

The main goal of the study was to examine if being sexually active in one environment had any effect on the other i.e., we wanted to find out if being sexually active in either context was connected to being sexually active in the other. The first analysis revealed that for boys, the link was significant with a slope of .242 p<001. The next step was to analyze whether or not there was any link in the opposite direction i.e., does participation in offline sexual activity stimulate participation in online sexual activity. The analysis discovered that while offline sexual activity increased over time, so did sexual activity online. We found that, for boys, the effect had a slope estimate of .38 p<001 In turn, results for girls showed bit bigger effect with a slope of .41 p<001 indicating that the link between offline and online sexual activity is largest within the female group. Thus, as participation in sexual activity in an offline setting increases, so does it offline for boys as well as girls.

GENERAL DISCUSSION

The aim of this thesis was explore the Internet as an everyday environment for adolescents by examining important aspects of the developmental phase of adolescence, namely, 1) emotional distress and support. 2) Parental influence and transference of norms and views. 3) The role of physical and emotional changes with regards to participation in sexual activity and 4) participation in romantic and sexual activity during the adolescent years. All these aspects are important parts of the developmental phase of adolescence and it is reasonable to think that in the information age, these aspects are reflected in how adolescents use the Internet. In sum, the studies conclude that the aspects of adolescence which this thesis aimed to explore are all in different ways important to consider in relation to an online setting.

Risks and coping

As in the physical world, there are some variations in what interests and activities are common based on the gender of the individual. Examples of these variations were explored in **study I** where gender was one of the variables explaining experience of specific types of online content, namely that of an explicit sexual nature. Results showed that males were more likely to encounter pornographic content than females, a finding supported by the majority of previous studies conducted. However, it was also revealed that males came across violent and hateful content to a greater extent than their female counterparts. Interestingly enough, this was true regardless of whether the content was deliberately sought out or (as it was described by the subjects) stumbled on by accident indicating some type of pattern in how boys and girls use the Internet, making it more likely for boys to encounter explicit content. One possible explanation for this finding is that certain types of online activities preferred by male participants may stimulate a greater curiosity for and interest in explicit content. Such activities might, for example, be certain video games, forums or websites but it could also be an indication of that stereotypical gender roles normalizing boys interest in sex and violence commonly found in the offline sphere are mirrored in the online sphere. Hypothetically, if activities of a sexual and/or violent nature are more accepted as a normative part of an adolescent boys but the same activities are perceived as deviating for girls, it is reasonable to assume that the same type of roles are applied online, influencing interest and participation in these activities.

Further, with these differences in experiences between boys and girls in mind it would be plausible to assume that feelings associated with explicit online content will differ also based on the gender of the adolescent who experience it. Results from our study give some support for this argument as significantly more boys than girls were positively disposed toward pornographic content but also violent content that they had unintentionally found online. Analysis showed no other significant differences between boys and girls regarding positive feelings toward explicit online content. However, in spite of that, girls were more prone to negative and neutral feelings regarding all types of explicit content.

32

Another interesting finding was that for the most part, participants regardless of gender reported neutral feelings, or rather a lack of feelings after viewing explicit content, either intentionally or unintentionally, whether it was of pornographic nature or included violent and/or hateful content. It is possible that since encounters with explicit content occur so frequently in adolescents' everyday online environments, it has lost its "shock-value", were non-digital natives i.e. adults would expect a reaction, none is to be found. Whether or not this blasé attitude toward explicit content is alarming or not can be discussed, but it is also possible that it is a progressive adaptation of attitudes in an environment where graphic explicit content is a common occurrence, a way to abstract otherwise frightening or intimidating content and de-dramatizing it simply because of its environment of origin, namely the Internet.

