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Corso di Dottorato in Società dell'Informazione

CYBERBULLYING BEHIND FRONTIERS:

Deviant Behaviours and Intercultural Factors
in Digital Communication

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A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Sommario

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Introduction

In the 2008/2009 academic year the University of Milano-Bicocca conducted a project aimed at teaching pre-teens and teens about conflict resolution. A total of 9 schools and about 400 students were involved and received training on the emotions and the communication uniqueness of conflict relationships. The main idea guiding the project was that the ability to positively deal with conflicts, without denying them but at the same time avoiding their escalation and possibly violent outcomes, is extremely useful yet not widespread among adolescents.

The training of the students was preceded and followed by a research phase that allowed the collection of information on the more widespread conflict representations and dynamics among the student population. Along with the "traditional" conflicts among peers, with the families or even with the educators, a consistent part of the teens reported the occurrence of conflicts involving the use of mobile phones and Internet. The questionnaire submitted allowed to get a quantitative idea of the diffusion of this kind of conflict, and through the interaction with the students and their teachers these data found confirmation in the number of stories that were spontaneously reported every time the subject was approached: a high school girl forced to change school after a "hate-campaign" accusing her of being too compliant with the professors was started against her via Facebook; a pre-teen humiliated by the online poll launched by his schoolmates and asking to express an opinion on his presumed homosexuality; a girl arriving at school one morning to find her MSN private conversation with a supposed girlfriend printed out, photocopied and distributed at the school entrance in the morning… The narrated episodes spaced from the more serious and painful ones to the funnier ones, but they all confirmed the pervasiveness of these kinds of phenomena.

What is clear by now is that new technologies have become an integral part of the lives of young people, but in recent years, their functions have changed considerably. For instance, whereas in the 90s they used the Internet primarily for entertainment (Valkenburg and Soeters, 2001), at present they predominantly use it for interpersonal communication (Gross, 2004; Lenhart, Madden, and Hitlin, 2005), with all the benefits and dangers this brings. As it is not possible to make the virtual world completely safe, it is necessary to build children's resilience to the material to which they may be exposed and help build their confidence and skills to manage both the tools and the situations of the Information Society.

The results of the research carried out during the project "To grow, learning how to manage conflicts"[1] became the first step of a wider, international study carried out with the collaboration of public and private institutions, involving approximately 1400 students from five countries, and trying to make a contribution to the body of research that is rapidly developing on the subjects of adolescent uses and misuses of ICT. The

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[1] The main results of this intervention have been resented at the 2010 World Conference on Educational Sciences and published in the conference proceedings . Mura, G., Bonsignore, V., Diamantini, D., (2010). Conflict management among secondary school students, Procedia - Social and Behavioral Sciences, 2(2), p.2402-2408

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

collaboration with the Universidade Federal Fluminense of Rio de Janeiro, the Universidad de La Sabana of Bogotà, the Middle East Technical University of Ankara as well as the support provided by the COST Action "Cyberbullying: coping with negative and enhancing positive uses of new technologies, in relationships in educational settings" and the London based organization Beatbullying.org all greatly contributed in the realization of this project.

To better introduce the object of research the first chapter of this work is dedicated to an overview of the role that ICT plays nowadays in adolescent life on a world scale. Data on ICT penetration are presented, highlighting not just the actual diffusion but as well the constant and steep rate of growth characterizing this field, not only in developed but also in developing countries. Different definitions of cyberbullying are then confronted, and compared with the more widely accepted one of bullying. The problems related to the lack of a common definition are discussed, while thanks to the analysis of the different ones adopted by experts, some of the characteristics of cyberbullying are put into light. The parallel between bullying and cyberbullying is then abandoned and the particularities of cyberbullying explored more deeply.

Cyberbullying is a new phenomenon, and no extensive theory has already been accredited which can describe it in a satisfactory way, although research in this field is evolving at a high speed. To gain a better understanding of the dynamics of cyberbullying it is necessary to integrate the knowledge developed in different fields of research, mainly concerned on one hand with the particularities of computer and mobile phone mediated communication and on the other hand with the fostering impact that the changes of adolescence could have on the propensity to engage in acts of cyberbullying. The idea of a virtual world whose intrinsic characteristics may enhance the probabilities of online aggressive behaviours leads to the search for variables that are valid across countries and cultures, thus the necessity for cross-cultural research is examined.

Many studies have already dealt with the explanation of moral and immoral behaviour in normal, average people and the usefulness of the studies on moral disengagement have already been recognized by researchers interested in bullying dynamics. Some of the variables that the studies on moral disengagement and "bad" behaviour have enucleated as particularly relevant for those topics, such as anonymity, find in the ICT communication dynamics great resonance. The downsides of the online disinhibitory effect strongly depend upon the lack of visual cues in the communication, and the results that such absence have on people's capacity for empathy and moral behaviour is striking.

At the same time, the very level of brain and cognitive development reached by adolescents is taken into account to explain the difficulties that pre-teens and teens encounter not just in controlling their impulses, (a notion that is being investigated with regards to many adolescents' deviant behaviours), but also in imagining the intentions, emotions and possible reactions of an invisible counterpart of an ICT mediated exchange. The connection between frontal cortex development and the executive functions necessary for a full definition of a theory of mind are discussed in relation to their role in explaining cyberbullying behaviours.

While the role of brain development is currently discussed with regard to adolescent crime, criminology research has been actively searching for new models which can help

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

understand cybercrime. Not all cyberbullying behaviours ascribe to the cybercrime field, but the connection is very tight, and the border between joke and illegal action may be trespassed without awareness by adolescents, also because the laws on this subject are still evolving.

After this brief overview of the theoretical background necessary to draw a framework for the research, some of the most interesting surveys realized on this subject are described. Most of the studies realized on cyberbullying so far employ quantitative methods, but the lack of a shared definition and research standards create serious difficulties in the results comparison. What the surveys confirm is the existence and rapid growth of cyberbullying among online teenagers all over the world, while the differences of the concrete definition of the concept and in the survey's realization are analysed to provide a uniform taxonomy that may guide confronting the results.

The results of the first research, realized at the beginning and end of the conflict mediation training are then presented. The research aimed to assess ICT diffusion and uses among the students, as well as the frequency of different cyberbullying episodes, asking about the respondents' involvement both as victims and bullies. The comparison of two scenarios evaluating the respondents' representation of conflict and favourite conflict solution strategies highlight the differences between what have been defined "cyber-sensitive" and "cyber-insensitive" respondents. Moreover, the impact of conflict resolution training also on the representation of cyberbullying is evaluated.

The second, leading investigation is then presented. In this case the questionnaire has been translated and submitted, along with a sampling of Italian secondary school and university students, to respondents from Brazil, Colombia, India and Turkey. A description of the results country by country is presented, along with an overall analysis of the most diffused representation of cyberbullying, and of the different impact that cyberbullying have on both victims and bullies. The last analysis aims to define international predictors of cyberbullying behaviours.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

1 Something old, something new, something borrowed, something blue

O: Hi everybody, I'm not here to ask you to accept my friend request, but I did want to let you to know that Michelle and I are hosting an important meeting at the White House on Thursday, and we want you to be a part of it.

M: We will be talking with students, teachers and parents about how to stop bullying and about the responsibilities each of us has to make sure our children treat each other with respect.

O: This isn't an issue that makes the headline every day, but it affects every single young person in our country.

M: And is something we care about, not only as President and First Lady, but also as parents. It's tuff enough being a kid today and our children deserve the chance to learn and grow without constantly being picked on, made fun of or worse.

O: For a long time bullying was treated as an unavoidable part of growing up but more and more we are seeing how harmful it can be for our kids, especially when it follows them from their school to their phone, to their computer screen. The good news is that there is a growing movement, led by young people themselves, to make our schools and communities places where no one is made to feel alone, or afraid for being different, where all of our children can play. They understand that while technology has allowed us to connect as never before, and that's a good thing, it shouldn't affect how we treat each other.

M: That's why we are holding this summit, and that's why we are asking you, whether you are a student or a teacher, a coach or a parent, to join us.

O: You can participate in the conversation online, find more resources and be a part of this growing campaign at stopbullying.gov or right here on Facebook.

M: we hope you will

O: because putting a stop to bullying is a responsibility we all share.

This message was launched on Youtube.com and Facebook.com[2] the 4 of March 2011, by the President of USA, Barak Obama and his wife Michelle. The first, most relevant point of this message is that cyberbullying is considered to be a relevant issue, enough to be discussed at national level, from one of the most influential men in the world. The second aspect to be noted is that the level of penetration of ICT in the American lifestyle is so deep that both the invitation and the discussion took place on Facebook! Surely, Barak Obama is one of the pioneers of social media use for public or political purposes, having gained the nickname of first "social media president"[3], but this is a quite effective example of the impact of ICT in everybody's life.

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[2] The video is available on the Facebook page
http://www.facebook.com/video/video.php?v=10150148791745639

[3] Internet and mobile media were more central components of Obama's campaign than in that of McCain: McCain spent a total of 119 million USD on media, of which 4.6 million USD were used on internet media. Opposed to that, 24.2 million USD of Obama's 312 million USD media budget were directed to internet media.6 Internet and mobile media were more central components of Obama's campaign than in that of McCain. More information can be found in Baumann, S., (2010), „Election 2.0: How to Use Cyber Platforms to Win the US Presidential Elections - An Investigation into the Changing Communication Strategies of Election

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The access to electronic media such as radio, television, computers and Internet has led to a revolution in the way we communicate, interact and in the construction of our identity comparable, according to Foster (Foster 2006), to the one that took place during the transition from oral to written culture, or from the feudal to the urban society. The ability to integrate words, sounds and images into multimedia messages involves a restructuring of the communication modes. The exchange of communication is getting faster, eliminating the effect of distance, and more interactive, leading to a gradual decrease in 'mass' communication. The debate on the impact that these changes have on human relationships and on the processes of identity construction is open, and new technologies have in that sense supporters and detractors[4].

The impact of this change is especially strong on young generations, the first to grow up in a world where such technologies are part of the daily life: the so-called *digital natives*[5] (Prensky 2001). Like Diana and Jim Oblinger (2005) underline 'As long as they've been alive, the world has been a connected place, and more than any preceding generation they have seized on the potential of networked media'. Being brought up in an era of media saturation and unlimited access to digital technologies has meant that the *digital natives* have a different way of thinking, communicating and learning than previous generations.

When ICT technologies began to spread as interpersonal relational tools among adolescents, worries aroused about the risks they could encounter online (boyd[6] 2008). For instance, it was hypothesized that adolescent's connectedness with relevant others in their environment, such as family and friends, would be reduced, with a negative impact on their well-being (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay and Scherlis 1998, Nie 2001) but these worries were not subsequently supported by research results (Bessière, Kiesler, Kraut, and Boneva, 2008; Valkenburg and Peter, 2007). As expressed in the conclusion of a 4 years survey involving 275.571 adolescents distributed in 31 European

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Candidates", in: Mousoutzanis, A./ Riha, D., (Hrsg.) New Media and the Politics of Online Communities, Inter-Disciplinary Press, Oxford (UK), 155-164.

[4] An interesting example of opposed points of view can be found in the book review that Jonah Lehrer published for the New York Times the 6 June 2010, and available at the following link: http://www.nytimes.com/2010/06/06/books/review/Lehrer-t.html. The book in question is *The Shallows, What Internet is doing to our brains*, published in 2010 by author Nicholas Carr. Expanding the reflections expressed in the previous article "Is Google making us stupid?", Carr argue that Internet is making us more adept at scanning and skimming, but also loosening our capacity for concentration, contemplation, and reflection. In his review Lehrer objects to Carr's argumentations, underlining how new technologies have always been accused of dangerous impacts on the human brain, and quoting how both cognitive psychology and neurologic research have shown results of positive impact of the Internet on the human brain.

[5] For more information on the concept of digital natives it's possible to refer to Paolo Ferris' work "Nativi Digitali". In his analysis Ferri define as digital natives the children and young people born since 2000, when the spread of the Internet become pervasive. This generation is different from so-called digital immigrants (even from the young people who are now 18 years) because it is the first showing a use of the Web as "social" (or 2.0): it has quickly become familiar with the interactive screens or software and interfaces that require formal cognitive skills even before school age. These cognitive experiences have psychological and pedagogical consequences on the digital natives development,

[6] The legal name of the American ethnographer danah boyd is in lowercase

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

and North American countries and regions, the surprisingly consistent results across the countries suggest that electronic media communication among adolescents facilitate rather than supersede face-to-face peer contacts (Kuntsche, Simons-Morton, ter Bogt, Sánchez Queija, Muñoz Tinoco, Gaspar de Matos, Santinello and Lenzi 2009)

Another common worry of parents and educators was connected to the possibility of adult predators lurking in the web in search of easy targets among youth but also this worry does not seem to be supported by to research findings. Some recent studies into child safety and digital technology state that bullying and harassment are the most frequent threats that young people face online, and even unrequested sexual solicitation comes more often from peers than adults. (Palfrey et al. 2008, Cross, Richardson, Douglas and Vonkaelen-Flatt 2009). In a slightly older research, Wolak, Mitchell and Finkelhor (2002) observed that most of the online relationships between adolescents and adults seemed benign. Young people who go online can meet helpful and interesting adults who can offer valuable companionship and advice, although, just like in the real world, there is always the possibility of running into people who could cause them harm.

What has been observed, tough, is that the awareness of the peculiarity of technology mediate communication, and the risks connected with conflict, online or via mobile phones, is not always widespread among its users, and youth are no exception (Botha and Ford 2008). Therefore, the same liberating (or disinhibiting) mechanisms of online communication that can led to positive outcomes in adolescent' relationships can also have negative consequences. For example, flaming (hostile and insulting interactions between Internet users), online harassment, and cyberbullying may all be associated with the disinhibition that results from the reduced auditory and visual cues in CMC.

Another set of problems relates to the technological generation gap. The so called generation of *digital immigrants* is perceived by youth as mostly un-expert in the ICT field, and this can undermine the power of trustworthy adults to intervene in acts of bullying. For instance, a recent research from Australia indicated that 83% of parents would not know what to do if their child were cyber bullied and that 'a significant proportion of teachers did not use or understand interactive online technologies' (Weitenberg 2009). At the same time, it has been recognized that a higher level of parental involvement in the internet use of their kids correlate with lower involvement in cyberbullying (Vandebosch and Van Cleemput 2009)

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
    Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

"Tonight, daddy's going to teach you how to stay safe on the internet - now where's the on off switchy thing?"

