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Mobile communication and the protection of children

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5 | Mobile communication: its impact on children and young people

This chapter is devoted to the effect that the concerns as described in Chapter 1 and elaborated in Chapter 4 have on children and young people. In this chapter, we aim to answer RQ1. With this in mind, we pose two interesting sub-questions: (RQ1a) “Is the impact of the concerns on children and young people, greater in the on-line world than in the real world?” and (RQ1b) “Will the use of mobile phone increase the concerns?” In combination, these two questions will lead us to the answer of RQ1: “*What (sociological, cognitive, mental and psychological) impact does the rise in the use of mobile technology have on children and young people?*” We repeat here briefly the remark made in Chapter 1 that we mainly focus on the sociological impact. However, for a good understanding of this notion, we must also pay attention to the cognitive, mental, and psychological impact.

The purpose of this chapter, thus, will be to consider the two interesting sub-questions above more closely. We do this by investigating the impact (Section 5.1) that the use of mobile technology has on children and young people in the three key areas of concern, namely (a) content, (b) contact, and (c) commercial. We will address the areas of concern in the following manner. In Section 5.2, we deal with (1) content in terms of (1a) exposure to pornography, and in Section 5.3 with (1b) violence in mobile gaming; in Section 5.4 with (2) contact in terms of cyber-bullying and in Section 5.5 with (3) commercialism in terms of (3a) mobile spam and (3b) aggressive marketing strategy in Section 5.6. All in all, we identify three key areas, containing five elements that are important for answering RQ1. Chapter conclusions are made in Section 5.7. Finally, Section 5.8 contains an answer to RQ1.

5.1 IMPACT OF THE USE OF MOBILE TECHNOLOGY

The impact comes from the three areas of concern raised in Chapter 4 viz. content, contact, and commercial. We briefly inform the reader of our focus. First, we have observed that the mobile content market, i.e., infotainment, games, and applications is a creatively vibrant sector and it has yet to reach its saturation point. What we see is (1a) a rapid and continuing development of new applications and (1b) a continuous content change that meets and challenges the insatiable demands of the consuming public. Second, we have seen and discussed that (1) mobile phones are no longer considered as optional

items fit for communication but rather a necessity for all-day contact and (2) mobile phones ownership is no longer restricted to people over 18. Contact is meant for all ages. Moreover, we have observed that the age and cost of ownership for mobile phones is progressively getting younger and cheaper. Third, it is the younger generation who is more adept at finding their way around the numerous commercial applications on the mobiles. The corresponding effect thus is the opening of new avenues for social interaction in which aggression and anti-social behaviour can occur and the possibility of victimisation of youngsters increased.

5.1.1 *The lack of research and publications*

Let us start by mentioning here two significant issues revealed during our investigations: lack of research and lack of publications. First, the lack of research available on the extent of the stated problem. For example, the European Commission (EC) has been engaged in a similar study and had to rely on research available with respect to Internet usage by children.¹ Second, there has been no recent published study results (at least that I am aware of) of the children and young people's exposure to *inter-alia* (a) mobile pornographic or sexually explicit content, (b) inappropriate activities such as unwanted solicitation, grooming, and cyber-bullying, and (c) violent content and its impact on this vulnerable sector.² However, we firmly believe that the mobile phone's characteristics of mobility, interactivity and portability can lead to an exacerbation of concerns and pose a greater threat to children and young people as a result of the lack of continuous open supervision and control. Given the limitations, research findings and experience are thus drawn from the *impact* that the materials and activities have on children and young people from being exposed to on-line communication via a fixed location such as the personal computer.³ The main question here is: how do we measure the impact?

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- 1 Protecting Minors from Exposure to Harmful Content on the Mobile Phones, European Internet Co-Regulation Network, July 2005, available at <http://www.foruminternet.org/specialistes/international/IMG/pdf/reco-mobile-20050728.pdf>. See also ECPAT's Child Pornography and Sexual Exploitation On-line, (2008) World Congress III against Sexual Exploitation of Children and Adolescents, Rio De Janeiro, Brazil, November, available at http://www.ecpat.net/worldcongressIII/PDF/Press_Release/ECPAT_WCIII_ENG.pdf
 - 2 Vincent, J., Examining Mobile Phone and ICT Use amongst Children aged 11-to-16, (2005), Digital World Research Centre, University of Surrey, available at <http://www.surrey.ac.uk/dwrc/People/Vincent.htm>. Vincent's recent study suggests there is little evidence that children make significant use of their mobile phones to access the Internet or to download commercial content. According to Vincent, this could be due to the cost charged by the network providers for the services.
 - 3 Alhert, C., Nash, V., and Marsden, C., Implications of the Mobile Internet for the Protection of Minors, Preliminary Report of Working Group on Mobile Phones and Child Protection of EICN (April 2005), available at <http://www.network.foruminternet.org>.

5.1.2 Three definitions

In considering the impact of the hazards on children and young people, we have chosen to use the three definitions of harm as already suggested by McQuail and Windahl (1993) when considering the impact that the materials have on children and young people. In their opinion, harm is defined by (1) changed beliefs, (2) changed behaviour, and (3) emotional responses. The corresponding definitions are (1) changed beliefs are seen in attitudes affecting the individual (e.g., fear of crime) and affecting the society, (2) changed behaviour is focused on the propensity to harm others (e.g., aggressive behaviour damaging both the perpetrator and the victim) or self harm (e.g., anorexia, obesity, or suicide), and (3) emotional responses affecting both, the person's self and others; the responses include fear, depression, and hate.⁴

5.2 EXPOSURE TO PORNOGRAPHY

For the key area of content, we deal with two topics (seen as elements for RQ1), viz. exposure to pornography and violence in mobile gaming. The first topic is the subject of this subsection. While examining this topic, we attempt to find an answer to RQ1a which reads "Is the impact of the concerns on children and young people, greater in the on-line world than in the real world?" The consequences of pornography are discussed (Subsection 5.2.1). A comparison is made with old observations in Subsection 5.2.2 and in Subsection 5.2.3, we draw our conclusions for the on-line world.

We have in Chapter 4, raised and discussed two aspects of the incidence of exposure to pornography (see Subsection 4.5.5). We have further concluded that available research studies have revealed a proliferation and an increased consumption of adult materials, and an upward trend in the incidences of unwanted exposure to pornography and unwanted sexual solicitation (contact). We remark that while the concerns raised had existed prior to the advent of the Internet and new communication technology, studies by Wolak, Mitchell and Finkelhor (2007)⁵, Mitchell (2007)⁶, White, Gregory and Eith (2008)⁷ and

4 McQuail, D. and Windahl, (1993) *Communication Models*, 2nd Edition, Longman, New York, N.Y. referred to in Hargrave A.M. and Livingstone S., *Harm and Offence in Media Content: A Review of the Evidence*, (2006), Intellect Books, Bristol, U.K.; available at <http://www.lse.ac.uk/collections/media@lse/pdf/Harm%20and%20Offence,%20summary.pdf>

5 Wolak, J., Mitchell, K., and Finkelhor, D., (2007), Unwanted and Wanted Exposure to On-line Pornography in a National Sample of Youth Internet Users, *Pediatric*, Vol. 119, No. 2, p. 247-257.