This was also reflected in the way the respondents choose to deal with content of an explicit nature. Even though some of the boys and girls reported using coping strategies if the content spawned feelings of distress or discomfort. The most frequent way was simply to either block or avoid the source of discomfort, rather than talk to someone about it. This could be regarded as a rather instrumental approach in comparison to other strategies. However, it could also be seen as a natural adaptation to an environment where contact with explicit content that upsets is perceived as rather a question of "when" than "if" and as such, an instrumental strategy to block and avoid give the individual a measure of control in an otherwise chaotic environment. Instead of relying on parents or peers for support the adolescent boy or girl can make use of their own knowledge and experiences to take control of a situation, negating the need to discuss it. Analyses revealed that a predictor for the use of this strategy was communication with their father. One possibility is that fathers are more inclined to convey information about the technical aspects of online content and strategies to avoid discussing feelings associated with explicit content. However, even though boys and girls reported using this approach equally, communication with their father was not a predictor for girls. This could be due to a lack of communication from fathers who do not expect their daughters to be exposed to explicit content to the same extent as they would their sons.

The absence of turning to parents as a coping strategy was further evident as a general pattern for how adolescents use coping strategies revolves around either solving the problem for themselves or turning to their peers for support. It is possible that the reason for this has to do with their perception of the technical and/or social competence of their parents in comparison with themselves or their peers, i.e. they might perceive adults as lacking the understanding needed to be an effective sounding board and as such deal with the situation on their own or turn to their peers if needed. Girls were more inclined to turn to their peers or warn others about the source of the upsetting content than boys. Interestingly, the use of these strategies was predicted by a higher level of communication with their mothers rather than their fathers. It is possible that the reason behind this link could also be attributed to the adolescent girls' perception of their parents' competence regarding the Internet i.e. even though their parents talk to them about the Internet and online safety they might not perceive this as beneficial because their knowledge of online events often is greater than that of their parents. As such, they might despite otherwise meaningful conversations with their parents, be more inclined to

speak to their peers when events occur that they would be more familiar with than an adult would. Another possibility is that the communication with their mother is perceived as being of a foreboding nature and speaking to friends does not come with the risk of penalization such as restricted Internet access, diminished privacy and an increase of parental control to name a few and as such, turning to peers is perceived as a more logical choice. As for boys, the one measure that was found to be a predictor for warning others as a coping strategy was their level of risk-assessment. Boys who had a higher risk-assessment were more likely to use this strategy. It is possible that the reason behind this is their own perception of themselves as being aware of online risks and as such; when they themselves are exposed to explicit content, which upset them, they fortify this notion by helping others.

Finally, as for talking to parents, both boys and girls reported talking to parents as a coping strategy to about the same extent. However, only girls' use of this strategy could be predicted in the analysis. Somewhat contradictory to predictions of the use of other strategies the level of communication with their mother was once again the significant measure. It could be regarded as that a high level of communication regarding online activities with their mother and their choice of turning to their parents for support might be regarded as self-explanatory; however, it is interesting that, for the same strategy, communication with the father was non-significant. This gives further support to the reasoning that fathers are more likely to talk about the technical aspects of online use and not the feelings associated with these aspects. If so, this might not be perceived by the girls in the study as a motivator for turning to their parents for support in the same way as talking to their mother would.

Family

Even though the Internet in many ways can be regarded as an environment whose native inhabitants are boys and girls who never experienced the breakthrough of ICT but rather grew up with it as an inherent part of their educational, recreational and social life, it is important to recognize the interaction between this context and the traditional physical context. It could be argued that in many ways there is a discrepancy in competence between those who purely adopted ICT and those who were born into it, maybe not so much on a technological level but more so on a social one. However, this does not necessarily mean that adults do not have any influence on how adolescents live their life online.

The purpose of **study II** was to examine if attitudes as they are reflected in the home had any connection to what experiences adolescents have online. As previous studies have shown a link between parental attitudes on sexuality and adolescents' participation in sexual activity offline one might argue that this could also be true in an online context. It also stands to reason that parents' attitudes regarding sexuality would take after the same gendered pattern often found offline, regarding it a normative part of the adolescent males' identity but a perilous one for young females. The results gave some support to this line of reasoning as the fathers in the study was shown to have more positive attitudes toward online sexual activity compared to the mothers. Furthermore, fathers as well as mothers reported more allowing attitudes toward participation in online sexual activity pertaining to boys compared to girls.