In order to address cyberbullying it seems appropriate to adopt the old adage and follow its recipe that describe the combination of something old (the conflicts arising among adolescents), something new (ICT and their impact on interpersonal relationship), something borrowed (contributions coming from different fields of research, such as developmental psychology, social psychology or criminology) and something blue, to complete it all with a sparkle of love.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

1.1 Youth and ICT diffusion

Today, approximately 52 % of the European population is online, with considerable differences between European countries, ranging from 91 % in Norway to 20 % in Moldova. For young people in Europe aged 6 to 17 years, Internet use is even higher with an average rate of 75 %. In many countries like Finland, Norway, Denmark, the Netherlands, Sweden, Germany and the UK, 95 % of young people (or even more) are online (Mora-Merchán and Jäger 2010).

The surveys investigating the diffusion of ICT all over the world generally confirm with data the relevance of the youngest as informational technology users. Generation M, a research conducted by Kaiser Family, is an example of such surveys. Generation M offers an interesting summary of the penetration of new technologies in the lives of young Americans between 8 and 18 years old, and allows to compare the data collected in 1999 with those of the second edition, collected in 2004 and published in 2005. One of the main aspects emerging from the survey is the speed and constancy of change that characterizes the media environment in which children and teenagers are living. In the five years separating the two editions of the research, the proportion of kids and teens in possession of a computer in their private household had a 13 % increase (from 73 % to 86 %), and the proportion of internet connections has grown from 47 % to 74 %. The instant messaging, an activity just started in 1999, has become one of the most popular online activities in 2004. More recent data on American youth report that at the end of 2009, 73% of teens between the age of 12 and 17 are using social network sites, and increase from the 58% recorded in 2007. More specifically 82% of youth between the ages of 14 and 17, and 55% of youth between 12 and 13 years of age have a social network profile page (Lenhart, Purcell, Smith and Zickuhr 2010)

In Italy the figures emerging from the last Italian general survey on ITC diffusion (ISTAT 2009) underline how the trend of growth in PC and Internet diffusion is strongly connected with the presence of an under-age member in the family group. The media of Italian families with Internet access is 47,3 % (a + 5 % compared to 42 % in 2008), but this number increases to 68 % if a minor is present in the family, while it drastically drops to 5,9 % for those families whose members are all over the age of 65. At the time of the ISTAT data collection, Italy held the 21st position for Internet penetration in the European context, with an European mean assessed at 65 %, leading countries such has the Netherlands and Sweden reporting already 83 % Internet penetration. Still it is important to underline that the higher level of computer and internet use in Italy was detected among 11-19 year olds, with a percentage of respectively 89 % and 82 %. For what concerns mobile phones, the penetration is almost complete, even higher than television. Families 'with minors' possess 2 or more mobile phones in 92 % of the cases. Just like almost everything else, the spread of ICT among youth has (many) ups and some downs, one of the latter being the risk of cyberbullying.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Instant Messaging (IM) and Social Network Sites (SNS) are quickly gaining a top position among the most popular online activities[7]. Most youth use online networks to extend their already existing friendships: they can be "always on," in constant contact with their friends via texting, instant messaging, mobile phones, and Internet connections. This continuous presence requires on-going maintenance and negotiation, through private communications like instant messaging or mobile phones, as well as in public ways through social network sites such as MySpace and Facebook. A recent survey conducted by the EU KIDS Online[8] project estimates that 62% of European 9-16 year olds use SNSs, either owning a profile or visiting the one of a friend. One quarter (26%) of the 9-10 year olds report having their own profile, compared with half (49%) of 11-12 year olds. For teenagers, percentages are much higher: 73% of 13-14 year olds and 82% of 15-16 year olds. Social network sites incorporate features from various and already existing social media, such as blogs, instant messaging, email, bulletin boards, chatrooms, and media-sharing sites, and "allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (boyd and Ellison 2007).

Adolescents are often considered to be at the forefront of embracing and entwining new technologies into their lives, and participating in these mediated relational and emotional practices is central to being a part of an offline social world. Youth are developing new kinds of social norms and literacies through these practices, as well as learning to participate in technology-mediated publics (Pascoe, 2009). In a large qualitative study on youth and new media practices promoted by the MacArthur Foundation[9] two main genres of online participation were identified, a dominant one, friendship-driven, and a less common one, interest-driven, generally involving youth who are identified as smart, different, or creative, and who usually exist at the margins of teen social worlds. By exploring new interests, tinkering, and "messing around" with new forms of media, they acquire various forms of technical and media literacy. Youth respect one another's authority online and they are often more motivated to learn from peers than from adults.

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[7] The Data Passport published in January 2010 by comScore shows that Instant Messaging and Social Networking are the most common online activities worldwide. Moreover, Facebook is indicated as the largest share gainer of global online usage in the years 2006-2009. The use of social network sites is especially diffused in Europe, where a growing number of users access them via Mobile. All data are available at the link http://static.dld-conference.com/chameleon//outbox//public/6/comScoreDataPassport_1H10.pdf

[8] The EU Kids Online is a project directed by Professor Sonia Livingstone of the London School of Economics and Political Science; the team includes an expert management group, an international advisory panel, and multidisciplinary research teams in 25 participating European countries: The aim is to produce a rigorous, cross-nationally comparative quantitative evidence base regarding internet use across Europe. The website http://www2.lse.ac.uk/media@lse/research/EUKidsOnline/Home.aspx is a very valuable resource for data and research on these subjects.

[9] The John D. and Catherine T. MacArthur Foundation funded the three-year collaborative project "Kids' Informal Learning with Digital Media: An Ethnographic Investigation of Innovative Knowledge Cultures". Carried out by researchers at the University of Southern California and University of California, Berkeley, the digital youth project explores how kids use digital media in their everyday lives, and its report can be found at: http://digitalyouth.ischool.berkeley.edu/

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The picture of the role played by social networks in contemporary youth culture drawn by boyd and Jenkins (2006) effectively captures the special role that these technologies have come to have in the life of adolescents:

> *These sites play a key role in youth culture because they give youth a space to hang out amongst friends and peers, share cultural artefacts (like links to funny websites, comments about TV shows) and work out an image of how they see themselves. They also serve as digital publics, substituting for the type of public that most adults took for granted growing up, but are now inaccessible for many people – neighbourhood basketballs courts, malls, parks, etc. and allow them spaces where they can escape adult culture.*

In her analysis boyd (2008) identifies a set of technical properties that destabilize core teen relations and a set of dynamics with which teens are forced to contend when participating in these environments. The most relevant technical properties for users of SNS are:

- − Persistence: online expressions are automatically recorded and archived.
- − Replicability: content made out of bits can be duplicated.
- − Scalability: the potential visibility of content in networked publics is great.
- − Searchability: content in networked publics can be accessed through search.

While the dynamics (that in boyd's analysis are indicated as an amplification of those characterizing broadcast media[10]) are:

- − Invisible audiences: not all audiences are visible when a person is contributing online, nor are they necessarily co-present.
- − Collapsed contexts: the lack of spatial, social, and temporal boundaries makes it difficult to maintain distinct social contexts.
- − The blurring of public and private: without control over context, public and private become meaningless binaries, are scaled in new ways, and are difficult to keep distinct[11].

Each one of the dynamics listed implies a number of effects on the average user, and while adolescents generally easily acquire technical mastery over the new tools, it can be more difficult for them to reach the consciousness of the interpersonal dynamics that may generate by the use of SNS. In a survey released in 2009 and promoted by Common Sense Media, a sample of 1.000 teens was interviewed about their behaviours on SNS; researchers found that at least a quarter of the young people polled had posted something they later

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[10] In his work published in 1985 Meyrowitz examined how broadcast media's ability to rework scale reconfigured publics, altered the roles that people play in society, complicated the boundaries between public and private, collapsed distinct social contexts, and ruptured the salience of physical place in circumscribing publics. Meyrowitz, Joshua (1985). No Sense of Place: The Impact of Electronic Media on Social Behaviour. Oxford University Press.

[11] As will be more extensively explained in chapter 1.3 these characteristics and dynamics play a key role also in the analysis of the factors influencing the emergence of cyberbullying.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

regretted, made fun of others or created a false identity online, and one out of ten had posted a nude ore semi-nude picture of themselves[12].

Still, teens cannot give up their online life. To better understand the relevance that an activity as social networking assumed for teen-agers we refer once more to boyd's work. The research "Why Youth Social Network Sites: The Role of Networked Publics in Teenage Social Life" published in 2007 investigated the role that SNS plays in teens life[13]. In her analysis boyd reconstructs the paths that leads to the emergence of the concept of "teens" as a category of people differentiated by adults, and how processes like compulsory education helped in creating a separation between the teen and the adult world. Over time, in the United States, the lives of youth—and particularly high school teenagers—have become more and more structured. Structural (such as mobility issues) and social barriers prevent teens from accessing public places that were previously available for free experimentations with "under progress" identities: *"The power that adults hold over youth explains more than just complications in identity performance; it is the root of why teenagers are on MySpace in the first place"*.

The popularity of Social Network Sites rises and falls at high speed, because it is strongly connected with how the sites support sociality amongst pre-existing friend groups[14]. Teens join a specific social network to maintain connections with their friends, and as soon as the friends' group moves to the next "hanging out" place, the old one is deserted. At the time when boyd's research was conducted, MySpace was the place, while now the most popular social network platform seems to be Facebook. Whatever the platform may be, the following quotes well explain the role that SNS held in teens' relations with peers:

"I'm in the 7th grade. I'm 13. I'm not a cheerleader. I'm not the president of the student body. Or captain of the debate team. I'm not the prettiest girl in my class. I'm not the most popular girl in my class. I'm just a kid. I'm a little shy. And it's really hard in this school to impress people enough to be your friend if you're not any of those things. But I go on these really great vacations with my parents or between Christmas and New Year's every year. And I take pictures of places we go. And I write about those places. And I post this on my Xanga. Because I think if kids in school read what I have to say and how I say it, they'll want to be my friend —Vivien, 13, to Parry Aftab during a "Teen Angels" meeting"

"If you're not on MySpace, you don't exist —Skyler, 18, to her mom"

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[12] The research report can be found at: www.commonsensemedia.org

[13] The research is part of a publication that explores how young people use digital media to share ideas and creativity and to participate in networks, considering whether these media offer young people genuinely new forms of engagement, interaction, and communication. Buckingham, D., (Eds), Youth, Identity, and Digital Media, The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning. Cambridge, MA.

[14] Wolak et al. (2002), in their nation-wide survey of 1,500 USA adolescent Internet users reported that most of these relationships were with same-age peers (70%) and crossed gender lines (71%). Many intersected with face-to-face social networks because they were initiated by introductions from friends or family (32%), involved people who lived in the vicinity (26%), were known to parents (74%), included offline contact by mail or telephone (70%), or involved face-to-face meetings (41%).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

1.2 Bullying and cyberbullying

When talking about bullying, it is possible to refer to a recognized definition, the one given by Olweus (1996)[15]: "a student is subject to bullying, or is victimized, when exposed, repeatedly over time, to offensive actions perpetrated by one or more kids". Therefore, to classify an aggression as bullying, the following conditions have to be satisfied:

− the offensive conduct is intentionally inflicted, and causes inconvenience or damage to another person;

− although a single incident of severe harassment may be considered a form of bullying, the definition focuses on offensive actions committed repeatedly and frequently, in order to exclude the less serious situations;

− the action must always be directed against the same person or group, (usually a student), and can be perpetrated by an individual or a group;

− an asymmetry of relationship between the parts is necessary, and the targeted kid has to face serious trouble reacting or be in a powerless condition;

− the victimized student has trouble defending himself and is virtually helpless against the attackers.

Bullying can take many forms. The most commonly indicated are verbal bullying, including derogatory comments and bad names, bullying through social exclusion or isolation, physical bullying such as hitting, kicking, shoving, and spitting, bullying through lies and false rumors, having money or other things taken or damaged by students who bully, being threatened or being forced to do things by students who bully, racial bullying, sexual bullying and cyber bullying (via cell phone or Internet).

Bullying is generally divided between direct and indirect bullying[16]. Direct bullying involves a great deal of physical aggression such as shoving and poking, throwing things, slapping, choking, punching and kicking, beating, stabbing, pulling hair, scratching, biting, scratching and pinching. Social aggression or indirect bullying is characterized by threatening the victim into social isolation. This isolation is achieved through a wide variety of techniques, including spreading gossip, refusing to socialize with the victim, bullying other people who wish to socialize with the victim, and criticizing the victim's manner of dress and other socially-significant markers (including the victim's race, religion, disability, etc.). Ross (1998) outlines other forms of indirect bullying which are more subtle and more likely to be verbal, such as name calling, the silent treatment, arguing others into submission, manipulation, gossip/false gossip, lies, rumors/false rumors, staring, giggling, laughing at the victim, saying certain words that trigger a reaction from a past event, and mocking.

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[15] In the early 1970s, Olweus initiated the world's first systematic bullying research. The results of his studies were published in a Swedish book in 1973 and in the United States in 1978 under the title Aggression in the Schools: Bullies and Whipping Boys. His work on the subject continues today with the Olweus Bullying Prevention Program www.olweus.org

[16] As suggested by the USA National Center for Educational Statistics in the Results From the 2001 School Crime Supplement to the National Crime Victimization Survey, available at: http://nces.ed.gov/pubs2005/2005310.pdf

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Rigby (1996) drew a distinction between physical and psychological bullying, saying that both can be direct or indirect: e.g. direct physical - hitting, spitting, kicking; physical indirect: to have someone attacked by someone else; verbal (psychological) direct - verbal abuse; verbal (psychological) indirect – to spread rumours; non-verbal (psychological) direct – threats, obscene gestures, non-verbal (psychological) indirect - to exclude someone on purpose, get rid of objects belonging to the victim. Also, according to Rigby, it is necessary to distinguish between malignant and non-malignant bullying, the latter one not being motivated by malice, but whose effect is equally detrimental for the victim. Malignant bullying refers to the action of a person who consciously seeks to do harm in whatever form to another. Non- malignant or unintentional bullying refers to the action of a bully who is not conscious of the damage he produces and that is perpetuated by children who: most likely refer to this behaviour as teasing; are not fully aware of the consequences of what they do; implement certain behaviours to meet the expectations of the group. Another non-malignant kind of bullying is the "educational" one, which sees the bully acting to teach something to the victim, although there remains a strong imbalance of power, and the actions that are taking place are the result of intellectual arrogance[17].