6 Mitchell, K.J., (2007) Trends in Youth Reports of Sexual Solicitation, harassment and unwanted exposure to Pornography on the Internet, *Journal of Adolescent Health*, p. 116-126.

Byron (2008)⁸ have revealed that the Internet (and new communication technology) may have exacerbated the concerns. For example, the Internet is used as a way of furthering contact crimes against children (sourcing and grooming for offline abuse, see Sub-section 4.6.1). It is also a means to access and share abusive images. However, the harms posed by new technologies are not restricted to the exploitative adult use of child pornography or the solicitation of children. The evidence has revealed that exposure to images depicting children engaging in sexually explicit activity can seriously damage the mental, physical, and psychological well being of the child.⁹ Once these images are posted in a public domain such as the Internet, they can be easily accessed, re-distributed, and consumed by paedophiles globally.¹⁰ Consequently, we do not see child exploitation as a one-off incident in the production of the material but rather as a continuing abuse of the child depicted.¹¹ Thus, we remark that the child does suffer (in more ways than one), whether the child is exposed to sexually explicit materials or is abused by a paedophile. We re-iterate our position that while the concerns are not new and are not the creation of the Internet and new communication technologies, the evidence does indicate that the Internet and new communication technologies exacerbated the harms and made it much harder to protect children and young people.

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- 7 White, L., Gregory, C., and Eith, C., (2008) The Impact of Accidental Exposure to Cyberpornography on Sexual Offending Among Youth: A Case Study, Paper presented at the annual general meeting of the American Society of Criminology, Royal York. Toronto, November, 2008; available at http://www.allacademic.com/one/www/research/index.php?cmd=www_search&offset=0&limit=5&multi_search_search_mode=publication&multi_search_publication_fulltext_mod=fulltext&textfield_submit=true&search_module=multi_search&search=Search&search_field=title_idx&fulltext_search=%3Cb%3EThe+Impact+of+Accidental+Exposure+to+Cyberpornography+on+Sexual+Offending+Among+Youth%3A+A+Case+Study.%3C%2Fb%3E&PHPSESSID=fffaec3085ffe269730b1d91108f6fa
 - 8 Byron, T., (2008) Safer Children in a Digital World, A Report on the Byron Review, March 2008, available at <http://www.dcsf.gov.uk/byronreview/pdfs/Final%20Report%20Bookmarked.pdf>
 - 9 Taylor, M., & Quayle, E., (2005) *Abusive images of children*, in Cooper, S., Giardino, A., Vieth, V., & Kellogg, N. (Eds.) *Medical and Legal Aspects of Child Sexual Exploitation*, GW Medical Publishing, Saint Louis p.268-269 referred to in *Violence Against Children in Cyberspace*, ECPAT International, available at http://www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf
 - 10 Carr, J., Child abuse, Child pornography and the Internet at www.nch.org.uk, see also T, Palmer., & Stacey, L., (2004) Just one click: Sexual abuse of children and young people through the Internet and mobile phone technology, February 2004, Barnado's, U.K. referred to in *Violence Against Children in Cyberspace*, ECPAT INTERNATIONAL, available at http://www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf
 - 11 Supra Carr.

As we note the lack of investigation into the mental and psychological development of victims of child pornography,¹² we suggest that it might be possible to have an insight into some of its effects by evaluating the mental and psychological effects of victims of sexual abuse.¹³ Thus, a child forced to make abuse imagery may suffer ill-effects that are common to sexual abuse and exploitation.¹⁴ Amongst the effects and symptoms documented that a child victim of sexual abuse may experience are depression, low self-esteem, restlessness, hunger, exhaustion, concentration difficulties, aggressive behaviours, and repressed anger.¹⁵ The child also feels guilty, experiences fear for the safety of themselves and of others.¹⁶ Further, it is not uncommon for victims of sexual abuse to feel confused and to lose trust in people.¹⁷ This might lead the child to inflict self-harm, through the misuse of substances.¹⁸ Evidence has further indicated that in some cases, a child victim might suffer post-traumatic stress disorder.¹⁹ With these wide ranging physical, emotional, and psychological effects, we believe that the impact on a child who is a victim of sexual abuse (and in this sense, we regard a victim of child pornography as a victim of sexual abuse) is not significantly dissimilar from on-line experiences since these incidents involve nothing less than physical, mental, and psychological abuse on a young and vulnerable individual. In fact, we believe that the effect is more profound and far-reaching. We say this since the technologies have contributed to greater harm caused in terms of the number of youngsters exposed and the severity of harm caused. At this point, we would like to state that the impact of concerns in the on-line world is at least as great as in the real world.

5.2.1 *The consequences*

As with victims of child pornography, little is known about the consequences for children of seeing sexually explicit content. Research with adults has indicated an effect on behaviour and attitudes. However, because of ethical issues with regards to conducting similar research on youngsters, the impact of such content on children and young people is not a well researched area.

12 Taylor, M., and Quayle, E., (2003) *Child Pornography – An Internet Crime*, (2003), Brunner-Routledge, Hove and New York.

13 Supra. See also Carr n.10 and Childnet's policy documents at <http://www.childnet-int.org/publications/policy.aspx>

14 See Violence Against Children in Cyberspace, ECPAT International, available at http://www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf

15 Supra.

16 Supra.

17 Supra.

18 Supra.

19 Supra.

Thus, its impact will be harder to gauge.²⁰ Limited data shows that depictions of sexual behaviour may be emotionally disturbing to children who encounter them. They may be shocked, troubled or disturbed by premature or inadvertent encounters with sexually explicit material. Research that has been done suggests that children will typically report that they are distressed, disgusted, offended or bothered by sexually explicit material. The responses by children includes notions such as feeling “sick”, “yuck”, “disgusted”, “repulsed”, and “upset”.

However, in the last five years there has been a growing body of evidence on the effects of sexually explicit materials on attitudes, values, and beliefs. For example, Peter and Valkenburg (2006) have found amongst male adolescents, the correlation between exposure to sexually explicit on-line content and attitudes towards sex specifically in relation to respect towards women.²¹ There have also been consistent studies which showed the consumption and exposure to pornography increase male aggression towards women.²² Indeed, there are many instances where children’s disturbed, aggressive or sexualised behaviour can be traced back to the influence of exposure to pornography or extreme violence on the Internet viewed in the home with or without parental supervision.²³

A further study by Peter and Valkenberg (2008) has also revealed a link between the use of sexually explicit on-line material and the development of adolescents’ sexual self. For example, the researchers found that the exposure to sexually explicit on-line materials is associated with greater sexual uncertainty amongst adolescents in that the material “presents sexual beliefs and values that differ from the values and beliefs that adolescents are taught in families and schools”.²⁴ They suggest that the exposure of sexually explicit on-line materials might lead to changes in adolescent sexuality with a shifting

20 Byron Review: *Children and New Technology*, (2008); available at <http://www.dcsf.gov.uk/byonreview/pdfs/Final%20Report%20Bookmarked.pdf>

21 Peter, J and Valkenberg, P., (2006) Adolescents’ exposure to sexually explicit material on the Internet, 2006, *Communication Research*, Vol. 33, No. 2, p. 178-204. See also Peter, J and Valkenberg, P., (2007) Adolescents’ exposure to a sexualized media environment and notions of women as sex objects, *Sex Roles*, 56, p. 381-395.