Given that results in **study II** showed that boys in general partake in more online sexual activities than girls, it could be argued that one of the contributing factors for this is that parents' permissive attitudes to some extent normalizes adolescent boys participation in online sexual activity and in turn resulting in boys partaking in online sexual activity to a greater extent than girls as it is considered normative and 'to be expected'. It could be suggested that a common social disposition toward male and female sexuality, especially in the adolescent years, is that partaking in sexual activities is a more accepted part of a young man's identity whereas young women are expected to refrain from such activities. If so, these norms might be expected to be mirrored in an online context as results in **study II** indicate.

Although, even though research focusing on adolescents' sexual activity in a traditional context has suggested a link between mothers attitudes regarding sexual activities and daughters sexual behavior (Kotchick, Dorsey, Miller, & Forehand, 1999; Regnerus, 2005; Tobey, Hillman, Anagurthi, & Somers, 2011), results in this study revealed a similar link but between fathers and daughters, and only with the younger girls in the sample. Results suggest that girls in the younger cohort appeared to internalize attitudes reflected in the home and engage in more online sexual activity given that their father had permissive attitudes regarding these activities. As for boys, fathers' attitudes regarding sexual activity in a traditional context was revealed to be linked to older boys' participation in online sexual activity, suggesting that to some extent boys internalize attitudes conveyed by their fathers. However, as mothers constitute the majority of the participants in the parent sample it could might be suggested that these participants are more invested in their children than the average father and as such, more likely to communicate and discuss with their children about Internet use and sexuality, the nature of this communication or otherwise conveying of attitudes might depend on the age and gender of the child as results indicate. If this is the case it is possible that due to the fathers dedication to their children they are more eager to help their daughters to "claim their space" online, conveying an open and explorative disposition toward Internet, not only as a medium but also as a social space in which sexual activity is a part.

Pubertal timing

In **study III** we examined how two aspects of pubertal timing were linked to a variety of offline and online romantic and sexual activities in a sample of early adolescent boys. In line with our first hypothesis, and prior studies using the same measure (Peter & Valkenburg, 2006; Skoog et al., 2009), we found that this measure of stage-normative pubertal timing was linked to all our measures of offline romantic and sexual activities, and to most of the measures of online activities. It has been presumed that the link between early puberty and early sexual activities can be explained biologically (Mendle & Ferrero, 2012). As a consequence, it stands to reason that early adolescent boys with more advanced pubertal maturation, on physically oriented measures, to be expected to be more curious about sexual issues and to engage in more sex-related behaviors, especially in the case of online activities, which are characterized by anonymity, affordability, and accessibility (Cooper, 1998), by being difficult for parents to monitor, and by being readily available at more or less any time. Thus, to the extent that the PDS measures hormonal changes (i.e., the development of

secondary sexual characteristics), it is clear that it should be linked to both offline and online sexual activities.

The second hypothesis in **study III** was that the peer-normative measure would be less strongly linked to online romantic and sexual activities. Although we did find that this measure of perceived maturity was linked to the boys' offline activities, in accordance with what has been established in previous research (Crocket, Bingham, Chopak, & Vicary, 1996), we did not find any link between peer-normative pubertal timing and any of the eight online activities. There may be several reasons why the stage-normative, but not the peer-normative, aspect of pubertal timing, is related to boys' online romantic and sexual activities. The link between the two measures of pubertal timing was found to be strong but far from perfect, although the magnitude of the association is in line with that found in previous research (Wichstrom, 2001).

As such, the stage-normative and the peer-normative measures differ in what they actually do measure. This is the most likely reason why the two are differentially linked to online sexual activities among adolescent boys. However, perceived maturation in comparison with peers may have different determinants, not just those that are related to pubertal maturation and hormonal change. Accordingly, it is possible that the boys were thinking of other things, like adult-like behaviors, as well as, or instead of, physical maturity, when asked about their perceived maturation. In fact, some behaviors, which adolescents regard as signs of maturity, are negatively related to sexual activities in early adolescence (Mueller et al., 2010). It is also noteworthy that, even for other types of behaviors among adolescents, such as substance use, previous research has shown that physically oriented measures of pubertal timing are of greater importance than perceived pubertal timing (e.g., Wichstrom, 2001).