Different types of bullies have been identified in the related literature (Baldry, 2004): the active/aggressive, the anxious and the passive bully. The first subjects are impulsive, with a natural inclination to violence, low empathy, and high self-esteem, generally free from pathological traits and adopt bullying behaviours mainly to be admired and gain status in the group. Anxious bullies are, instead, insecure and not very popular, with poor school performance and limited ability to concentrate. The passives bullies are "active viewers", i.e. those who do not take the initiative, but encourage bullying and do nothing to stop it. Victims are generally classified as passive, provocative or bully-victims. Passive victims do not directly provoke bullies and represent the largest group of victimized children. They are socially withdrawn, often seem anxious, depressed, and fearful, and have very poor self-concepts. According to Swearer and colleagues (2001): "The victims' behaviours and emotional states may make them vulnerable to bullying. The bullying behavior towards them may perpetuate their issues with low-self-esteem, depression, anxiety, and loneliness, which may make them increasingly vulnerable to bullying". Provocative victims (Randall 1997) represent a small group of children who often behave in ways that arouse negative responses from those around them, such as anger, irritation, and exasperation. They possess a cluster of characteristics that are likely to disrupt a classroom and lead to social rejection by peers, including irritability, restlessness, and hostility. Bully-victims represent a small percentage of bullies[18] who have been seriously bullied themselves. Bully-victims are often physically weaker than those who bully them, but are almost always physically stronger than their own victims. They possess some of the same characteristics as provocative victims (described below); they are easily aroused and sometimes provoke others who are clearly weaker than they are. Bully-victims are generally unpopular with

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[17] An interesting website offering more information about bullying, moral development and conflict resolution is the one created by the Flinders University School of Education, available at: http://ehlt.flinders.edu.au/education/DLiT/2001/KAWEBSIT/PAGES/HOME.HTM#home

[18] As will be shown analysing the results of our research, bully-victims represent a much larger part of the population when talking about cyberbullying.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

their peers, and they are more likely than other types of bullies to be both anxious and depressed.

Those who have been the targets of bullying can suffer from long term emotional and behavioural problems. Bullying can cause loneliness, depression, anxiety, lead to low self-esteem and increased susceptibility to illness (Juvonen and Gross 2005). If taken to the extreme, a strong link between bullying and suicide[19] has been found (Kim and Leventhal 2008). Many of the suicide cases connected with bullying that gained major resonance in the media saw the victims targeted also by cyberbullying actions, such as the cases of Phoebe Prince[20]. Bullying is a very widespread problem, interesting not only kids and teens but adults as well[21] , coming from different socio-economical and educational backgrounds, so that no consistent results have been reached by the research trying to identify bullying causes among these kinds of variables. More positive results have been obtained by the researchers who have been looking for correlation between bullying and family atmosphere and educational style (Bowers, Smith, Binney 1994; Baldry, Farrington, 1998; Smith, Myron-Wilson, 1998) or bullying and peer group norms (Pepler and Craig 1995, Salmivalli et all 1996).

Although cyberbullying has been sometime defined as a new form of bullying[22], investigations still need to clarify the real extent of the overlap between the two forms of harassment. For instance, in a study exploring the human dimension of covert bullying[23] (Spears, Slee, Owens, and Johnson 2008) the authors observe that while all cyber bullying is covert in nature, covert bullying is readily transferred to cyberspace.

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[19] The term bullycide refers to suicide attributable to the victim having been bullied. The term has come to prominence during the highly publicised teenage suicides in the USA in the latter part of 2010, but was first used in 2001 by Marr and Field in their work Marr, N.; Field, T., (2001), *Bullycide: Death at Playtime*, Success Unlimited.

[20] Phoebe Prince committed suicide in 2010 after being taunted and bullied for several months by her schoolmates. Even after her death, many crude comments about her were posted on her Facebook memorial page, most of which were removed.

[21] In the preface of his work on adult bullying Randall observe: "*The beginning of this book lies not so much in the academic study of aggression between adults as in the surprising finding that many adult victims are so desperate for help that they were prepared to use a hotline established for children. When my colleague Mike Donohue and I set up a community anti-bullying project and included the hotline as part of its services we were greatly surprised to find that a third of all the callers were adults seeking help for themselves because they were being badly bullied.*"

[22] "Cyberbullies are just bullies with a new weapon in their arsenal of harassment" this kind of description have been widely adopted in articles (e.g. http://teenadvice.about.com/od/schoolviolence/a/cyberbullying1.htm), websites (e.g. http://www.facebook.com/group.php?gid=113499068702102) or flyers (e.g. http://www.gov.mu/portal/sites/cybersecurity/documents/Flyer_cyberbullying.pdf) giving information about cyberbullying.

[23] Covert bullying is defined as a typically repeated behaviours which are concealed, secret or clandestine, that inflict psychological/emotional harm through indirect/ relational or social means.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The term cyberbullying indicates those forms of bullying and aggression carried out through the use of new technologies, especially mobile phones and the Internet. To send aggressive or hate text messages and e-mails, to spread photos or video with embarrassing contents or to make public private communications are among the most common forms of cyberbullying, which envisages also the creation of real 'hate-pages' to collect insults against the victim.

In one of the most quoted analysis of the forms that the phenomenon can take, Willard (2007) identifies seven categories of common cyberbullying actions:

- − Flaming: Sending angry, rude, vulgar messages about a person to an online group or to that person via email or other text messaging.
- − Online harassment: Repeatedly sending offensive, rude and insulting messages via email or other text messaging to a person.
- − Denigration (put-downs): Sending harmful, untrue, or cruel statements or gossip about a person to other people or posting such material online to damage that person's reputation or friendship.
- − Impersonation: Pretending to be someone else by breaking into his/her account or creating a fake one, and sending or posting material that makes that person look bad, get that person in trouble or danger, or damage that person's reputation or friendships.
- − Outing and trickery: Sending or posting material about a person that contains sensitive, private, or embarrassing information, including forwarding private messages or images. Tricking someone into revealing secrets or embarrassing information, which is then shared online
- − Exclusion: Intentionally excluding someone from an online group.
- − Cyberstalking: Repeatedly sending messages that include threats of harm or are highly intimidating: engaging in other online activities that make a person afraid about personal safety

However, given the newness of the phenomenon, a clear definition of cyberbullying is not yet available. More specifically, the time dimension is taken into account only in some studies, and even if included in the definition, there is no agreement on the time window that should be investigated to be able to assess that one is dealing with a bullying episode.

The following lines list a number of definitions of cyberbullying adopted from different experts and researchers on this field. The definitions differ in terms of width, and go from being extremely generalized to be much more restrictive[24].

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[24] For a more detailed analysis of the problems connected with the definition of cyberbullying is possible to consult Grigg, D.W., (2010), Cyber-aggression: definition and concept of cyberbullying, *Australian Journal of Guidance and Counseling*, 20(2), 143-156 or Ruedy, M.C., (2008), *Repercussions of a MySpace teen suicide: should anti-cyberbullying laws be created?*, North Carolina Journal of Law and Technology, 9(2), 323-335

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The COST Action "Cyberbullying: coping with negative and enhancing positive uses of new technologies, in relationships in educational settings" is a four year international research project, which aims to facilitate the circulation of knowledge about cyberbullying (from effective ways of detecting it to the best strategies of combating it), and to promote a positive use of new technologies. According to the definition adopted in this project: 'cyberbullying refers to bullying and harassment of others by means of new electronic technologies, primarily mobile phones and the internet'. It's a very wide definition, with no reference to the number of repetitions in time that the attacks may have, and the identity of those involved.

The next definition can be found on www.wiredsafety.org, a website dedicated to issues related to online security, and especially to the protection of young people, whom executive director is Parry Aftab, an American lawyer specialized in issues relating to privacy and security on the Internet.

"Cyberbullying is any kind of harassment, insults and humiliation that uses mobile, wireless or Internet-related technology in some way to hurt another child, preteen or teen. Kids or teens are on both sides of a cyberbullying episode. (If an adult is involved as either the bully or the victim it is cyber-harassment, not cyberbullying.)".

In the definition given by Parry Aftab it is possible to find a first condition detailing the identity of the attackers, essential to defining the different penalties that any aggressor can have.

Sameer Hinduja and Justin Patchin, Associated and Assistant Professor in Criminology in USA, have published numerous articles, and a book entitled 'Bullying beyond the schoolyard', on the issues of cyberbullying. The results of a study on this subject, involving 10,000 U.S. students have been reported on their web site: www.cyberbullying.us. The following are two definitions of cyberbullying they have used in their studies:

"Cyberbullying is when someone repeatedly makes fun of another person online or repeatedly picks on another person through email or text message or when someone posts something online about another person that they don't like".

"Wilful and repeated harm inflicted through the medium of electronic text".

In the definitions used by Hinduja and Patchin we find a reference to the repetitiveness of the aggression, which is a necessary condition to be able to talk about incidents of bullying. In the detection of the phenomenon, as mentioned earlier, the data can change a lot depending on whether this dimension is included or not, and on the span of time taken into account. In fact, many surveys simply ask subjects whether they ever experienced any kind of cyberbullying, so that a single experience is enough to classify the subject as involved in incidents of cyberbullying.

Another aspect yet to be taken into account is the perception of the involved adolescents of what constitutes cyberbullying, as pointed out by Vandebosch and Van Cleemput (2009). It is not an adequate method to investigate cyberbullying to just measure adolescent's experiences with a range of activities presumed to represent forms of cyberbullying, without taking into account the context in which these activities take place

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

and the interpretations of those involved (as sender or receiver). The ideal definition of cyberbullying should also be consistent with the perception of the involved kids.

As pointed out by other researchers (Mora Merchant, Ortega, del Rey and Maldonado 2010), the main difficulties encountered when trying to gain a wide understanding of cyberbullying, its diffusion and the main variables connected to it concern:

- the studies can have quite different scopes, ranging from a very general perspective with questions like "have you ever been cyberbullied?" to only a single aspect investigating for instance "cyberbullying in chat rooms" (Katzer 2009).To investigate the working hypothesis a range of different instruments is used, going from modified versions of established instruments to "self-made" questionnaires, interviews and so on, but information on their test criteria (objectivity, reliability, validity) is mostly missing.
- Moreover, even when the studies share a common definition, it is not yet clear if categories with the identical label mean the same thing in different studies (for example see Nocentini, Calmaestra, Schultze-Krumbholz, Scheithauer, Ortega, Menesini 2010).
- The time window in the questions affects not only the temporal span the respondents have to take into account, but also a different frequency categorization of the episodes (once a month, once a week etc.).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

1.3   Cyberbullying, not just bullying!

Conceptually, cyberbullying can be considered as a distinct phenomenon or as a sub-form of bullying with electronic devices (Grandiger, Strohmeier, and Spiel 2010). Several studies have already shown that being a cyberbully co-occurred with being a traditional bully (Katzer, Fetchenhauer, and Belschak, 2009; Kowalski, Limber, and Agatston, 2008; Pornari and Wood, 2010; Raskauskas and Stolz, 2007; Smith, Mahdavi, Carvalho, Fisher, Russell, and Tippett. 2008; Twyman, Saylor, Taylor, and Comeaux, 2009). According to Hinduja and Patchin (2008), off-line bullies are more than five times as likely to bully online as those who do not bully off-line. For example, youth who reported bullying others in real life in the previous six months were more than twice as likely to report bullying others on-line. Similarly, youths who were victims of traditional bullying in the previous six months were more than twice as likely to be victims of cyber bullying. However, the findings of the studies reporting co-occurrences varied greatly, and once again the differences could be accounted on the dissimilarities in samples, measurement methods, cut off scores and analytic strategies.

Transferring the characteristics of traditional bullying to bullying via electronic communication is not a straightforward process. The following issue are just a part of those that arise in this area, leaving space for debate on the trans-validity and operationalization of the principles established for a definition of bullying to that of cyberbullying (Vandebosch and Van Cleemput 2009):

- intentional character of the bullying/non-provocative behaviour of the victim: Email, chat and text messaging can be easily misunderstood, and it is possible that messages sent with no harm intended may be interpreted in a different way by the receiver.
- repetition criterion: once an information is introduced on the web, it is very difficult to control its diffusion or elimination, and although the cyberbully may have only acted once, for the victim the episode may be repeating itself constantly, each time, for instance, that another person see a specific image or text content;
- bullying only occurs in familiar social groups: it is typical of information and communication technology (ICT) to allow people to mask their identity or interact with non-familiar people. This characteristic, along with the one concerning the unsure intentionality of the damage inflicted, produce the effect of victims of cyberbullying suffering abuses from people they don't know and who may not even be aware of the consequences of their actions.
- power imbalance: Jordan (1999) associates power in the online world with having superior technological knowledge. Ybarra and Mitchell (2004) instead underline how "one's ability to keep his or her identity unknown is a unique method of asserting dominance online that conventional bullying disallows"'. When talking about traditional bullying, bullies are generally considered to have feelings of superiority and aggression causing them to pick on weaker victims (Greene 2006). It is not clear if this is also the case for cyberbullying, which has also been described as "the revenge of the nerds", indicating the possible

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

reaction of weak adolescents that get bullies in real life and use the anonymity guaranteed by the computer to counter-attack[25].

In a research investigating cyberbullying among Irish adolescents, (Conway 2010) some of the new and harmful aspects of cyber bullying have been identified. The author underline as especially relevant characteristics of cyberbullying the unique sense of isolation felt by victims of cyberbullying, the subtle nature of cyber bullying which can make it hard to identify, the reluctance of social networking sites to act on less obvious bullying, the inability to be certain about a commenter's intention because one can't see their facial expressions, and the lack of realisation among some that behaviour they perceive as "cool" could be classified as bullying. The research also identify that cyber bullying can be even more damaging where it is accompanied by the threat of a perceived over-reaction from parents or teachers to remove access to the sites themselves from the victim; thus increasing their fear of social isolation.