22 Millwood Hargrave, A., and Livingstone, S., (2006) *Harm and Offence in Media Content: A Review of the Evidence*, Intellect, Bristol, U.K., See also Flood, M and Hamilton, C., *Regulating Youth Access to Pornography*, 2003 Discussion paper, The Australian Institute Ltd; available at http://www.tai.org.au/index.php?option=com_remository&Itemid=36&func=select&id=2&orderby=2&page=5

23 Supra Taylor and Qualye, n. 12 and Wolak, J., Finkelhor, D., and Mitchell, K.J., (2004) Internet initiated sex crimes against minors: Implications for Prevention based on findings from a national study, *Journal of Adolescent Health*, Vol. 35, No. 5, p. 424.

24 Peter, J and Valkenberg, P., (2008) Adolescents’ exposure to sexually explicit Internet material, sexual uncertainty, and attitudes towards uncommitted sexual exploration: Is there a link? *Communication Research*, 35, 569-601.

away from “sexual permissiveness with affection to attitudes towards uncommitted sexual exploration”.²⁵

To-date, studies have revealed that the accidental exposure to pornography (1) can lead children to consider sexual abuse as normal behaviour, and (2) can damage the child’s psycho-sexual development.²⁶ For example, Mitchell, Finkelhor, and Wolak in their research studies on the exposure of sexually explicit materials on children and young people have found that 25% of children accidentally exposed were extremely upset. 20% had some apparent stress symptoms that they connected to the incident.²⁷ The stress symptoms included (1) feeling jumpy, (2) irritable, (3) having a hard time falling asleep, (4) losing interest in things you usually care about, (5) staying away from the Internet, and (6) thinking about what happened so much that you could not stop.²⁸ 21% also said that they were extremely embarrassed. The researchers reported further that only 2% of youth with unwanted exposure returned to the site of the exposure. Many of the youths failed to report the incident to persons in authority or mention the incident to friends and peer members, suggesting a feeling of guilt.²⁹ In fact, Mitchell, Finkelhor, and Wolak (2003) in one of their studies opined the following.

“Such unwanted exposure, may affect attitudes about sex, attitudes about the Internet, and young people’s sense of safety and community. It may also have effects by creating family conflicts and generational tensions, if, for example, some of the distress may be due to guilt feelings and a belief among children that the revelation of these incidents would prompt parents to curtail their Internet privileges”.³⁰

5.2.2 *A comparison with old observations*

In this respect, we note the following observations by researcher Brooks (1995), which- although we accept that it is dated – does express the significant effect pornography can have on children.

“A child’s sexual development occurs gradually through childhood. Exposure to pornography shapes children’s sexual perspective by providing them information on sexual activity. However the type of information provided by pornography does not provide them with a normal sexual perspective. (...), pornography is instructional, (...) that information is not an accurate portrayal of human sexuality. (...). Unlike learning provided in an educational setting, exposure to pornography is

25 Supra.

26 Supra Taylor and Qualye, n. 12 and Supra Wolak, Finkelhor, and Mitchell.

27 Mitchell, K., Finkelhor, D., and Wolak, J., (2003) The exposure of youth to unwanted sexual material on the Internet, March, *Youth & Society*, Vol. 34, No. 3.

28 Supra.

29 Supra.

30 Supra.

counterproductive to the goal of healthy and appropriate sexual development in children".³¹

As an aside, we mention a study by researchers Shim, Lee, and Bryant (2007), which suggests a number of factors that play a significant role on an individual's response to Internet pornography.³² The factors include an individual's gender, a person's attitude towards sex³³ and the level of one's anti-social disposition.³⁴ Although the results of the survey suggests that personality characteristics such as sexual and anti-social dispositions are related and might influence an individual response to unsolicited Internet pornography, proved to be informative, we argue that the sample studied was not a sample of children and young people; hence, we posit that the relevance of the study is restricted. The study might be useful, however, in providing a clue to predicting a better way in investigating the impact of such materials on children and young people and the response of children and young people.

5.2.3 Conclusions for the on-line world

We remark that while the youngsters are exposed to explicit materials in the real world and can become victims of child pornography in the real world, the risk may be higher in the on-line world. And the harm caused more significant. We attribute this on the one hand, to the rapid development of new technologies and applications (for example, bulletin board systems, messaging, video uploading and downloading, social networking, peer-to-peer sharing in sourcing and grooming young victims for child pornography – see discussion in Section 4.5) and on the other hand, in the easy accessibility and availability on the Internet of inappropriate on-line materials. As far as our study of explicit materials and mobile phones is concerned, we state that since supervision and parental control is less on mobile phone usage, the corresponding risk to youngsters is significantly greater. So the exposure to inappropriate materials whether the exposure is (a) intentional, (b) solicited (c) unwanted or (d) accidental can, and does have a profound and long lasting if not, per-

31 Brooks, G., (1995) *The Centerfold Syndrome*, Jossey-Bass, San Francisco referred to in Stock, P., (2004) The harmful effects on children of exposure to pornography, Canadian Institute for Education on the Family.

32 The study used the Sexual Opinion Survey scale and the Self report Psychopathy scale (SRP-III) to measure college students' sexual and antisocial dispositions. See Sim, J.W., Lee, S.W., and Bryant, .P., (2007) Who responds to Unsolicited Sexually Explicit Materials on the Internet?: The Role of Individual Differences, *CyberPsychology & Behaviour*, Vol. 10, No. 1

33 Khoo, P.N., and Sern, C.Y., (2004) Not wanted in the inbox! Evaluations of unsolicited and harassing e-mail, *Psychology of Women Quarterly*, Vol. 28, p. 204-214 referred to in Sim, J.W., Lee, S.W., supra n. 26.

34 Bogert, A.F., Personality, individual differences, and preferences for the sexual media, *Archives of Sexual Behaviour*, 2001, Vol.30 p.29-53 referred to in Sim, Lee and Bryant, supra n.31.

manent scar on a child's overall cognitive, emotional, and attitudinal development. From the above, we are tending to conclude in answer to RQ1a, that the effect on children and the youth maybe greater in the on-line world than in the real world.