Romantic and Sexual activity offline and online

In **study IV** we set out to examine a number of questions relevant to the subject of adolescent sexuality in traditional and modern context focusing on the level of participation, gender specific differences and any eventual link between the two contexts. Results of the study showed that; 1) adolescents in Sweden are engaged in online sexual activities and the level of participation increases with age. 2) There also seems to be an overall difference with regard to gender, with male participants more inclined to utilize pornography and female participants more prone to information seeking and self-presentation. 3) There seems to be a longitudinal link between being sexually active in an offline and in an online context irrespective of gender and for boys being sexually active online seemed to influence their participation in an offline setting.

Findings from this study confirm the results from several previous studies concerning adolescent online sexual activity. For example, male participants much more commonly use online pornography than their female counterparts. This is in line with most, if not all, previous studies on the subject (Häggström-Nordin et al., 2005; Peter & Valkenburg, 2006; Wolak, Mitchell, & Finkelhor, 2007). In an ever-changing environment such as the internet it could be regarded as important to verify that these results still hold true, if only a few years

later. There are several possible reasons for this finding. It could, for instance, be reasoned that most pornography is made primarily for a male audience, with the male subject portrayed as the dominant character in sexual interactions possibly making it more appealing for men than women. Another reason could be that the use of pornography, online or otherwise, is generally more accepted as an activity for men, making it less shameful and thus regarded as a more normal way of dealing with ones sexuality. In addition, adolescent women might regard the interest in pornography as a traditionally non-feminine activity and attribute it as something shameful and thus as a consequence lessening their interest in pornography and perhaps their willingness to answer questions concerning pornography truthfully. Studies have also found that the physiological effects of viewing pornography differs between genders as women have shown to have more negative emotional reactions when compared with men and experience different physiological reactions (Allen et al., 2007) Furthermore, previous studies have found links between the use of online pornography as a result of lower perceived quality of life and risk-behavior. It is possible that had we included those variables it could have yielded some additional evidence for why men are the predominant user-group with regard to use of pornography.

Our results also showed that women to a larger extent partook in other forms of online sexual activities such as information gathering, flirting online and posting pictures of themselves to appear attractive to others. As many studies have solely focused on either pornography use or interactive sexual activity online previous results regarding gender differences have been apparent (Luder et al, 2011). The current finings however show that when regarding online sexual activity as a wider concept, girls as active participants as boys but with focus on other activities. This finding is supported by research by Abbot-Chapman, Denholm, and Wyld (2007) and Bohlin and Erlandsson (2007) that has shown that young women tend to involve themselves in the same types of risky activities as men, including sexual activities, but that their perceptions of the activity differ from those of boys. Although young women nowadays have more opportunities to test their limits the dissonance between doing and thinking can explain why girls report lower degree of well-being. For example, younger girls are negatively affected by sexual activities online (e.g. grooming, sexual abuse, see van den Heuvel, van den Eijnden, van Rooij, & van de Mheen, 2011).

The findings in study IV raise some questions, such as, are adolescent girls more concerned about sexual health than boys? Or is this an indicator of a difference in the choice of information regarding sex and sexuality? It been shown that parents talk more to their daughters than their sons about sexual matters (Regnerus, 2005) and that sexual education typically focuses more on girls than boys (see Davidson, 1996). Perhaps the current finding that girls seek more sexual health information online is a positive consequence of this socialization process? Moreover, it is possible, as stated by several researchers, that boys use pornography not only as a mean of sexual gratification but also as a source for receiving sexual information (Cooper, Putnam, Planchon, & Boies, 1999; Cooper, Scherer, Boies, & Gordon, 1999), while girls tend to use sexual health sites and forums as a source of sexual information. Although pornography- and information-oriented websites might be considered

radically different sources they might share a similar purpose as a source of sexual information.