In fact, cyberbullying has a number of specific characteristics, which determine its most insidious effects as well as the eventual identity differences between bullies and victims in the "real" world and in the online one: The following represents the most widely acknowledged ones

Pervasiveness: if the aggression of bullies could reach a kid all the way to the house door, one's own room was usually a safe haven for victims of bullying. By sending messages on cell-phones or in Internet, however, the mobile aggression continues 'anywhere, anytime[26].' Children may be bombarded by text messages, receive e-mail, and even when not connected, be aware of the existence of defamatory web pages, or tampering of personal pages. As pointed out in a research conducted by Generation M Kaiser Institute, factors such low cost of personal computers and increasing spread of high-speed connections have allowed an increase in the use of functions as instant messaging and chat among children and adolescents. In fact, such activities have become popular enough to produce a change in the distribution of the time that children spend in front of the computer. In light of these data, it's easier to understand the relevant effect that a virtual campaign of aggression may have on a person's life. The following letters[27] testify the impact of cyberbullying pervasiveness in the victim's own words.

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[25] On her website dedicated to cyberbullying, Parry Aftab describe four type of cyberbullies: "The Vengeful Angel", usually not a victim of cyberbullying but someone who is acting in order to protect other victims, and regards himself not at all as a bully but as the defender of weaker peers; the "Power-Hungry", looking for attentions and ways to exert their authority over others, towards whom they do not necessarily held negative feelings (this kind of cyberbullies are usually also the offline bullies); the "Mean Girls", a bored or looking for entertainment kind of cyberbullies, not always female, targeting their victims of ridiculing or humiliating campaigns; the "Inadvertent Cyberbullies", sending out messages that get misunderstood or reacting to provocations.

[26] The concept of "anywhere, anytime" has been used with reference to the potentiality of mobile devices in the learning process, as explained for instance by Harris (2001).

[27] These letters have been posted on the website familiyinternet.about.com, as answers to an article, "A parent's guide to Cyberbullying", by Christy Matte, that aimed to help parent's understanding how to deal with the dangers their kids may encounter online http://familyinternet.about.com/u/ua/computingsafetyprivacy/Cyberbullyua.htm

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Where's Safe?

I have been and have seen bullying so much that I can't think of anywhere that is safe anymore. Cyber-Bullying means that the one place that should be safe isn't anymore. What everyone seems to say is the same thing over and over again 'tell someone' yet when you do half the time your told to ignore it or something like that and even when you tell your teachers they hardly seem to do anything and this infuriates me. Everywhere you go there is bullying and nothing you can do about it but tell someone and get a tough skin. It should be nipped in the bud as soon as it starts. When it happens to me (I'm 18 and it still happens all the time) I behave in a mature way, ignore it don't say anything to them to keep it going and if it doesn't stop tell someone after having a quiet word with who is doing it. Girls are some of the worst bullies by being bitchy. To those that are being called ugly and so on you're saying that your 11, 12, and 13 year old body is changing. you are still growing your body will change.

—Guest RubixCube

Those mean rotten girls

I've played on the Internet as long as I can remember, I used to love it by now I've being virtually stalked by unknown people in a game called World of Warcraft, two girls who used to be my "friends" are now talking dirty to me and swearing, calling me names and everything else. I tell my dad but he says to ignore them, how can you ignore them when something goes on everywhere you turn?

—Guest Kayla

Another very clear opinion on this point is the one expressed by Ryan Halligan's father on the webpage set up after his son's suicide, in 2003. After reporting the bullying and cyberbullying that eventually lead to the kid's death, Mr Halligan said that:

"It's one thing to be bullied and humiliated in front of a few kids. It's one thing to feel rejection and have your heart crushed by a girl. But it has to be a totally different experience than a generation ago when these hurts and humiliation are now witnessed by a far larger, online adolescent audience. I believe my son would have survived these incidents of bullying and humiliation if they took place before computers and the internet. But I believe there are few of us that that would have had the resiliency and stamina to sustain such a nuclear level attack on our feelings and reputation as a young teen in the midst of rapid physical and emotional changes and raging hormones."[28]
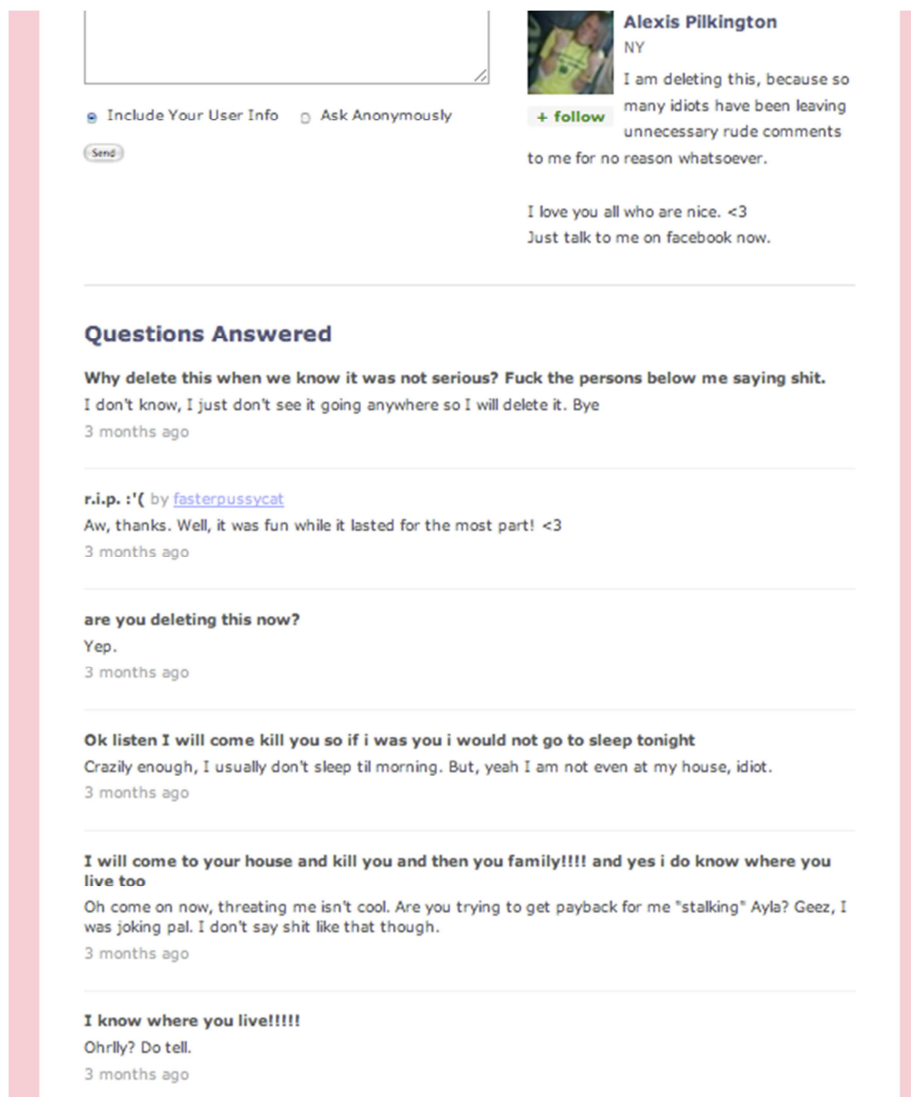
Anonymity[29]: the ability to hide behind a screen name guarantee bullies a position of perceived anonymity (only a high level of technological knowledge can enable victims to expose their persecutors). This element brings a number of consequences, such as the fact that children could feel encouraged to say things that would be reticent to express in person (Kowalski Limber 2007). Furthermore, as pointed out by Nancy Willard (2007), the

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[28] The website www.ryanpatrickhalligan.org is dedicated to teens' suicide prevention as much as bullying and cyberbullying prevention.

[29] More information on the hypnotized impact of anonymity can be found at http://networkconference.netstudies.org/2011/04/anonymity-the-default-identity-for-cyber-bullies-on-social-networks/, in an article by Victoria Jobling.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

absence of social and contextual elements such as tone of voice and body language in communications mediated by computers or phones, makes it very difficult for adolescents and almost impossible for children to imagine the effect of their actions on the victim. The ability to understand the views and emotions of others only via cognitive process is developed, in fact, precisely in the years of adolescence. Also, anonymity may put the victim in the condition of not knowing precisely who his aggressor is, and, consequently, which person he can trust.

The website Formspring.me, with its possibility to ask questions in an anonymous way, has been indicated as one of the examples of the intoxicating effect that anonymity can have on online adolescents. In fact, the very purpose of the site is to ask members questions, and they are often school peers as their profile can be linked to their Facebook or Twitter account, with the option of anonymity available for people asking questions (Bevin, 2010).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

In an analysis of damage that this kind of platform can have, especially on Lesbian, Gay, Bisexual, and Transgender Youth[30], Kraus report a snapshot of Alexis Pilkington[31] page, a girl who committed suicide in 2010, which some believe was due in part to consistent threats made by her peers on her Formspring.me and Facebook.com account. Kraus especially points out how "because of the anonymity that Formspring.me provides, adolescents have been provided with a venue in which they have no immediate consequences. For example, they can't see the reaction of the person they hurt, nor do they run the risk of being punished for it, making it easy for them to ask their peers offensive questions that they would never ask to their face."

Aggression's voluntariness: the negative effects of a cyber-joke are not always result of a purposeful action. As previously mentioned, the inability to observe the reactions of the victim may limit the ability to realize when a joke has gone too far. In some cases, threats may be the answer to a provocation, but extrapolated from the context, backfire against those who considered themselves as victim of cyberbullying, and end up becoming perpetrators, or even be the result of an improvident use of the net. In some cases, such as the now popular 'Star Wars kid', the perpetrators of the joke could hardly have imagined the extent that the phenomenon would have taken.

"The 'Star Wars kid' is an Internet phenomenon started when a fourteen year old boy from Quebec filmed himself while using a golf stick as the weapon of Darth Maul, the character of the Star Wars saga. This video was found by some fellow classmates and shared online through a peer to peer file sharing client. The boy had been molested and criticized by a growing number of peers, so much that the family decided to sue four of the original children responsible. The Star War kid was one of the most popular video on the Internet in 2003, and in 2007 had been seen almost a billion times.[32]"

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[30] As observed by Shariff (2005, 2009), sexual orientation is often the subject of cyberbullying attaks. Commenting some of the most notorious cases, such as the suicide of Hamed Nastoh or the case of David Knight (who was described as a homosexual paedophile, with invitations to an infinite audience to write insults and comments below his photograph) Sheriff points out that children and teenagers are influenced by discriminatory attitudes, hegemonic perspectives, and androcentric and homophobic forms of language that are embedded in generation of language. A more extended analysis of the impact of cyberbullying on Lesbian, Gay, Bisexual and Transgender Youth can be found in the article by Blumenfeld and Cooper (2010), LGBT and Allied Youth Responses to Cyberbullying: Policy Implications, *The International Journal of Critical Pedagogy*, 3(1), 114, 133.

[31] The case of Alexis Pilkington is taken as example in chapter 5.5 The hurt part.

[32] Information available at http://en.wikipedia.org/wiki/Star_wars_kid

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Width of reach/scope: the continuous spread of new technologies and the growing easiness of access to internet and mobile networks enable messages to be retransmitted, which exponentially increases the extent of the aggression. This characteristic is very prominent for instance when talking about Internet meme. An Internet meme is an idea that is propagated through the Web, changing and evolving along the way. It may take the form of a hyperlink, video, picture, website, or just a word or phrase and can evolve and spread extremely rapidly, sometimes reaching world-wide popularity and vanishing within a few days. A famous example of Internet meme is represented by the "Chuck Norris Facts", a collection of sentences exaggerating Chuck Norris strength or other characteristics of the actor (e.g. "Earth doesn't rotate. Is just Chuck Norris walking", or "When Chuck Norris looks at Medusa, she turns into stone"). The very recent political campaign for the election of the mayor of Milano offered a number of examples of internet meme, with the creation of fake, ironic poster of one of the candidate, fake facts accusing of absurd crimes the candidate, and so on.