5.3 VIOLENCE IN MOBILE GAMING

The second topic with respect to content is violence in mobile gaming. An interesting observation is made by researcher Jansz of gaming. Jansz (2008) opined that playing games fulfills individuals' needs in that the investment in time and effort (pain) results in enjoyment (pleasure).³⁵ According to Jansz, an individual may have a need (a) for competition (to win), (b) for control (to be in charge), (c) for fantasy (escapism), (d) for social interaction (related to (a)), (e) for interest (to understand), (f) for excitement (related to (a) and (c)), and (f) for diversion (a pastime).³⁶ While the observation may be true, existing research points to the fact that exposure to violence from "traditional forms of technology" (television, movies, and computer-based gaming) may increase the risk of violent behavior.³⁷ The study by Hopf, Huber and Wei (2008), for example, showed that the more frequently children view horror and violent films during childhood and the more frequently they play violent electronic games at the beginning of adolescence, the higher will the children's violence and delinquency at the age of 14 years.³⁸ In so far as video games are concerned, many societal concerns of the violent nature of video games and its corresponding impact on children and young people have been established in on-line games accessed on the personal computer, or in games played over the games console. There is little research into the impact of these games on this vulnerable group if the games are played over the mobile platform. However, it is observed that the most persistent question concerning video games is the influence that the games might have on children and young people's aggressive and social misbehaviour. It can be inferred that the interactive nature of the video games would make such violent video games more potent than similar visual content on passive medium of television. Research findings on the impact of violent games tend to indicate an increased level

35 Jansz, J., Being seduced by digital entertainment games: risk or challenge? Gaming forum: Different perspective of gaming. Fair Play, Stockholm, November 2008, available at http://www.fair-play.se/pdf/GamingForum_Jansz.pdf

36 Supra.

37 See for example, Hopf, W.H., Huber, G.L., and WeiB, R.H., Media Violence and Youth Violence: A Two Year Longitudinal study, *Journal of Media Psychology*, Vol. 20, Issue 3, 2008, p. 79-96. and Olson, C., Kutner, L.A., Warner, D.E., Almeriji, J.B., Baer, L., Nicholi, A.M, and Beresin, E.V., Factors correlated With violent video games use by adolescent boys and girls, *Journal of Adolescent Health*, Vol. 14, Issue 1, 2007, p. 77-83.

38 Supra Hopf, Huber and WeiB.

of aggression, anti-social behaviour, and hostility amongst children and young people. These findings have been put forward by US psychologists Anderson, Gentile, and Buckley (2007) and Comstock and Scharrer (2007).³⁹ The psychologists measured the short term effects of aggressive behaviour by looking at (a) aggressive words used, (b) violent attitudes, and (c) punishment levels. The study conducted amongst children between the age of 9-to-12 revealed that children tend to use more aggressive words, have more violent attitudes and give higher punishment immediately afterwards compared to the group who played non-violent games.⁴⁰

We also found it worthwhile to refer to a scientific study by Carnagey (2007). According to Carnagey (2007), aside from aggression, another consequence for the brain of viewing violent and unpleasant images as a result of gaming is de-sensitisation to images of violence.⁴¹

We remark that de-sensitisation can be one of the long-term effects of media violence. Research by Huesmann (2006), for example, has revealed the short-term and long-term effects of media violence on youngsters. Huesmann (2006) opine that short-term effects on the one hand, are due to (1) priming processes, (2) arousal processes, and (3) immediate mimicking of specific behaviours while long-term effects on the other hand, can be due to (1) observational learning of cognition and behaviour and (2) de-sensitisation process.⁴² We find it useful here to repeat Huesmann's views on the short-term effect of mimicking and his long-term effect of observational learning and de-sensitisation process since these are some of the effects we see arising in children and young people's exposure to potential hazards. For the short-term effect of mimicry, Huesmann (2006) points to evidence that human and primate young have an innate tendency to mimic whomever they observe.⁴³ Observation of specific social

39 Anderson, C., Gentile, D., and Buckley, K., (2007) *Violent Video Game Effects on Children and Adolescents, Theory, Research and Public Policy*, Oxford University Press, Oxford and Comstock, G., and Scharrer, E., (2007) *Media and the American Child*, Academic Press in Hargrave and Livingstone, supra n.18.

40 Supra. The findings confirm earlier research findings by researchers Dill and Dill, and Bensley and Eenwyk. Dill, K.E., and Dill, J.C., (1998) Video game violence: A review of the empirical literature, *Aggression and Violent Behaviour*, 3(4), p.407- 428 and Bensley, L., & Van Eenwyk, (2001) Video games and real life aggression: Review of literature, *Journal of Adolescent Health*, Vol. 29, p. 244-257 referred to in Lin, C., & Atkin, D., (eds.) (2007) *Communication Technology and Social Change*, Lawrence Erlbaum & Associates, Inc, Publishers, Mahwah, New Jersey.

41 Carnagey, N., Anderson, C., and Bartholomew, B., (2007) Media Violence and social neuroscience, *Current directions in Psychological Science*, Vol. 16, p. 178-182.

42 Huesmann, L.R., (2007) The Impact of Electronic Media Violence: Scientific Theory and Research, Vol. 41, Issue 6, *Journal of Adolescent Health*, p. 1 -11 and Bushman, B.J and Huesmann, L.R, (2006) Short-term and long-term effects of violent media on aggression in children and adults, (2006), *Archive Pediatric Adolescent Medicine*, No. 160, p. 342-352.

43 Meltzoff, A.N and Moore, M.K., (2000) Imitation of facial and manual gestures by human neonates: Resolving the debate about early imitation, in Muir, D., and Slater, A., *Infant Development: The Essential Readings*, Blackwell Publishers, Malden, Massachussets.

behaviours around them increases the likelihood of children behaving exactly that way. Huesmann suggests that as children observe violent behaviour, they are prone to mimic it.⁴⁴ In organisational learning, Huesmann (1998) states.

“(...) that a person’s social behavior is controlled to a great extent by the interplay of the current situation with individuals’ emotional states, their schemas around the world, their normative beliefs about what is appropriate, and the scripts for social behavior that they have learned.”⁴⁵

Thus, Huesmann opines that children encode in memory social scripts to guide behavior through observations of family, peers, community, and mass media. Consequently, observed behaviours are imitated long after they are observed. Huesmann (2006) suggests that extensive observation of violence and anti-social behavior has been shown to bias children’s world schemas toward attributing hostility to others’ actions and as children mature further, normative beliefs about what social behavior is appropriate become crystallised.⁴⁶ For desensitisation, Huesmann (2006) continues by stating “Negative emotions experienced automatically by viewers in response to a particular violent or gory scene decline in intensity after many exposures.”⁴⁷ We remark that with repeated exposures, the negative emotional response habituates, and the child becomes “desensitised”. The child can then think about, and plan proactive aggressive acts without experiencing a negative effect.⁴⁸

We state that existing studies tend to demonstrate the co-relation between violence and aggression. However, there is some evidence to suggest that violent video games may benefit children and families (Kutner and Olson (2008), Olson, Kutner and Warner (2008)).⁴⁹ According to Kutner and Olson, the benefit may stem from using violent video games as a safety outlet for fear and anger towards another person. For example, a player may play a violent game in order to have the power to do anything he wants to over another individual. The player may express his fear and anger by repeatedly shooting a character in the game, imagining the character is the person he hates. The player recognises that violent behavior and activity is only a fantasy,

44 Supra Huesmann, n.42.

45 Huesmann, L.R., The role of social information processing and cognitive schema in acquisition and maintenance of habitual aggressive behavior in Geen, R. G., and Donnerstein, E., (1998) *Human Aggression: Theories, Research and Implications for Social Policy*, (eds.) Academic Press, New York, N.Y referred to in Huesmann supra n. 42.