A somewhat puzzling finding in **study IV** was that girls were more prone to online flirting than were boys. One explanation for this can be that online flirting can be regarded as a more socially sophisticated way of interaction than for example viewing pornography, which is most commonly a non-interactive activity, putting higher demands on social skills and maturity, traits that young women often excel at in comparison to their male counterparts. This might be explained by that norms rooted in traditional values are strong for both genders, but for the young women especially, such values seemed to create inconsistencies and contradictions and is something that modern society advocates (Abbot-Chapman, Denholm & Wyld, 2007; Bohlin, 2011; Pleck & O'Donnell, (2001; Giddens, 2009) Risk-taking in women is seen as something desirable, however, to a lesser degree than in men. It is not socially acceptable for women to be too drunk or to be too sexually active, which can lead their gaining a bad reputation among friends, especially among the male friends (Bohlin, 2011; Maina Ahlberg, Jylkäs & Kranz, 2001).

Another significant difference in online sexual activity was girls posting of pictures and videos of oneself online in order to look attractive to others. This is not all that surprising as generally women are portrayed as a sexual object in movies, TV-series, commercials, magazines and other forms of media. As shown by previous research, there is a tendency for women to be insecure about their appearance during adolescence, and thus in order to receive (hopefully positive) validation, posting pictures of themselves online (Gibbs, Ellison & Heino, 2006; Mazur & Kozarian, 2009; Zhao et al., 2008; Valentine & Holloway, 2002; Tynes, 2007. Skeggs (i.e. 1997) and Bohlin (2011) suggest that women reproduce an appearance of being feminine, to conform to self-imposed ideals and reach a level of respectability in society. Both genders believe, and this is confirmed socially, that women are supposed to live to the ideals of being, slim, fit and beautiful, a belief that may restrict the freedom of women.

For every wave in this study the number of participants who reported partaking in one or more online sexual activities increased. This is not surprising as with added age interest in sex and sexual activities increase. However, it is interesting that an increase in a traditional context is also linked to an increase in sexual activity online. As the number of participants who reported experiences of "offline" sexual activity increased, the number of participants with experience of online sexual activity also increased. The results from the multilevel regression-model indicated a fixed-effect growth-slope for both male and female participants. There are other studies that confirm such relationships;, e.g. adolescents who are sexually active in traditional settings (i.e., offline) are more likely to engage in online sexual activities according to Brown & L'Engle, 2009; Hald, Kuyper, Adam, & de Wit, 2013; Luder, Pittet, Berchtold, Akré, Michaud, & Surís, 2011). In his study a possible explanation for this result could be that boys and girls who establish romantic and/or sexual relationships in a traditional context use the Internet to in various ways extend their relationships with their significant other. Another explanation could be that, if they have a partner, this partner has an interest in online sexual activity and as a consequence they share this interest by partaking in more

online sexual activities than before. Interpreting this result is, however, problematic as there are numerous factors that are not known to us. For example the link between offline and online sexual activity could be a result of changes in the online context during the three measure points i.e., new social networks could have been included focusing on sexual activities. It could also be due to an increase in online access i.e., personal computers in their own room thus enabling privacy and "secure" access to online sexual activity. Another possibility could be that with increased age the rules and norms in both the family- and peer group are more accommodating toward sex as a positive part of the adolescents´ life and as a consequence it increases their interest in, and/or honesty about partaking in sexual activity online. The only thing we can say for sure is that there is a link between the two contexts and that further study on this subject is needed.

Limitations and future research

Any study on adolescent sexuality is bound to have limitations due to the sensitive nature of the subject. One of the main concerns in the FUN project, the basis for three of the papers in this thesis, has to do with the use of a "gateway question" in the questionnaire. An important requirement of the Swedish ethical review board was that participants who did not have any experience of online sexual activity should not to be asked about specific activities. Because of this we formulated a question that asked, "Have you ever done any of the following?" followed by a list of online sexual activities. For any item answered with a 'no', participants were not asked any additional specific questions regarding participation or experiences. This could have had an impact on how many participants answered questions about their experiences truthfully. Without any fuller explanation of the activities, participants might not have given them enough thought and may have said no when they had in fact participated. Omitting questions about specific activities also made the time for completing the questionnaire significantly shorter.