Sometime, thought, the line between the benevolent joke and the cruel one is trespassed, and the protagonists of an internet phenomenon may resent the diffuseness of their fame. The impact of this characteristic of cyberbullying is well expressed by the statement of a girl, victim of an internet campaign that took the name of Moshzilla[33], on

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[33] An article by Leslie Katz (2005) *When "digital bullying" goes too far*, reporting this and other especially significant cyberbullying stories can be found at:
http://news.com.com/When+digital+bullying+goes+too+far/2100-1025_3-5756297.html

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
    A. A. 2010/11
    Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

one of the very website responsible for what was happening. The specific case refers to a photo of a concert that an American student published on his website, depicting a dancing crowd. As a joke, someone extracted the image of one girl in the act of moshing, and photoshopped her in a range of images, then publishing them online. Within a few weeks, the photos had spread to multiple message boards, some of which were attracting a quarter of a million hits and 30 responses a page. When asked about her feeling concerning the phenomenon in an interview on Moshzilla.com, a site that was set up by a mosher as a tribute to the phenomenon, the girl stated that

> *"Some of the pictures that were Photoshopped were amazing; some were pretty malicious and cruel. So even though some of those pictures I laughed at hysterically with my boyfriend, you can't help but realize that you are being humiliated across the country. In a nutshell, I feel sh***y."*
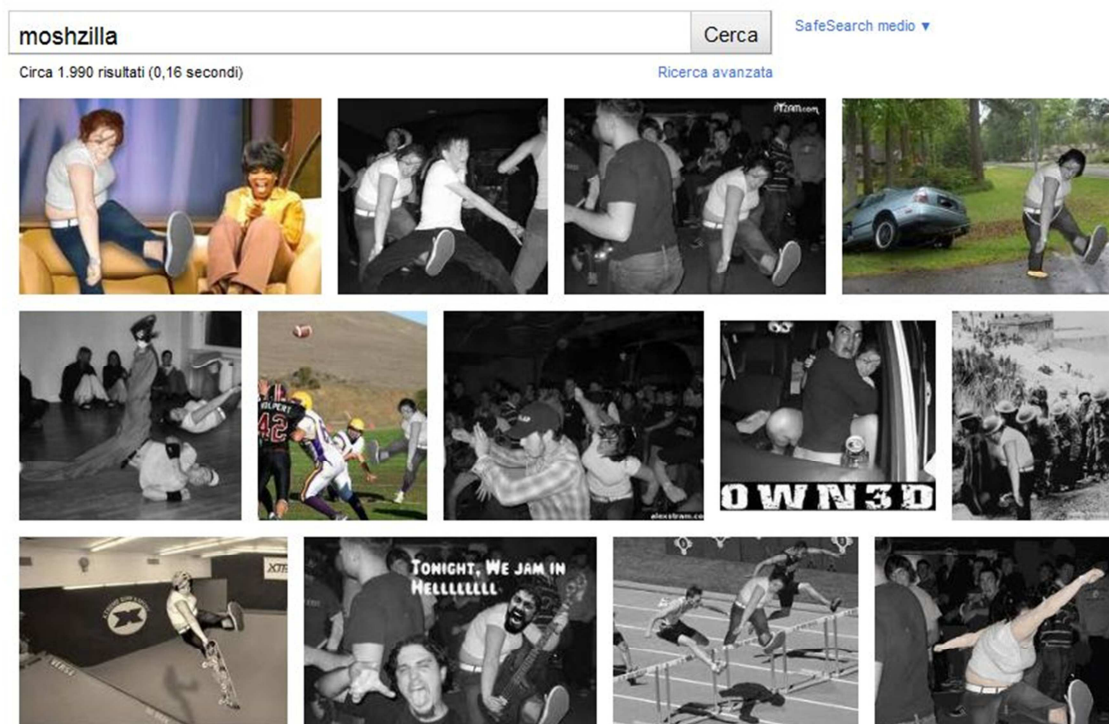
Under such circumstances, even recurring to a change of school or city may be vain, because victims can be recognized by anyone who had access to the material available online. The case of Olivia Gardner, forced to change three schools, and pursued in several cities by a hate-campaign supported on web pages designed specifically with this aim, is an example of this effect. Fortunately it is also one of the first cases in which the amplitude of the public led to the development of a massive campaign of support that has poured on the girl thousands of encouraging and supporting messages from all over America (Lelchuck 2007). The book "Letters to a bullied girl: Messages of Healing and Hope" collect a selection of the letters received by the girl, and written from people who have either been victims of bullying as well as by those who have been bullies themselves.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

2   Looking for explanations…

In order to explain such a complex phenomenon, it is useful to bring together knowledge from different fields. These kinds of episodes are not solely the result of individual characteristics of the actors, or of evil ICT characteristics and so on, but rather, reflect a complex interplay among many different factors. The combination of already known and investigated elements with the new ones linked to the specifics of constantly evolving communication media has been already recognized and underlined as it is witnessed by papers with titles such as "Cyber-Harassment: A Study of a New Method for an Old Behavior" (Beran, Li 2005). In the following lines a number of different streams of research are taken into consideration, to provide a broader setting in which cyberbullying can be inscribed.

A relevant field of research for this aim is the one investigating the characteristics of ICT and their impact on interpersonal relationships; the social cues that may enhance the probability of misbehaviour among ICT users, and more specifically among pre-teens and teens users. Another important aspect that need to be taken into consideration is the specificity of pre adolescence and adolescence changes and how they may impact on teens' behaviour. This kind of reflection is expressed by Pellegrini and Bartini (2000) when they observe that

> *"Adolescence is a period of abrupt biological and social change. Specifically, the rapid body changes associated with the onset of adolescence and changes from primary to secondary school initiate dramatic changes in youngster's peer group composition and status. Changes in peer group availability, individuals' status within groups, and peer support confront youngsters as they are entering new, larger, and typically impersonal secondary schools. One way in which peer status is achieved in these sorts of environments, especially by boys, is through the selective use of aggression and other agonistic strategies."*

To achieve an understanding of cyberbullying is therefore necessary to seek information in many different fields, and observe how the interaction of many factors can be better understood acquiring a multidisciplinary approach to the study of this phenomenon.

2.1 Man will always be man: the cross cultural research

The problems connected with the lack of a shared definition of cyberbullying and therefore the possibility of comparison between surveys and investigations both at national and international level have already been underlined. The necessity of cross-cultural studies stems not only by the desire of acquiring a clear vision of the diffusion of cyberbullying, but also from the relevance that this kind of research could have in the individuation of predicting factors and effective strategies of prevention and protection of online teens. Only this kind of analysis allow the distinction between risk factors connected with cultural specificities and elements implied in the ICT and operating whenever mobile or computer mediated communication take place.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Cross-cultural psychology is the scientific study of human behaviour and mental process, including both their variability and invariance, under diverse cultural conditions, in search for possible universals in behaviour and mental processes (Ho and Wu 2001).

Many areas of interests of cross-cultural psychology involve both adult and developmental psychology. For instance, a frequently studied area of development in cross-cultural psychology is that of morality. Rooted in the general stage theory of development of Piaget and its application to morality (1965), cross-cultural interest in moral development was stimulated by the work of Kohlberg[34] in these fields. It is an on-going research driven by the hypothesis of the existence of "natural" moral laws, and standard order of development *vs.* the idea that different cultures have different moralities. Results in this field of research did not reach an ultimate conclusion, and both view have been alternatively confirmed and disconfirmed (Berry, Poortinga, Segall, and Dasen 2002).

While highlighting the lack of research on the issue of morality in the virtual word, Jackson, Zhao, Qiu, Kolenic III, Fitzgerald, Harold and von Eye (2008) presented one of the first cross-cultural comparison of US and Chinese adolescents on the moral values, acceptability of a variety of morally questionable online behaviours, and the relationship between moral values and acceptability of online behaviours. Especially relevant for the topic of this thesis is the conclusion that to understanding most inappropriate online behaviours the more relevant factor is not the relative "lack of morality", but the extent to which moral character is rooted in peer approval and the extent to which peer group norms permit and/or encourage morally questionable online behaviours.

Benefiting of a quite long tradition of studying, school bullying has been evaluated in a number of national and cross-national research. Data has accumulated from many European countries such as Norway and Sweden (Olweus, 1978, 1996; Roland, 1989), Ireland (O'Moore and Hillery, 1989), Spain (Garcia and Perez, 1989; Ruiz, 1992), Greece (Pateraki and Houndoumadi, 2001), Italy (Genta, Menesini, Fonzi, Costabile, Smith 1996) or the UK (Boulton and Underwood, 1992; Glover, Gough, Johnson and Cartwright 2000; Mellor, 1990; Whitney and Smith, 1993). There have also been reports from Australia (Rigby and Slee, 1991; Rigby, Slee and Connolly, 1991), Canada (Bentley and Li, 1995), the USA (Batsche and Knoff, 1994; Perry, Kusel and Perry, 1988), and Japan (Crystal, 1994; Watanabe, 1993). In a very wide review of cross-national findings, Smith, Morita, Junger-Tas, Olweus, Catalano and Slee (1999) arrive to the conclusion that "pupil bullying in schools is widespread wherever there is institutionalised schooling; moreover, despite some cultural difference, many of the broad features are similar across different countries. For example, there are sex differences in the kind of bullying pupils engage, or the common

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[34] Kohlberg's theory of moral development holds that moral reasoning, the basis for ethical behaviour, has six identifiable developmental stages, each more adequate at responding to moral dilemmas than its predecessor. Kohlberg relied for his studies on stories depicting some moral dilemma, and was interested in how individuals would justify their actions if placed in similar situations. He then analysed the form of moral reasoning displayed, rather than its conclusion, and classified it as belonging to one of six distinct stages. The stages, two for each level, are so named: Level 1 (Pre-Conventional) 1. Obedience and punishment orientation (How can I avoid punishment?) 2. Self-interest orientation (What's in it for me?) (Paying for a benefit) Level 2 (Conventional) 3. Interpersonal accord and conformity (Social norms) (The good boy/good girl attitude) 4. Authority and social-order maintaining orientation (Law and order morality) Level 3 (Post-Conventional) 5. Social contract orientation 6. Universal ethical principles (Principled conscience)

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

reticence of victim to speak out and look for help". The results of this body of research indicated that bullying can take many forms, and the prevalence and significance of the behaviours may vary from one cultural setting to another (Nabuzoka 2003). Belonging to this stream of research are the studies investigating, for instance, the Japanese phenomenon of Ijime[35].
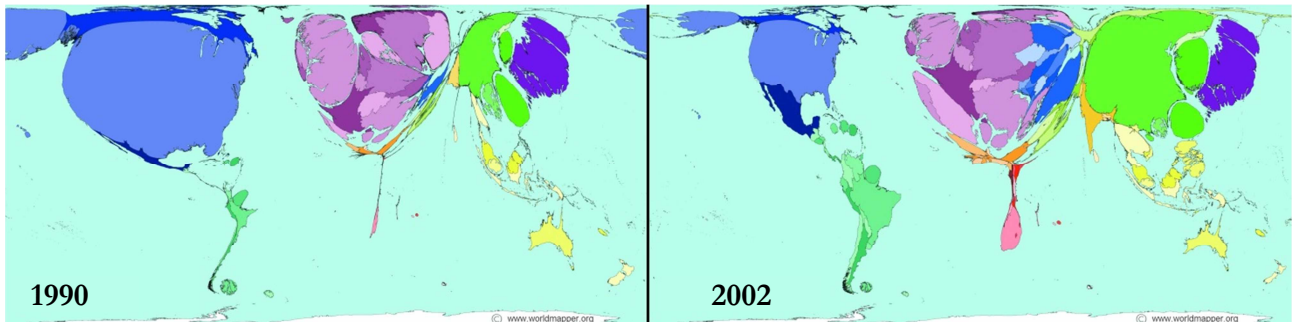
Similarly, culture may have an effect on cyberbullying behaviours. Understanding the nature and extent of cyberbullying in different cultures and countries, therefore, may help address the problem of cyberbullying in such countries and in multicultural societies.

The research on cyberbullying is slowly trying to build a comparable body of knowledge, and in the last years it has been possible to confront surveys detecting the phenomenon in many countries. Cyber bullying seems to be prevalent among varying age groups from secondary school students (Kowalski and Limber, 2007) to university students (Arıcak, 2009). Moreover, cyber bullying appears to be an international problem, as research findings from around the world suggest. For example, researchers from England (Smith, Mandavi, Carvalho, and Tippett, 2005), Canada (Li, 2006), Belgium (Vandebosch, Van Cleemput, Mortelmans, and Walrave, 2006), Sweden (Slonje and Smith, 2008), Turkey (Erdur-Baker, 2010), Italy (Saputo and Pisano, 2008), the USA (Kowalski and Limber, 2007), India (Halder and Jaishankar 2007) and China (Hong, Li, Mao and Stanton 2007) reported that cyberbullying experiences of youngsters in those countries vary in both level of engaging in cyberbullying and the act that they performed. Such research clearly suggests that cyberbullying is a rapidly emerging problem across different age groups regardless of their cultural background[36]. Still, as already mentioned, most of the surveys are based on non-comparable working definitions, while fewer studies compare international data on common definitions and questionnaires. Another difficulty arise from the fact that most of the relevant research has focused on the experiences of adolescents in industrialized nations, Western European or American in most of the cases, while much less is known about the digital safety risks of adolescents in developing countries. As pointed out by Grasser, Maclay and Palfrey (2010) this knowledge gap is particularly relevant once we observe that the differences in access to Internet and communication technologies between industrialized and developing nations are narrowing.

To give an idea of the trend in ICT diffusion's growth in developing countries is possible to confront the following maps, depicting the number of cellular subscribers and of Internet users in 1990 and 2002:

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[35] For more information on this subject is possible to refer to Akiba, M., (2004), Nature and correlates of Ijime—Bullying in Japanese middle school, *International Journal of Educational Research*, 41(3), 216-236 or to Yoneyama, S., (1999), *The japanese High School - Silence and Resistance*, Routledge, London.

[36] In the already mentioned work on Youth and Social Network Sites, boyl observe that "whether one is for it or against it, everyone knows the site and has an opinion about it. Interestingly, I have found that race and social class play a little role in terms of access beyond the aforementioned disenfranchised population. Poor urban black teens appear to be just as likely to join the site as white teens from wealthier backgrounds". This observation support the hypothesis that the use of ICT among youth and the possibility of cyberbullying emergence won't be necessarily limited to rich countries.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

"In 1990 just 12 million people had subscriptions to cellular telephones; there were 2.4 cellular subscriptions per 1000 people. At this time cellular telephones were large, expensive and had limited network coverage. The United States had the most cellular phone subscriptions, at 5 million; followed by the United Kingdom with 1 million; Japan with 800,000; then Canada and China with 600,000 subscriptions each. 138 territories in the world had less than 1000 cellular subscriptions in each. Much of the Middle East, Southern Asia, and Central Africa are not visible on this map. Many territories had no cellular telephone network.