46 Supra Huesmann, n.42.

47 Supra Huesmann, n. 42.

48 Supra Huesmann, n.42.

49 Kutner, L., and Olson, C., (2008) *Grand Theft Childhood: The Surprising Truth About Violent Video Games*, Simon and Schuster; Olson, C., Kutner, K., and Warner, D., (2008) The role of violent game content in adolescent development, *Journal of Adolescent Research*, Vol. 23, No. 1, p. 55-75.

a video game.⁵⁰ Thus, we remark that it is possible that the player is using the violent video games as a means of ‘emotional escapism’.

As far as violence in mobile gaming is concerned, we may tentatively conclude while some there may be some benefit to violent video games, the general reaction is that the consumption of violent and sexually explicit content may be a contributory factor to the creation of a “sense of emotional detachment”. We expect these concerns to be exacerbated when gaming migrates onto to the more portable, unsupervised mobile platform. This is because there is a real likelihood for children and young people to ‘indulge’ in obsessive gaming when they are left unsupervised. In our opinion, this expectation is the start of our answer to RQ1b.

5.4 THE POWER OF CYBER-BULLYING AND UNWANTED SEXUAL SOLICITATION

For the second key area, contact, we investigate more closely the devastating power of cyber-bullying and unwanted sexual solicitation. We start the Section with seven effects of cyber-bullying in Subsection 5.4.1. Subsection 5.4.2 deals with on-line bullying; in Subsection 5.4.3 with tragic incidents and suicide whilst in Sub-section 5.4.4 deals with unwanted sexual solicitation.

A culture of on-line harassment and cyber-bullying has emerged with the advent of new technologies. The phenomenon of “happy slapping”, for example, can be said to be a direct result of the incorporation of the digital camera into telephones. Happy slapping is where an unsuspected stranger is deliberately assaulted while the assault is being filmed by an accomplice. While happy slapping started off as a comical act at the expense of the victim, the level of violence in recent incidents has increased.⁵¹ The virtual facilitation of bullying via the use of new communication technologies intensifies the experience of abuse from the victim’s perspective.⁵² The analysis below provides a first step to answering RQ1b. For ease of reference, we repeat RQ1b which reads as follows: “Will the use of mobile phone increase the concerns?”

We remark that in addition to the mobile phone’s mobility and portability, we have seen the reasons (in Section 4.2) why mobile phones are so highly valued by children and young people. However, the mobile phone has taken on-line harassment and bullying into a whole new dimension: one can now harass and bully ‘on the go’, anytime, anywhere away from the watchful eyes

⁵⁰ Supra.

⁵¹ Teen girl detained over “happy slapping” death, March 2008, Reuters U.K., available at <http://uk.reuters.com/article/idUKL1884088120080318>

⁵² Mishna, F., (2007) The Current State of Cyber-bullying, Cyber Abuse Initiative, Factor Inwentash, Faculty of Social Work, University of Toronto, available at <http://www.governmentevents.ca/ypo2008/presentations/633.pdf>

of the authority (cyber-bullying is discussed in greater detail in Subsection 4.6.4).

The devastating consequences of bullying have been well documented in numerous studies. We mention here Salmon, Jones, and Smith (1998),⁵³ Einarsen and Mikkelsen (2003),⁵⁴ Rigby (2003),⁵⁵ Hoel and Beale (2006),⁵⁶ and Arsenault (2008).⁵⁷ The studies indicate that the effects of bullying are just as severe and damaging whether it occurs at the workplace, school, or on-line. However, there is increasing concern on the impact that cyber-bullying can have on the mental and psychological make-up of children and young people as the incidence of cyber-bullying becomes more pervasive and prevalent. This is the more so, since children and young people are at a critical development stage where traumatic experiences will more likely leave a psychological scar compared to an adult victim of bullying.

5.4.1 *The seven effects of bullying*

There is evidence to suggest that bullying can have seven effects on the victim. The seven effects can be partitioned into two groups. First, bullying creates (1) fear, (2) anxiety, (3) inferiority complex, and (4) isolation. Fear is a means by which all abusers and bullies dis-empower and control their victims.⁵⁸ Bullies seek to undermine an individual's self esteem as the attack is made on the individual's self confidence. A series of prolonged attacks on a victim's self esteem and confidence will result in the victim's loss of 'self worth'. Anxiety and stress, for instance, can be experienced by victims when (a) their humiliation is witnessed by a large audience in cyberspace or (b) as a result of mass phone texting among their peers.⁵⁹ The anxiety and stress can lead the victim to establishing a feeling of being inferior in relation to his peers

53 Salmon, G., Jones, A., and Smith, D.M., (1998) Bullying in Schools: Self reported anxiety and self esteem in secondary school children, *British Medical Journal*, 317 (7163), p. 924-925.

54 Einarsen, S., Mikkelsen, E.G., (2003), Individual effects of exposure to bullying at work, in Einarsen, S., Hoel, H., Zapf, D., Cooper, C.L. (Eds.), *Bullying and Emotional Abuse in the Workplace: International Perspectives in Research and Practice*, Taylor & Francis, London, p. 127-144.

55 Rigby, K., (2003) Consequences of Bullying in Schools, *The Canadian Journal of Psychiatry*, Vol. 48, p. 583 -590; available at www.cpa-apc.org/Publications/Archives/CJP/2003/october/editorialCredits.asp

56 Hoel, H., and Beale, D., (2006) Workplace Bullying, Psychological Perspectives and Industrial Relations: Towards a Contextualised and Interdisciplinary Approach, *British Journal of Industrial Relations*, Vol. 44, p. 231-262.

57 Bullying harms kids mental health: study, Reuters, February 2008; available at <http://www.reuters.com/article/healthNews/idUSCOL67503120080206?feedType=RSS&feedName=healthNews>; archives of *Pediatric and Adolescent Medicine*, February 2008.