Furthermore, although the computers used for the questionnaire were placed so as to minimize the risk of other participants being able to see how other participants answered, answering questions about their sexuality in proximity to members of their peer group might have made some participants reluctant to answer the questions truthfully. The. With this in mind it is possible that the number of participants with experiences of both offline and online sexual activity is significantly higher. The link between offline and online sexual activity might also be difficult to fully understand using a strictly quantitative approach. A qualitative approach with questions about participation and subjective interpretations may have added to the understanding of this link between online and offline sexual activity. Further studies are needed to fully understand the longitudinal effects between offline and online sexual activities.

Another limitation concerns the answers provided by the parents. The sensitive nature of the subject might have made it difficult for parents to answer, either because of their own limited experience of the Internet as a sexual arena or their general discomfort in answering questions, even hypothetical ones, about their attitudes regarding children's sexual activity.

In **study I,** data were collected in 2007. With the rapid evolution of ICT, both the amount and nature of explicit content and subsequent feelings might have changed a great deal over the intervening years.

With social media so widely used by every age group, an interesting question arises regarding the impact of inter-family social networking on adolescent's development to adulthood. Will increased daily online contact and updates from parents assist or impede the process of identity development? Will it ease the transition to adulthood by adding support from family or will it hinder the emerging adult in their project to become independent?

There are several interesting questions yet to be answered regarding the parenting style of the 'net generation', that cohort of people born between 1982 and 1991 who have been exposed since birth to ICT (Sandars & Morrison, 2007). In 2014 the people born in this generation are

approaching the age where they could have teenage children themselves. We know very little about this generation of parents. One interesting question would be how their experience with technology affects their way of parenting. It would stand to reason that since they themselves grew up in a digital world, they will have a better understanding of technology, and as such be better at setting media and technology limitations for their children than the previous generation. A previous study showed that a common reason for parents not to set boundaries on their children's Internet activity is that they are confused about what their children actually do online (Rideout et al., 2010). Technologically savvy parents might be much better at protecting their children from harm online simply because they are more familiar with it. They might also be more likely than the previous generation to use online resources for parenting advice rather than turning to their own parents. The effect of technology on parenting is a field worthy of research.

Conclusions

Parents, teachers, researchers, and clinicians have, and probably always will have, an ever-changing relationship with technology. Technology is always evolving, always changing. Early adopters embrace the change early, young people embrace it easily, but by the time most adults, teachers, researchers, and clinicians learn about it, it has most likely already evolved into something new. Even during the short time this thesis was written, several major changes could be seen in the digital landscape. However, that just might be the way of the world. It is likely that the adult world will always be one step behind the younger generation technologically and perhaps that is just fine. Parents do not need to be totally integrated in online culture and technology to help and guide their growing children. Listening, asking questions, and monitoring behaviors that seem unsafe or inappropriate are just a few ways that parents can support their children in the digital world. Recognizing the Internet as a natural everyday environment, and not a separate abstract entity, might just be the first step for parents in the 21st century. Concerned adults would greatly benefit from understanding the different ways adolescents use technology, and how this might assist or impede their developmental. The massive changes brought about by technology the last 10 to 15 years alone have left a gap between the adolescent user and the adult in their world that needs to be addressed.

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APPENDIX

I.   Hallberg, J., & Hwang, C. P. (2014). Swedish adolescents' exposure to pornographic, violent, and hateful content online. Pending revision.

II.   Sorbring, E., Hallberg, J., Bohlin, M., Skoog, T. (2014). Parental Sexual Attitudes and Adolescents' Online Sexual Activities. Pending revision.

III.   Skoog, T., Sorbring E., Hallberg, J. & Bohlin M. (2013). Boys' Pubertal Timing Measured on the Pubertal Development Scale is Linked to Online Sexual Activities. *International Journal of Sexual Health*, 25, 281-290. DOI:10.1080/19317611.2013.815299

IV.   Hallberg, J., Skoog, T., Sorbring, E., Bohlin, M. & Hwang, C. P. (2014). Adolescents' Sexual Activity Offline and Online: A Longitudinal Study. Manuscript submitted for publication.