The number of subscriptions to cellular telephones around the world increased 100 fold between 1990 and 2002. During this period the infrastructure needed to use cellular telephones spread to many parts of the world. This map of subscriptions in 2002 shows many territories which are minute on the 1990 map, such as Bangladesh, Cameroon, El Salvador and Georgia. Despite this spread of technology, the territories that were largest on the 1990 map remain the largest on the 2002 map. However, worldwide by 2002 there were 188 cellular subscriptions per 1000 people. In Taiwan and Luxembourg there were more subscriptions than residents."
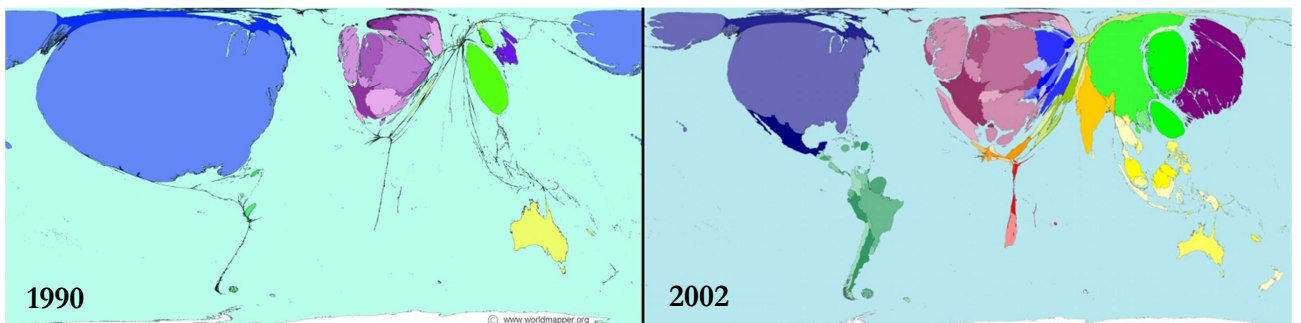
"In 1990 the Internet had existed for only 7 years; just 3 million people had access to it worldwide. 73% of these people were living in the United States, 15% were in Western Europe Internet users in 1990 were recorded in just a few other territories. Outside Western Europe and the United States, most users lived in Canada, followed by Australia, then Japan, the Republic of Korea and Israel. In 1990 there was practically no access elsewhere. Switzerland is home to the European Organisation for Nuclear Research (CERN) where the World Wide Web was developed. In 1990, 5.8 people per thousand in Switzerland used the Internet.

During the 12 years from 1990 to 2002, people using the Internet increased in number by 224 times. By 2002 there were 631 million Internet users worldwide. The distribution of Internet users worldwide has changed remarkably over just a dozen years. In 1990 Internet users were mainly

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

found in the United States, Western Europe, Australia, Japan and Taiwan. By 2002 people living in Asia Pacific, Southern Asia, South America, China and Eastern Europe were notable Internet users. A not insignificant number of Internet users are also shown to be in Northern Africa, South-eastern Africa and the Middle East."

www.worldmapper.org[37]

To begin filling up the knowledge gap in this field, Li (2008) conducted a cross-cultural comparison of adolescent's experiences related to cyberbullying. The high percentage of students involved in cyberbullying in both countries surveyed, Canada and China, lead the author to the conclusion that cyberbullying may become a serious global problem. Moreover the collected data highlight different patterns between Canadian and Chinese students' perceptions about adult intervention, and the importance of culture in designing prevention/intervention programmes.

The finding of another recent cross-cultural research (Florell, Ang, Schenck, 2010) supports the hypothesis of some general factor influencing cyberbullying phenomena. In this case, the data collected among students from the United States and Singapore indicate that there is a strong relationship between proactive aggression and cyberbullying across two different cultures. This hints at a possible universal aspect of cyberbullying where cyberbullies tend to use aggression for a goal rather than to use cyberbullying for defence.

In a recently published report Mora Merchant, Ortega, del Rey and Maldonado (2009) summarize the state of the art of the European research on cyberbullying, as part of a three years long research project aiming to develop a training manual on cyberbullying. The project was supported by the European Union and participant countries were Germany, Bulgaria, Ireland, United Kingdom, Spain, Portugal, Switzerland and Norway. While effectively allowing a representation of the situation in all of the involved countries on cyberbullying diffusion and characteristics, this study still have to face the problems connected with the comparison of data coming from non-uniformed researches. When discussing prevalence of cyberbullying, gender and age differences or the differences in the form of cyberbullying adopted by the interviewed, the results show significant variations depending on the research methodologies and the concept of cyberbullying used, while a lack of researches on the coping strategies adopted by the involved parties and the risk factors is signaled.

Commenting a similar overview of international data on cyberbullying among European country, plus Japan and South Korea, Hinduja (2011) suggest once again the hypothesis of cross-cultural variables accounting for bullying and cyberbullying diffusion among pre-teens and teens:

"the frequencies of real-world bullying in the aforementioned charts and those of cyberbullying across a spattering of European and Eastern countries seem to demonstrate that these problem behaviours occur with pretty similar regularity. While it is easy to scapegoat the media because some of what we see these days shocks our collective conventional conscience, I feel we must conceive of peer harassment as a problem with human nature rather than national origin".

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[37] Worldmapper is a collection of world maps, where territories are re-sized on each map according to the subject of interest. The source of the data is the United Nations Development Programme (UNDP), with, as underlying source the International Telecommunication Union (ITU) and its World Telecommunication Indicators Database.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

2.2 You talkin' to me? Computer mediated communication

Interpersonal communication has its rules, and we learn while growing up to interpret the messages that we receive, respect the turns of communication and express ourselves in a way that is comprehensible by the others[38]. Such abilities are developed throw the years and we become gradually more skilled in adopting differentiated communication strategies and codes depending on specific situation we are in, the results we want to obtain and who is our counterpart. When people engage in face to face communication not only the specific meaning of the words exchanged participate in the interpretative process, but also non-verbal cues strongly impact our understanding of the messages we receive[39]. The relevance that the interpretation of facial expression hold for human communication have been highlighted in different fields. Developmental psychologists realized that the attention of even just few hours old babies is captured for longer time by face-like images that random ones (Johnson et al, 1991). Prosopagnosia in a disorder caused by the damage of a specific area of the brain where the ability to recognize faces is impaired, while all other visual abilities remain intact. These are only two evidence of the specialization that human brain has developed in the analysis of facial expression. The abilities acquired during the normal development of communication skills cannot be automatically transferred to the virtual world, where a whole part of the elements we normally use to convey effective messages are missing. It is possible to hypothesize that unexpected changes in the rules of communication may lead to problems between unaware communication's partners.

In fact, the characteristics of cyberbullying previously listed are strongly influenced by the specificities of the media involved, and research on the impact that ICT have on human communication have already been developed in disciplines such as science and technology studies and communication studies. A number of technology related theories address how media technology affects group processes. Broadly, these theories are concerned with the social effects of communication media. Some (e.g., media richness) are concerned with questions of media choice (i.e., when to use what medium effectively). Other theories (Social Presence, Social Context Cues, SIDE,) are concerned with the consequences of those media choices (i.e., what are the social effects of using particular communication media). Some of the findings of such research are summarized in the following pages, as

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[38] Even before the emergence of babbling, a state in language acquisition, during which an infant appears to be experimenting with uttering sounds of language, but not yet producing any recognizable words, and that generally begins around 5 to 7 months, babies can engage in joint attention (sharing the attention of something with someone else) and in turn taking activities.

[39] In the famous book collecting part of his work, Mind, Self, and Society (1934), the social psychologist George Mead indicated as basic assumption in describing human interactions the followings: Humans interact by perceiving and interpreting the symbolic gestures from others. Through a process called "taking the role of the other," people are able to anticipate each other's responses based upon the richness of the symbolic information existing within a given social situation. In defining the nature of a situation, individuals are capable of orienting themselves to a vast constellation of social and physical objects. They internally rehearse appropriate lines of action or interaction towards the other, while suppressing perceived inappropriate actions, a process Mead termed imaginative rehearsal.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

they can help to better understand the risks the difficulties that teenagers may encounter while online communicating with their peers:

- The Social Presence Theory. Social presence theory is one of the first theories of communication media. It was developed at a time when computer-mediated communication as we know it today was yet to be conceptualized. In spite of that, the theory has influenced much computer-mediated communication research over the years. According to Social Presence Theory (Short, Williams, and Christie, 1976), social presence refers to the extent to which a medium is perceived as conveying the actual physical presence of the communicators. Thus, social presence not only depends on the communication of words, but also on a variety of nonverbal cues such as physical distances, postures, facial expressions, and the like. According to this theory, different types of media vary in their "capacity to transmit information about facial expression, direction of looking, posture, dress and nonverbal, vocal cues" (Short et al, 1976, p. 65). Therefore, from the perspective of Social Presence Theory, computer mediated communication environments lack nonverbal cues and are destined to lack emotions.

- The Social Context Cues Theory. This theory is primarily based on works by Kiesler, Siegel and McGuire. (1984) and Dubrovsky, Kiesler, and Sethna (1991). Social Context Cues Theory refers to the extent to which a medium is perceived as providing social context cues to the communicators. Kiesler et al. (1984) cautioned that computer mediated communication has "…(a) a paucity of social context information, and (b) few widely shared norms governing its use" (p. 1126). In addition, according to Dubrovsky et al. (1991), the status hierarchy of a communication exchange can regulate group behaviour if group members perceive the social order. People perceive the social order through both static and dynamic social context cues. Static cues come from people's appearance. Dynamic cues come from people's behaviour, such as frowning with unhappiness and nodding approval. According to this theory, computer mediated communication environments have the least social context cues, while face to face environments have the most social context cues in communication.

Since these theories have similarities, they are all referred to as the "cues-filtered-out" perspective (Culnan and Markus, 1987). From this perspective, nonverbal cues not only regulate social interaction, but also supply valuable information about the communicators. This kind of information is very helpful in forming impressions, assessing the ways the participants understand and reply to messages, and determining the truthfulness of the participants' communication. Accordingly, the filtered-out cues affect the communicators in three ways: regulation of social interaction, perception and impression formation, and awareness of the social context of communication. Based on this perspective, all computer mediated communication environments could be viewed as less personal and less socially emotional than face to face environments because of the constraints of perceived cues in the interaction (Liu 2002). These theories predict that the absence of informational cues within the computer mediated context would lead to more impersonal and nonconforming behaviours in comparison to face to face communications. They further predict that online communication would be less inhibited and that individuals would be more inclined to

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

exhibit aggressive behaviours. These predictions have been somewhat supported empirically (Sproull and Kiesler, 1992; Parks and Floyd, 1996)[40].

– The Social Identity model of Deindividuation Effects: SIDE (Postmes, Spears and Lea 1999; Spears and Lea, 1994) was developed as a response to the idea that anonymity and reduced presence made communication technology socially impoverished (or "deindividuated"). It provided an alternative explanation for these "deindividuation effects" based on theories of social identity (Turner et al., 1987). The SIDE model distinguishes cognitive and strategic effects of a communication technology. Cognitive effects occur when communication technologies make "salient" particular aspects of personal or social identity. For example, certain technologies such as email may disguise characteristics of the sender that individually differentiate them (i.e., that convey aspects of their personal identity) and as a result more attention may be given to their social identity. The strategic effects are due to the possibilities, afforded by communication technology, to selectively communicate or enact particular aspects of identity, and disguise others. SIDE therefore sees the social and the technological as mutually determining, and the behaviour associated with particular communication forms as the product or interaction of the two.

Another interesting subject that has recently gained the attention of the researchers and is connected with cyberbullying is the investigation of the way people utilize CMC as a relational communication channel in different cultures. For instance, a study comparing self-disclosure in bulletin board systems (BBSs) between East Asians and North Americans found that regardless of cultural membership, the amount of self-disclosure was greater in computer mediated than in face to face conversations (Kim and Raja, 1991). Kim and Raja speculated that in CMC, self-disclosure is high because the participants may perceive a relative absence of cultural constraints and thus feel less need for inhibition or self-monitoring as in FTF interactions. At the same time, it has been noted (Ma 1996) that in an intercultural CMC study, North American and East Asian partners (mis)perceived and (mis)interpreted the other's self-disclosure behaviour due to different frames of reference. In a study published in 2005, Yum and Hara addressed theoretical and practical questions regarding CMC and its impact on relationship development among people in East Asia (Japan and South Korea) and the U.S. Their results suggest some cross-cultural differences and similarities in the associations between self-disclosure and relationship qualities. For Americans, Japanese, and Koreans, self-disclosure was directly associated with online relationship development. However, the relationship between self-disclosure and trust was positive only for Americans.

While the previous theories depict a general overview of the differences between face to face and computer mediated communication, some of these aspects deserve a closer look in consideration of the stronger link they held with cyberbullying. What is discussed when

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[40] An empirical study of the degree to which emotion management factors constrain hostile types of communication in computer mediated communication is the one conducted by Bellamy, A., Hanewicz, C., (1999), Social Psychological Dimensions of Electronic Communication, Electronic Journal of Sociology, 4(1) available at the link http://www.sociology.org/content/vol004.001/bellamy.html

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

talking about the online disinhibitory effect is the facilitation of otherwise censored aggressive behaviours that computer mediated communication seems to produce. To understand the reasons of such an effect it is necessary to better observe how this kind of cognitive processes arise in everyday life, and why the lack of communication cues and the perceived anonymity so strongly impacts on our self-control system.

2.2.1 Moral disengagement

Being unable to see and perceive the counterpart of a ICT mediated interaction influences the activation of the cognitive mechanisms associated with anonymity, reducing the impact of empathy and facilitating the activation of moral disengagement strategies[41]. The impact of moral disengagement have been studied in relation with bullying behaviours, for instance by Menesini et all (2003) in a research that found that bullies emphasized morally disengaging emotional explanations, and similar results were found by Hymel et all (2005) in a study concluding that processes of moral disengagement play a potentially significant role in the development of bullying. In the case of cyberbullying, moral disengagement seems to play a double role, not only allowing bullies to justify their actions, but explaining the relevance of the counterpart invisibility in facilitating certain aggressive behaviours. As expressed by Bandura "it is in the ease of moral disengagement under the conditionals of life that the differences lie". Among adolescents, facile moral disengagers display higher levels of violence, theft, and other forms of antisocial conduct, than those who bring moral self-sanctions to bear on their conduct (Elliott and Rhinehart, 1995). At the same time, difference in the setting may heavily impact on people adoption of pro-social or anti-social behaviours, as strikingly demonstrated by Milrgram's (1974) experiments on authority[42]. In our case, the setting of interest is the double one created by the worldwide diffusion and high penetration of ICT especially among youth, by impacting not only on each single

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[41] In a recent publication on cyberbcrime, Rogers analyses how cybercriminal routinely adopt various combinations of the different techniques of moral disengagement to reduce self-censure. Hackers are reported to frequently state that their activities represent pure intellectual activities and that information should be available to anyone anyway (moral justification). Hackers may claim that they never truly damaged any files since companies have backup copies (minimization), and if the companies failed to do so any loss produced was their fault, as they should have been more prudent (attribution of blame). Another common procedure is the dehumanization of the victims, labelled as multi-national corporations or inanimate networks.