58 Bullying and Fear in Bullying On-line Stress injury to health trauma, PTSD, available: <http://www.bullyon-line.org/stress/fear.htm>

59 See Violence Against Children in Cyberspace, ECPAT International, available at http://www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf.

and his environment thus resulting in the isolation of the victim and an increase feeling of helplessness. Second, bullying also creates (5) anger, (6) depression, and (7) self inflicted injury.⁶⁰ Tremendous anger is normally experienced by victims of bullying. Questions such as "Why me?" are often left unanswered.⁶¹ Quite often, we are never taught how to manage anger. Therefore, in circumstances of extreme anger, we tend to internalise the anger rather than to make the attempt to work out the emotion positively.⁶² Victims can become severely depressed at being unable to control the situation. Additionally, child victims may experience (1) psychosomatic symptoms, (2) feel socially awkward, and (3) may have interpersonal difficulties at school.⁶³

5.4.2 On-line bullying

For on-line bullying, the consequences may be more harmful than conventional bullying for the following four reasons: (1) the adherence to a code of silence, which states "What goes on on-line, stays on-line",⁶⁴ (2) as long as the child has a mobile phone, the bullying can continue into the child's bedroom, seen as the child's sanctuary, (3) unlike real-life bullying, victims of cyber-bullying may not know the identity of the bully, thereby creating (3a) increased frustration, (3b) fear, and (3c) feelings of helplessness.⁶⁵ (4) victims may tend to suffer in silence more since they may not tell their parents about the problem due to their fear of losing their mobile phones.⁶⁶ The experience can be devastating to children and young people. We provide two examples of the experience from the victim's perspective.

Example 1:

"You feel as if no one can help you," says Alyssa, 14, who waited two weeks before telling her mother she was being bullied by a boy who called her a 'loser' and 'stupid' in instant messages. "It's a lonely, scary feeling."⁶⁷

⁶⁰ Supra

⁶¹ Supra n. 52.

⁶² Bullying and Self harm in Bullying On-line Stress injury to health trauma, PTSD, available at <http://www.bullyon-line.org/stress/selfharm.htm>

⁶³ Campbell, M.A., (2005) *Cyber-bullying: An old problem in new guise*, Australian Journal of Guidance and Counselling, No. 15, p. 68 -76

⁶⁴ Willard, N., Executive Director of the Center for Safe and Responsible Internet Use in Swatz. J., Schoolyard bullies get nastier on-line, USA Today March 7, 2005: available at http://www.usatoday.com/tech/news/2005-03-06-cover-cyberbullies_x.htm

⁶⁵ Muscari, M., (2008) How Can I Help Teens Who Are Victims of Cyber-bullying?, September, Medscape Today, available at <http://www.medscape.com/viewarticle/579988>

⁶⁶ Supra.

⁶⁷ Supra Swatz, n. 64.

Example 2:

Michael, 11 years old, did not use the computer for six months after his brush with an on-line bully. Michael recounts his experience in a chat room after he beat another player in an on-line game: "If I find you, I will beat you up." "It scared me, it was the first time, I was bullied."⁶⁸

5.4.3 *Tragic incidents and suicide*

Consequently from our investigations, it is not unusual for victims of bullying to represent a high proportion of statistics who commit suicide. Statistics have indicated that people who attempt suicide are those who do it 'out of despair'; most of them seeing suicide as 'a logical step'.⁶⁹ We provide three examples of tragic incidents that was the result of cyber bullying.

- 1 Ryan Halligan was taunted for months. Classmates spread rumours via instant messaging that the 13-year-old boy was gay. A popular female classmate pretended to like him and chatted with him on-line only to copy their personal exchanges and share them with her friends. Unable to cope, Halligan, of Essex Junction, Vermont, killed himself.⁷⁰
- 2 Gail Jones, a 15-year-old from Tranmere near Liverpool in the UK took her life after receiving, at one point, 20 silent calls on her cellphone every 30 minutes. Her father, Glyn, suspects that a final call in the middle of the night pushed her over the edge.⁷¹
- 3 One other tragic case which drew the attention of many was the suicide of a 15-year- old girl who was 'pushed over' the edge with her tormentors continuously hounding her over her mobile phone. The victim died of an overdose of painkillers with her mobile phone in her hands.⁷²

While we accept that the above examples are anecdotal rather than derived from empirical research, it does indicate an urgent need to provide adequate legal rules to protect the children and young people from the devastating effects of cyber-bullying.

⁶⁸ Supra Swatz. n.64.

⁶⁹ Supra Swatz, n.64.

⁷⁰ Cyber-bullying: The Ryan Halligan story, available at <http://www.inobtr.org/parents/cyber-bullying-the-ryan-halligan-story/>

⁷¹ McKenna, P., (2007) The Rise of Cyber-bullying, July 2007, New Scientist Tech, available at <http://www.newscientist.com/article/mg19526136.300-the-rise-of-cyberbullying.html?full=true>

⁷² Stokes, P., (2001) Teenage victim of phone bullies died clutching mobile, The Telegraph, U.K. June 19, 2001, available at <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2000/08/19/ndani19.xml>

5.4.4 Unwanted sexual solicitation

While there is no anecdotal or empirical evidence (at least that we are aware of) of unwanted sexual solicitation which has led to suicide and death, a study by researchers Mitchell, Wolak, and Finklehor (2007) revealed that 31% of respondents were reportedly feeling very distressed as a result of being solicited sexually. We concur with researchers Mitchell, Ybarra, and Finklehor who suggest that youths who are targeted by unwanted sexual solicitations experience a myriad of concurrent psycho-social problems off-line. The psycho-social problems experienced include behavioural problems such as (a) symptoms of depression, (b) substance and alcohol abuse, (c) delinquent behaviour, and (d) weapon carrying at school.⁷³

5.5 MOBILE SPAM

The third key area is commerce or commercialism. In this subsection, we focus on the element of spam. In Subsections 4.7.2 and 4.7.3, we dealt with premium-rate services and the younger generation as target market. The aim of the current section is to contribute to answering RQ1 with respect to the mental overload and psychological impact that spam might have.

Mobile spam refers to unsolicited messages sent to mobile phones with the aims of (1) trying to sell a product or service, (2) asking the caller to return call to premium rate number, (3) sending messages that may be harmful or attempt to change the mobile settings, or (4) sending messages that are threatening or intrusive to privacy.⁷⁴ The concerns raised in Subsection 4.7.1 in relation to real-world spam are similar to those experienced by mobile phone users. This includes but is not restricted to (1) the increased cost incurred in managing and addressing consumers' complaints, and (2) significant loss of revenue if the mobile spam problem is not resolved by the mobile service operators. A *Pontis report* released in 2007 revealed that two thirds of the users in the UK are (a) annoyed at receiving spam and (b) hate receiving spam on their mobile phones.⁷⁵ 70% of these surveyed found the mobile marketing campaigns totally irrelevant to them. Only 11% has bought products as a result of receiving the offer from their mobile phone operators.⁷⁶ In addition to the

73 Mitchell, K.J., Ybarra, M., Finklehor, D., (2007) The relative importance of on-line victimisation in understanding depression, delinquency and substance use, *Child Maltreatment* 12 (4) p. 314-324

74 Brodt, T., and Hee, J., Insights into mobile spam, University of St. Gallen, Switzerland; available at www.mobilesam.org

75 The Pontis survey report was commissioned by GfK NOP amongst a sample of 752 mobile phone users.

76 Users Fed Up with Marketing Spam from Mobile Service Providers, available at <http://www.cellular-news.com/story/25342.php>

concerns of increase consumer complaints and revenue loss, the *Pontis report* indicated a current trend amongst mobile service providers, i.e., that the providers themselves are (1) allowing their platform to be used in indiscriminate marketing by advertising agencies, and (2) the mobile operators themselves are sending out the on-line promotional offers. These surveys indicate that despite the abhorrence of spam, spam will continue to proliferate. What the case, here we may conclude that, having seen the rise of spam and the figures of the messages, the mental overload and the psychological impact are considerable. These are elements which certainly will stimulate researchers for further research. Yet, this is beyond our scope.

5.6 AGGRESSIVE MARKETING STRATEGY

The second point on the issue of commercialism is the aggressive marketing strategy (e.g., premium-rate services) as adopted by the entertainment industry, and as adopted by the content providers towards the younger generation. Thus, two concerns arise in consideration of the aggressive marketing strategy: (1) the increasing pressure on children and young people to consume and (2) the inappropriateness of the marketing strategies adopted, such as (2a) strategies that fail to respect children's privacy, and (2b) unsuitable marketing tactics. The aim of this section is, of course, directly related to answering RQ1.

5.6.1 *Research performed so far*

There has been research looking at on-line marketing and children. We mention here the research by researchers Fielder, Gardner, Nairn, and Pitt (2007) on on-line commercialism via the use of children websites.⁷⁷ Since mobile marketing and children is a relatively new area, Fielder et al.'s (2007) study will be used as our reference point. We attempt to examine to what extent the concerns are raised as a result of on-line commercialism when access takes place via a computer. The question will be analogously investigated as if access is made via the use of mobile phones.

77 Fielder, A., Gardner, W., Nairn, A., and Pitt, G., Fair Game? Assessing commercial activity on children's websites and on-line activity, (2007) available at <http://www.childnet-int.org/downloads/fair-game-final.pdf>. These sites included own brand toys sites such as Barbie, Disney, Cartoon Network, television related sites such as Nicklelodeon, games and virtual world, Habbo and Neopets, entertainment sites such as YouTube, social networking sites such as MySpace, and Bebo and messaging sites, MSN hotmail and yahoo.

5.6.2 Four important findings

Below we provide four important findings by the researchers Fielder, Gardner, Nairn, and Pitt (2007). They found that:

- 1 at least 25% of the advertisements are for products and services that are prohibited in the UK (this including gambling and dating advertisements);
- 2 more than half of third-party advertisements on the websites was in one way or another misrepresented. (an example of misrepresentation is that the websites claim to offer something for 'free', with no apparent strings attached);
- 3 where the offers are genuine, some of these offers were found inappropriate for children (these offers included free credits for gambling or free registration for dating services), and
- 4 some websites breach data protection laws.⁷⁸

The findings provide a clear indication that insufficient regard is paid to the correctness and the legality of the marketing material. This suggests that the same, if not more serious flouting of the rules may exist when children and young people are targeted as marketing objects via their mobile phones. Indeed, the seriousness of misleading website advertisements provided the impetus for a major clampdown conducted across 27 member states.⁷⁹ Called "the EU Sweep", the clampdown was conducted by enforcement authorities in two phases. (1) the EU Sweep on Airline ticket selling websites and (2) EU sweep on mobile phone content services.⁸⁰ Our focus is on EU sweep on mobile phone content services. Indeed, initial investigations revealed that websites do take advantage of the children's lack of consumer experience and credulity. The sweep's results revealed a rate of 80% irregularities in comparison to that of sites oriented towards adults.⁸¹ We remark that despite the technical limitations of smaller screens and reduced storage space on mobile phones as compared to the computer, the portability of the handheld devices together with the interactivity of the applications will make mobile phones, a unique and pervasive marketing medium. Adopting unethical marketing strategies when targeting the younger generation is known as youth commercialism via mobile phones or "mobile youth commercialism", and although it is in its embryonic stage, we believe the results of the EU sweep is the tip of the iceberg – it is certainly a concern that should not be overlooked or neglected.

78 This is normally done by encouraging the child to give away their friends' details whether or not in return for a free game or download. See *supra*.

79 EU crackdown on ring-tone scams, July 2008, available at <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/516>

80 *Supra*.

81 *Supra*.

5.6.3 Consumption habits

Perhaps, what society is currently, most concerned with, is the consumption habits and spending choices of children and young people. Castells et al. (2007) have observed that the pursuit of children during their pre-teen and teen years is to have fun, and when they make spending choices, entertainment is the key.⁸² This is reflected in their consumption habits where a high percentage of the youngsters spend a considerable amount downloading ring tones, music, screen savers, and video clips. The costs are unknown to these youngsters, since the cost implications of these services are rarely made known to them. As discussed earlier, the assertion of their individuality and independence resulting in them personalising their handsets is a major contributing factor. In addition to personalisation of their mobile phones, a number of other services are seen as generating keen interest. They are likely to be sectors for high revenue growth for the younger generation. Here we mention mobile gaming, mobile music, messaging and multimedia services, and gambling.

Whilst the entertainment industry and content providers are not to be faulted for taking advantage of the situation to satisfy market demands, the concerns are four-fold. We reformulate the four concerns into four questions.

- 1 To what extent is indiscriminate marketing affecting the consumption habits of children and young people?
- 2 What protection is afforded to this vulnerable sector with respect to, for example (a) the cost of downloads, (b) the quality of the content downloaded, and (c) the appropriateness or suitability of the content downloaded?
- 3 What measures are in place to ensure that children and young people are getting what they are paying for?
- 4 What protection is provided for children and young people with respect to LBS? how adequate is the protection against abuse?

In relation to these concerns, (1) further research must be conducted and (2) a comprehensible review of the existing regulations to address the four-fold concerns should be made. In our opinion, proactive measures should be undertaken by the regulators. They will be seen as a step in the right direction in the interest of the consuming public.

5.7 CHAPTER CONCLUSIONS

Below we would like to answer our two questions posed earlier, viz. (RQ1a) Is the impact of the concerns on children and young people, greater in the

82 Castells, M., M., Fernandez-Ardevol, M., LinChuan, J.Q., and Sey, A., (eds) (2007) *Mobile Communication and Society*, The MIT Press, Cambridge Massachusetts, London, England.

on-line world than in the real world?" and (RQ1b) "Will the use of mobile phone increase the concerns?". From the investigations of the foregoing sections, we may conclude that for RQ1a, the impact of the hazards on children and young people can pose a greater risk on-line than they do off-line. This is due to the (1a) proliferation of new communication devices and applications, (1b) the possible disregard of good marketing ethics, and (1c) the shroud of anonymity prevalent in the use of the new technologies. For RQ1b, it holds that the portability and the varied functionality of the applications will lead to an increased usage of mobile phones; this may lead to an increase in the concerns raised.