[42] The Milgram experiment on obedience to authority figures was a series of social psychology experiments, which measured the willingness of study participants to obey an authority figure who instructed them to perform acts that conflicted with their personal conscience. The volunteer subjects of the experiment, which they thought was investigating a method to improve memory and learning, were given the role of teachers, and the confederate (an actor), the role of learner. The subjects were instructed to teach word-pairs to the learner. When the learner made a mistake, the subjects were instructed to punish the learner by giving him a shock, 15 volts higher for each mistake. Before the Stanley Milgram Experiment, experts thought that about 1-3 % of the subjects would not stop giving shocks. They thought that you'd have to be pathological or a psychopath to do so. Still, 65 % never stopped giving shocks. None stopped when the learner said he had heart-trouble. Milgram's experiment included a number of variations in the setting. In general, more submission was elicited from "teachers" when (1) the authority figure was in close proximity; (2) teachers felt they could pass on responsibility to others; and (3) experiments took place under the auspices of a respected organization.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

communication exchange but also on the awareness of the resonance that whatever happens online can have. It is important to remember that the mechanism of moral disengagement are not confined to extraordinary circumstances, but operate as well in daily situations. An example of how moral disengagement may play a role in online behaviours is offered by the study of Alnuaimi, Robert and Maruping (2008) on social loafing[43] and brainstorming in CMC teams. Traditional control and coordination such as direct supervision, geographic collocation, and shared experiences are often missing in ICT-mediated communication environments. Findings indicate that diffusion of responsibility and dehumanization mediates the positive effect of group size on social loafing in brainstorming teams. Also, attribution of blame was found to have a direct negative effect on social loafing.

The moral standards that regulate everybody's life are usually acquired through the socialization processes and education that family and society provides to children. While initially imposed as external rules, these norms are normally interiorized with time, and become the guide of pro-social behaviour and the deterrent of antisocial behaviour. People develop strategies of auto-regulation that allows avoiding "bad action" thus maintaining a positive perception of the self. These mechanisms of auto-regulation, though, are not fixed and statics, but can be activated selectively in relation with specific situations. When the actions taken crush with previously defined moral standard, mechanisms of moral disengagement are likely to take place. The way in which "bad actions" are turned into morally acceptable ones have been studied and defined by Bandura (Bandura 1999) in a number of studies.
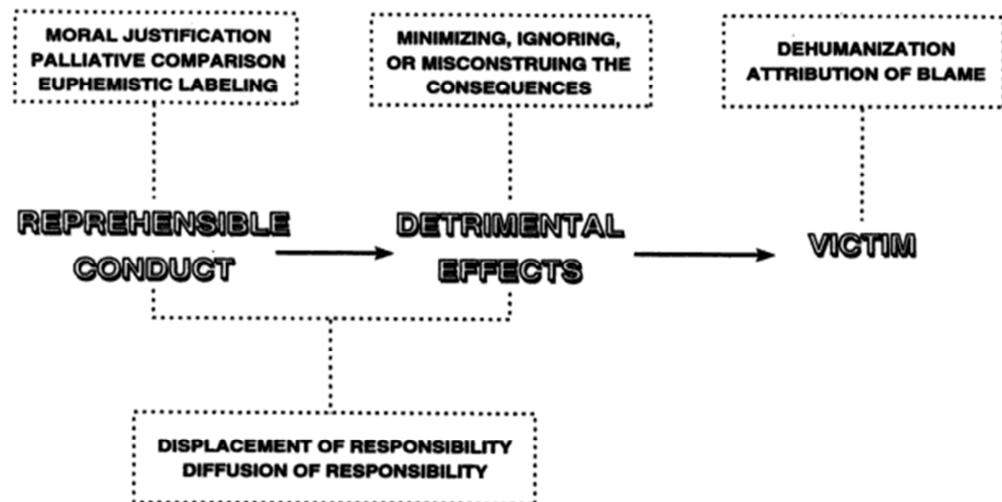
Bandura et al. (1996) stated that there were four major points in the self-regulatory system at which internal moral control can be separated from detrimental conduct. An individual can disengage self-sanctions by: 1)re-construing the conduct, 2)obscuring the personal causal agency, 3)misrepresenting or disregarding the negative consequences of the action, 4)vilifying the victims, and maltreating them by blaming and devaluing them (Bandura et al., 1996; Bandura, 1990).

Applied to cyberbullying situations, the moral disengagement strategies most adopted are:

– *Euphemistic labelling*: this very widespread mechanism is in action when a cyberbully describes his behaviour with a sentence such as "It was just a joke". Language shapes thought patterns on which actions are based. Activities can take on very different appearances depending on what they are called. "When aggressive actions are labelled in a different, kinder way, people behave much more cruelly than when they are called aggressions (Caprara 1997). Gambino (1973) analysed the language of non-responsibility, identifying different varieties of euphemistic labelling, such as sanitized language (The civilians killed in war operations linguistically converted to "collateral damage") or the agentless passive style (Bolinger, 1982) that create the appearance that reprehensible acts are the work of nameless forces rather than people.

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[43] Social loafing is defined as the tendency of some individuals to not exert as much effort in team settings as when they are working alone.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

– *Diffusion of responsibility*: "It was not my fault, we were all doing it" or "I just passed it over" are two common justifications provided by kids involved in a cyberbullying episode. What is in action here is a weakening of moral control that happens when personal agency is obscured by diffusing the responsibility for harmful behaviours. Moral control operates most strongly when people acknowledge that they cause harm by their detrimental actions. This mind-set can be well represented in the phrase "No one raindrop thinks it caused the flood". Diffusion of responsibility can manifest itself in a group of people who, through action or inaction, allow events to occur which they would never allow if they were alone. Among the studied mechanism of responsibility's diffusion there are the division of labour, when a "bad" action is subdivided into apparently innocuous smaller tasks (Kelman 1973), group decision making and collective action, because when everyone is responsible, no one really feels responsible (Zimbardo, 1995) and any harm done by a group can always be attributed largely to the behaviour of others

– *Distortion of the consequences*: "We didn't think he/she felt that way. He/she was having fun with all of us" are expressions of the stupor with which culpable cyberbullies explain their view of the situation, usually telling a story very different from the one lived by the victim. It is easier to harm others when their suffering is not visible and when injurious actions are physically and temporally remote from their effects. When people pursue activities that are harmful to others for reasons of personal gain or social pressure, they avoid facing the harm they cause or minimize it. If minimization does not work, the evidence of harm can be discredited; in all cases as long as people can represent their conduct as harmless there is no need for mechanisms of self-censure to be activated. On the other hand, when people can see and hear the suffering they cause, vicariously aroused distress and self-censure serve as self-restrainers.

– *Attribution of blame*: blaming one's adversaries or circumstances is still another expedient that can serve self-exonerative purposes. In this process, people view themselves as faultless victims driven to injurious conduct by provocation. Punitive conduct is thus, seen as a justifiable defensive reaction to provocation. Conflictual transactions typically involve an exchange of aggressive acts, and one of them can be selected as the initiating provocation that required defensive answer. Victims then can get blamed for bringing suffering on themselves (as underlined by lawyer Parry Aftab, if properly saved and taken into court, the evidence of an aggressive response of a victim of cyberbullying can turn him quickly into the culpable part). Fixing the blame on others or on circumstances, the perpetrator's actions become constructed as defensive.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

From Mechanisms of Moral Disengagement in the Exercise of Moral Agency (p. 365) by A. Bandura, C. Barbaranelli, G. Caprara, and C. Pastorelli, 1996, Journal of Personality and Social Psychology, 71.

2.2.2 The online disinhibitory effect

The elicitation of moral disengagement mechanisms can be strongly affected by a number of ICT features, that can be effectively describe as consequences of the online disinhibitory effect: a loosening (or complete abandonment) of social restrictions and inhibitions that would otherwise be present in normal face-to-face interaction during interactions with others on the Internet (Suler 2004). The effect impacts on people behaviours in two main directions:

- benign disinhibition lead to a higher propensity to communicate online in a more open, sincere way also on very personal topics, enhancing the propensity to communicate feelings and emotions;
- toxic disinhibition is the definition given to the facility that people show online to act on the impulse of disagreeable or socially unacceptable impulses.

For instance, in their early research, Siegel, Dubrovsky, Kiesler and McGuire (1986) found that group members exhibited more uninhibited behaviours, and included more inflammatory and strong expressions in CMC environments while Kiesler et al. (1984) found more uninhibited remarks in computer mediated communication than in face to face conferences, and more uninhibited remarks in anonymous environments than non-anonymous computer mediated communication environments.

In his analysis, Suler identifies six primary factors that, with different modulations of interaction, would cause the loosening of psychological barriers and lead to online disinhibition:

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

− Dissociative anonymity: Synthetized by the statement "You don't know me", this factor refers to the separation that people perceive between their actions online from their real world and identity: whatever they say or do cannot be directly linked to the rest of their lives and this helps to feel less vulnerable about opening up.

− Invisibility: This aspect may seem to overlap with anonymity, but in order to understand its specific effect, it is necessary to remember that even if one's identity is known the inability to physically see the person on the other end causes one's inhibitions to be lowered. The lack of communication cues such as tone of voice, expression, or concern for one's appearance facilitate the lowering of inhibitions. This is the same mechanism that psychotherapist apply when sitting at the back of their patients while listening to them.

− Asynchronicity: once again the effect of this characteristic of online communication goes in two directions. On one hand, the possibility to express one's opinion without necessarily having to listen to other people's answers may enhance the tendency to lash out. On the other hand, having the possibility to postpone the answer to a message gives the opportunity to formulate in a better, more articulate way what a person may intend to communicate, providing an opportunity especially for those persons with higher difficulty in expressing themselves effectively.

− Solipsistic introjection: cyberspace can be conceptualized as a transitional space between self and other. When such a process takes place, people tend to experience transference reactions, and fill up the gaps left by the ICT mediate communication about the counterpart intentions, feelings, motivations, reactions, according to one owns desires or fears.

− Dissociative imagination: the combination of the previously listed mechanism may lead to a feeling that "whatever happens online stays online", and that consequences of one's action in the virtual world does not follow the person in the real world. As it is already been noted, this is exactly the opposite feeling than that experienced by cyberbullying victims.

− Authority minimization: while online, from a somehow simplified point of view, everyone is an equal: Peers share ideas and resources and the net itself is engineered with no centralized control. In fact, what happens is a change in the factors determining one online status: while traditional cues such as gender, wealth, race, and so on, loose importance, skills in communication or technical know-how become more relevant. Under such circumstances, people may be more likely to openly speak their mind in front of someone that in real life may be perceived as "superior".

The concepts developed in connection with these cyberspace phenomena closely remind those developed by Philip Zimbardo[44] in his investigation of the dynamics that

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[44] Philip Zimbardo has performed psychological research in a number of areas, which include the 1971 Stanford Prison Experiment, a classic demonstration of the power of social situations to distort personal identities, values and morality. In the famous study, 24 normal college students were randomly assigned to be "prisoners" or "guards" in a mock prison located

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

"turn good people into evil", a process that applies very well to teens' misbehaviour online. In his wide analyses Zimbardo weights the impact and interactions of factors such as anonymity, dehumanization, conformity to the group norm and impact of the authority in determining immoral behaviours in so-called "good" people. The old adage "Sticks and stones may break my bones but words will never hurt me" becomes "Sticks and stones may break my bones, but names can sometimes kill you" when applied to the analysis of how, through skilful use of social media, nations have been able, over the years to fuel the process of dehumanization of the enemy. In this process the use of derogatory, stereotyped descriptions of the victims via words or images is a very effective tool, as it is very well described in Sam Keen's book (1986/ 2004) "Faces of the enemy: Reflections on the Hostile Imagination".

It is pretty easy to imagine the impact that a "hate-campaign" carried on via social network, for instance, and involving messages and images more or less aggressive, or humorous, may have both on the victim and on the peer group. In fact, the very same adage quoted above is recalled by many anti cyberbullying messages, and thoroughly denied.
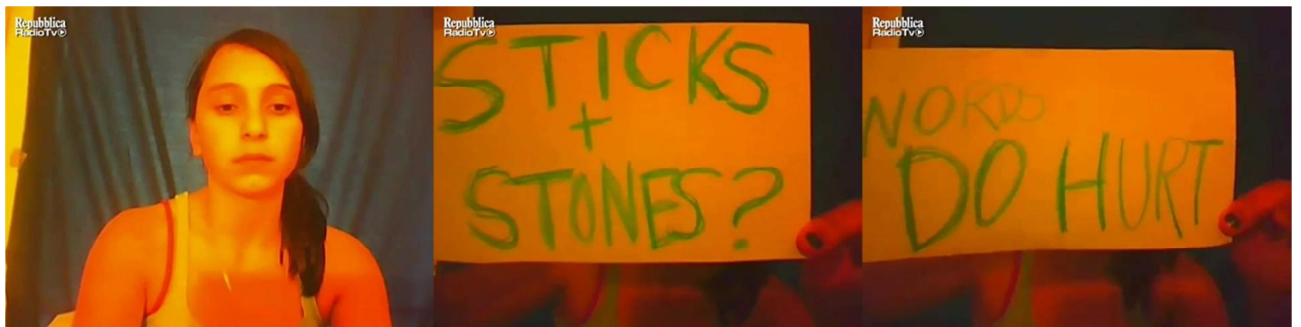
Zimbardo dedicated a lot of studies to the evaluation of the impact of anonymity on people's behaviour (Zimbardo 1969). The bottom line of his study is that when people feel anonymous, or in a situation where someone's real identity is not known, and the context seems to allow it, they can much more easily be induced in antisocial behaviours, that, in other situations, they would probably disdain. The field study conducted by Zimbardo, involving the abandonment of a car in two very different urban areas, aimed at demonstrating the ecological differences between places where anonymity ruled versus those where a sense of community dominated. While the car left in the Bronx quickly got vandalized, the one abandoned in Palo Alto resisted untouched until the end of the experiment. The vandals of the Bronx, thought, were not young offenders, adolescents belonging to some criminal gang, in all 23 recorded cases except one, all well dressed, white, middle class adults. The most relevant conclusion that Zimbardo reaches, for the aim of this research is that "certain environments convey a sense of transient anonymity in

in the basement of the psychology building at Stanford. The two week planned study into the psychology of prison life ended only after 6 days due to emotional trauma being experienced by the participants. The students quickly began acting out their roles, with "guards" becoming sadistic and "prisoners" showing extreme passivity and depression.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

those who live or behave in their midst", with all the consequences that this feeling carry, and this definition apply very well to the online environment.