Below we partition the section on chapter conclusion into two subsections, viz. results of our investigations (Subsection 5.7.1) and our conclusions (Subsection 5.7.2).

5.7.1 Results of our investigations

In our investigations, we have seen a new generation of children and young people emerging as (a) a major social group and (b) an important consumer sector. This emerging group is easily adapting to fresh technological ideas and is embracing innovations in their daily lives. For this group, the mobile phone is more than a device for communication. It is an icon of the youth. Mobile ownership amongst the younger generation is seen as a symbol of responsibility that comes with the 'coming of age' of the child. The coming of age of this social group is also seen in the use of the mobile phone by children and young people in establishing their own (1) culture, (2) identity, (3) norms, and (4) language. The mobile phone provides the social group, the independence and privacy they crave.

Our investigations have also revealed that whilst the entertainment and mobile content industries strive to take a solid and commercially acceptable advantage of this largely untapped and important consumer segment, there is an increasing concern that the challenges presented by the growing mobile ownership amongst the young generation remains unresolved. One main concern is the impact of the exposure of inappropriate materials on children and young people. We observe that the exposure of illegal content and harmful materials does have a damaging and indeed, a traumatic (and in some instances) permanent impact on both the physical and mental development of children and young people who are relentlessly exposed to these unsolicited materials.⁸³ The solicitation, contact and abuse of the child off-line (upon contact first made on-line) can, and does have a severe effect on the victim's overall social development, for instance, in developing trust and interacting confidently with individuals. Furthermore, if the sexual abuse images of the

83 Supra Valkenberg and Schouten n. 24, Wolak, Finklehor and Mitchell, n.23 and Mitchell, Finklehor and Wolak n. 27.

child victim are disseminated in the public domain such as the Internet, the abuse of the child will be an on-going process since it will be difficult to recover and account for each and every image, and to delete all the images satisfactorily. Consequently, the child victim will feel guilty, humiliated, angry, and suicidal. We believe that the increase ownership of mobile phones amongst youngsters will significantly exacerbate the existing and yet unresolved concerns of fixed Internet.

5.7.2 *Our conclusion*

From our observations on the effects of the potential hazards, we may arrive at three conclusions. The first conclusion is in terms of our first concern, content. By the evidence given above, we may conclude that repeated exposure to pornography and violence has a detrimental effect on children and young people. The impact is illustrated in the youngsters mimicking the activities and the violence. For example, there are numerous reports (see ECPAT International Working Draft on Cyberspace as a Locale of Violence, (2005)⁸⁴ and Child Abuse, Child Pornography and The Internet, (Carr 2003⁸⁵)) of boys entering their early teens, who are reported to have raped young girls in mimicry of what they had witnessed in video games and pornographic materials. There is evidence has shown that repeated exposure to sexually explicit materials and violent gaming can contribute to a sense of de-sensitisation and 'emotional detachment'.⁸⁶ While the reports are anecdotal and not the result of empirical research studies, we believe that the anecdotal evidence should not be dismissed since it is impossible and unethical to create similar conditions to derive the required results. What we have seen so far is that technology has created a culture whereby the youngsters are not able to distinguish between role playing and reality. This is especially true in obsessive on-line gaming amongst children and young people.

The de-sensitisation and emotional detachment is also an important factor in our second main concern, contact. We look at it in terms of cyber-bullying on the one hand and unwanted sexual solicitation, on the other hand. We remark that the anonymity of the technology lends courage to cyber-bullies by providing distance between the bullies and the victims so that there is no emotional interaction with the victim. With this emotional detachment, children and young people cannot 'see' the pain and the harm caused by their bullying, and thus may not understand the wrongfulness of their actions. Rather, they

84 Working Draft on Cyberspace as a Locale of Violence, ECPAT International, available at www.ecpat.org.

85 Carr, J., Child Abuse, Child Pornography and the Internet, available at www.nch.org.uk.

86 Stande-Muller, F., Bliesener, T., and Luthman, S., (2008) Hostile and hardened? An experimental study on de-sensitisation to violence and suffering through playing video games, *Swiss Journal of Psychology*, Vol. 67, Issue 1, p. 41-50. Supra Carnagey n. 41 and Huesmann n. 42.

may put their bullying antics down to play-acting. From this observation, we may conclude that technology may have contributed to the negative cognitive development of youngsters. We may also draw similar conclusions on the children and young person's psychological development. This seen in unwanted sexual solicitation where a number of psycho-social problems and behavioural problems are experienced by youngsters off-line who have been the victims of on-line sexual solicitation.

Our final concern is commercialism. While youngsters may be tech-savvy, they may not be astute consumers. Thus, premium-rate services and mobile spam is a growing area for concern. For example, we see the cost and destabilising effects of real world spam migrating over onto the mobile platform. We have also seen the use of aggressive and unethical marketing tactics used to lure and to induce youngsters to spend and consume. Further, with applications such as location-based services becoming commonplace, there are concerns that without adequate regulations, the application will be (1) indiscriminately used by marketers to push their products and services to the younger generation and (2) abused by paedophiles, child molesters, and bullies to locate and intimidate children and young people.

In Subsection 5.6.3, we had posed four continuing concerns that require further research and investigation. We remark that while we regard the recent EU sweep as a positive measure in sending a warning to unscrupulous traders, we believe that greater measures can be adopted to protect unsuspecting children and young people from mobile youth commercialism.

5.8 AN ANSWER TO RQ1

Below we answer RQ1: *"What (sociological, cognitive, mental and psychological) impact does the rise in the use of mobile technology have on children and young people?"* From the findings of this chapter, we may conclude that mobile telephony and its applications do have a significant transforming impact on children and young people. We admit that the notion of 'significant' is only used by measuring the percentages of use, and not by providing statistics only. Yet, we believe that from the numbers (as given in percentages) and the number of publications cited, it is clear that we may agree with the notion 'significant'.

The transforming impact on children and young people has both positive and negative effects. As with all forms of media and technology, new and old, there are two sides of the same coin to mobile telephony, the good and the bad. The good side is represented by (1) convenience, (2) personal safety, and (3) social networking, whilst on the bad side, we are looking at the hazards that already exist on the fixed Internet and are now migrating to the mobile platform. We have seen how the personal and portable nature of the mobile

phone has contributed to its rapid diffusion and exacerbated societal concerns of potential hazards.

From our investigations, we may conclude that (1) the hazards are real and (2) the impact on children and young people is damaging. Here, we need to remain mindful that the beneficial effects of mobile technology cannot be effectively separated from its negative effects. Instead in managing those hazards, we need to ensure that the approach which the society adopts (1) neither stops the development of innovative technology, nor (2) have a disproportionate and unintended impact on the positive effects for children and young people. Both issues deserve to be investigated more closely. The research entails an evaluation of the various platforms on how mobile content can be delivered followed by some counter-measures and to what extent the existing laws offer adequate protection to this vulnerable group. These research topics are the tasks that result when investigating RQ2 which is addressed in Chapter 6.