Rogers (2010) signal a lack of research on the exact influence of anonymity on the etiology of criminal computer behaviour. In his analysis he observes that the hypothesis that anonymity may encourage permissiveness finds support in the social control theory[45]. The diminished fear of sanctions stemming from anonymity may account for the unexpected findings that a majority of cybercriminal convicted of deviant online behaviours would not otherwise engage in traditional criminal acts.

Some interesting input on these topics can be sought in the research developed to innovate interface design in computer communication. As explained by Donath (2001), incorporating faces into mediated environments can help the users gain a stronger sense of their community and can potentially provide better understanding of the counterpart while at the same time the lack of visual cues revealing one's race, gender, age can also be seen as one of the advantages of certain communication tools while the transmission of poor visual cues may even increase the risks of misinterpretations. When creating ICT interface, it is necessary to analyse what aspects of the faces they need to convey: personal identity, level of attentiveness, emotional expression, and find ways both to input and express these information. Discussing such problems, Donath observe how people behave more "socially" (more politely and with greater restraint), when interacting with a face. In a research on this topic, Sproull et al. (1996) found that people responded quite differently to questions posed by computers when they were presented as text or as facial displays. For instance, when asked questions about themselves via text they answered with little embellishment but when queried by a facial display they attempted to present themselves in the best possible light. The study of the impact that different interfaces (video *vs.* avatar for instance) have on the communication process could reach findings that may help better understand the dynamics developed by adolescents involved in ICT mediated relationships.

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[45] The Social Control Theory states that in general, people will refrain from deviant and criminals behaviours because of the presence of social controls. When the controls are missing or the assumed power of these controls is diminished, deviance grows. If it is highly unlikely or even impossible to correctly identify the individual responsible for a deviant behaviour, the fear of sanctions will disappear and the controls will fail. The beginnings of social control theory can be found in the early part of the 20th century in the work of a sociologist named E.A. Ross. His first book, "Social Control," was published in 1901. Ross stated that an individual's belief systems are the strongest influences on her behaviour. As such, Ross attributed family and community influences as the driving force behind social stability because these are the environments that surround and shape the individual. In relation to criminal activity, a functionalist theory of social control took root in the late 1950s. First introduced by Ivan Nye in 1958, the theory was then further developed by Travis Hirschi. Nye listed four main areas of societal control: 1. Direct - an external control where punishment is implied for delinquent behaviours and reward is granted for compliant behaviours. 2. Internal - an internal control wherein individuals are driven by their sense of conscience. 3. Indirect - an internal control driven by the individual's need to please those whom he is closest to. 4. Needs satisfaction - a combined internal-external control that makes criminal behaviour unnecessary when an individual's needs are met. For a more detailed analysis is possible to refer to Hirschi, T. (2002). *Causes of delinquency*, Transaction Publishers, New Brunswick, N.J.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

2.3 Do they know what they are doing?

Abandoning for a moment the specificities of computer mediated communication, we turn now the attention to some hypothesis proposed to explain cyberbullying more connected with the changes that adolescents undergo and the abilities they are still acquiring in those years. These kind of explanations link together findings coming from the field of neuropsychology, concerning the changes that certain areas of adolescents' brains experience, and developmental psychology, more specifically for what concern the steps that lead to the construction of an effective theory of mind. The two phenomena are closely interrelated and subtend the ability to correctly represent the impact that certain communications may have on the counterpart, or, seen from the other side, the motivations and meaning of the communications received.

In her book Nancy Willard introduce the idea that the yet uncompleted development of certain areas of the brain particularly involved in decision-making processes may have a role in the cyberbullying propensity of pre-teens and teens. Willard state that "*when teens are asked to perform tasks that involve the processing of emotions, the area of the brain that is most activated is the amygdala. The amygdala is the area of the brain that is associated with more primitive fight or flight responses. When adults process emotions, they use their frontal lobes. This means that when teens are trying to make a decision and there are emotions involved, they are even less likely to be thinking clearly, because the area of the brain that is responsible for thinking clearly is simply not fully developed or engaged*".

This reflections stems from a body of research that has been investigating the relations between the human brain and different human capacities from as far as 1600 BCE, when the Edwin Smith Papyrus[46] an Ancient Egyptian medical text on surgical trauma, was written. The international symposium organized by Henry Hecaen in September 1951 in Mondsee is often indicated as the official birth of Clinical Neuropsychology followed by the founding of the journals Neuropsychologia in 1963 and Cortex in 1964. The aim of neuropsychology is the localization of psychological function in areas of the brain. Some early attempt of association of wide and abstract concepts such as "morality" to small areas of the central nervous system[47] did not reach satisfactory results but the changes in the topics of interest over the years, and in the formations of the researchers approaching this field allowed a broadening of the phenomena of interests for this discipline. During the nineteenth century and the first half of the twentieth century, neuropsychology was practiced almost exclusively by neurologists, but after World War Two, renewed interest in the field started attracting a larger number of people trained outside the discipline of neurology including, for example, physicians in other specialties such as psychiatrists and neurosurgeons, as well as psychologists, linguists, neurophysiologists (Boller 1999)

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[46] Information available at: http://en.wikipedia.org/wiki/Edwin_Smith_Papyrus

[47] The first attempts to measure skull shape scientifically, and its alleged relation to character, were performed by the German physician Franz Joseph Gall (1758–1828), one of the first researchers to consider the brain to be the source of all mental activity. Through careful observation and extensive experimentation, Gall believed he had established a relationship between aspects of character, called *faculties*, to precise *organs* in the brain. His findings were published in *"The Anatomy and Physiology of the Nervous System in General, and of the Brain in Particular, with Observations upon the possibility of ascertaining the several Intellectual and Moral Dispositions of Man and Animal, by the configuration of their Heads",* in 1819.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

From the first official symposium, the topics of the discipline have been moving away from syndromes into a finer analysis of brain and behaviour relationships. Along with disorders of language and related functions attention, learning and memory in its various aspects and the different functions of the frontal lobes have been discussed more and more often for the past 60 years. In addition there has been in recent years a growing interests toward emotional behaviour, consciousness, perception, particularly visual perception and motivation not only in adult patients but with normal subjects, children and even new-borns as well as with animals.

The journal Developmental Neuropsychology made its appearance in 1985, while in 1995 Child Neuropsychology was launched: developmental psychology has been strongly influenced by adult cognitive neuropsychology (Vicari, Caselli 2010), but the issues approached by developmental neuropsychologists required the definition of new, specific models. This discipline benefitted of the great improvements in neuroimaging, and elected as its field the specification of the evolutionary changes in the light of both normal and pathological modifications in central nervous system (Dennis and Barnes 1994).

Scientists once thought the brain's key development ended within the first few years of life. Now, thanks to the advances in brain imaging technology and adolescent research, scientists assessed that the brain continues to develop at least into a person's twenties. Areas associated with more basic functions, including the motor and sensory areas, mature early. During adolescence, brain connections and signalling mechanisms selectively change over time to meet the needs of the environment. Overall, grey matter volume increases at earlier ages, followed by sustained loss and thinning starting around puberty, which correlates with advancing cognitive abilities. Scientists think this process reflects greater organization of the brain as it prunes redundant connections, and increases in myelin, which enhance transmission of brain messages. Areas involved in planning and decision-making, including the prefrontal cortex -- the cognitive or reasoning area of the brain important for controlling impulses and emotions -- appear not to have yet reached adult dimension during the early twenties. Sowell and colleagues utilized structural magnetic resonance imaging techniques (MRI) to examine brain maturation in a group of adolescents (twelve to sixteen years old) and young adults (twenty-three to thirty years old), the authors report both a temporal and spatial progression of post-adolescent maturation into the frontal lobes, underscoring that frontal lobe development continues into at least the third decade of life (Sowell, Delis, Stiles, Jernigan, 2001).

A cornerstone of cognitive development is the ability to suppress inappropriate thoughts and actions in favour of goal-directed ones, especially in the presence of compelling incentives: goal-directed behaviour requires the control of impulses or delay of gratification for optimization of outcomes, and this ability appears to mature across childhood and adolescence. Also the brain's reward centre, the corpus striatum, is more active during adolescence than in adulthood, and the adolescent brain still is strengthening connections between its reasoning- and emotion-related regions (Van Essen, Marder, Heinemann 2007). On a cognitive or behavioural level, the immature cognition of adolescence is characterized as impulsive (i.e., lacking cognitive control) and risk taking. Although the two words are often considered interchangeable, different processes seems to guide these behaviours' characteristics: impulsivity diminishes with age across childhood and adolescence (Casey et al. 2005; Galvan et al. 2007), and its control linearly increase with age and is associated with protracted development of the prefrontal cortex; while risk

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

taking appears greater during adolescence relative to childhood and adulthood and is associated with subcortical systems known to be involved in evaluation of incentives and affective information. Human imaging studies suggest an increase in subcortical activation (accumbens[48] and amygdala[49]) when making risky choices and processing emotional information that is exaggerated in adolescents, relative to children and adults (Ernst et al. 2005; Galvan et al. 2006).

A number of cognitive and neurobiological hypotheses have been postulated to explain why adolescents engage in risky behaviours. In a recent review of the literature on human adolescent brain development, Yurgelun-Todd (2007) suggests that cognitive development during adolescence is associated with progressively greater efficiency of cognitive control and affective modulation. An increase in activity in the prefrontal regions as an indication of maturation (Rubia et al. 2000; Rubia et al. 2006; Tamm et al. 2002) and diminished activity in irrelevant brain regions (Brown et al. 2005; Durston et al. 2006; Monk et al. 2003) are described as the neurobiological explanation for the behavioural changes associated with adolescence. This general pattern, of improved cognitive control and emotion regulation with maturation of the prefrontal cortex, suggests a linear increase in development from childhood to adulthood. In an article published in 2008, Casey, Jones and Hare suggest a neurobiological model of adolescence illustrating how bottom-up limbic (associated with reward-seeking and emotion) and prefrontal top-down control regions should be considered together. According to this model, the individual is biased more by functionally mature limbic regions during adolescence (i.e., imbalance of limbic relative to prefrontal control), compared to children, for whom these systems are both still developing, and compared to adults, for whom these systems are fully mature. In emotionally salient situations, the more mature limbic system will win over the prefrontal control system: when a poor decision is made in an emotional context, the adolescent may know better, but the salience of the emotional context biases his or her behaviour in opposite direction of the optimal action. This perspective provides the basis for nonlinear shifts in behaviour across development, due to earlier maturation of this limbic system relative to the less mature top-down prefrontal control region.

The studies investigating adolescents' brain development clearly underline the relevance of the processes connected with the maturation of the frontal cortex. Throw the years, the frontal cortex has been shown to play a major role in the performance of executive functions including short term or working memory, motor set and planning, attention, inhibitory control and decision making (Lezak, 2004; Goldberg, 2001; Luria, 1966). The process of decision making requires inhibitory function as well as attention and planning, and is mediated by a complex interaction of the frontal systems described. For example, the choice of whether or not to engage in illegal or risky behaviour requires an individual to have some facility and cognitive appreciation of the functions described above. Of

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[48] The nucleus accumbens is a collection of neurons within the corpus striatum. It is thought to play an important role in reward, pleasure, laughter, addiction, aggression, fear, and the placebo effect.

[49] The amygdalae are almond-shaped groups of nuclei located deep within the medial temporal lobes of the brain in complex vertebrates, including humans. Amygdalae perform a primary role in the processing and memory consolidation of emotional reactions.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

particular importance is the fact that each of these functions draws upon diffuses neural networks linking multiple cortical and subcortical areas which must reach an appropriate maturational level for an individual to utilize good judgment and make good decisions (Gruber, Yurgelun-Todd 2006). Anomalous functioning or incomplete development of the prefrontal cortex has been documented to impair an individual's ability to monitor and inhibit behaviour, and make effective decisions, and may therefore lead to inappropriate, impulsive behaviour (Band, Van der Molen, Overtoom, Verbaten,. 2000; Killgore, Yurgelun-Todd, 2005; Rubia et al., 2000). Further, the documentable differences in processing affective and cognitive stimuli reported between adolescents and adults underscores the likelihood that both social and emotional influences, as well as processing abilities, affect adolescent behaviour and their ability to make decisions. It follows, therefore, that if an adolescent's frontal cortex is not fully mature, he or she may make bad decisions reflective of an inability to adequately consider options and appreciate consequences.

Florell (2011) highlights the potential role played by the amygdala on cyberbullying behaviours among adolescents. As already seen, the amygdala is the part of the brain processing emotional content and mediating the creation of the memory of dangers. Moreover, the amygdala can stimulate the action of the basal ganglia, in control of motor movements, without the mediation of the frontal lobe. Florell connect these reflections with an analysis of the adolescents' decision making processes based on the Dual Processing Theory[50] (Evans 2003). In a study investigating the differences in the areas of the brain activated when either the analytic or the heuristic systems are used to process information, Goel (2003) showed that when a logically correct response was given (using the analytic system), activity was recorded in the right prefrontal cortex but when belief-based responding was observed (heuristic system), the ventral-medial prefrontal cortex was recruited. Considering what has been observed on the development of human brain, Florell conclude that adolescents more easily respond to the activation of the amygdala and the medial cortex, and tend to accept arguments based on questionable analytics if they have intuitive reason for accepting them. When an adolescent is confronted with a cyberbullying episode, and exposed to a harassing message, Florell suggests that the amygdala would directly process the message and bypass it to the hippocampus, enhancing the risk of an impulsive response.

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[50]The Dual-Process Theory of Thinking assume that there are two distinct processes of thinking that compete for control of our behaviour. Dual-system theories ascribe the origin of these dual processes to biologically distinct cognitive systems with sharply differing evolutionary histories, and a number of differing characteristics: System 1 is seen as rapid, parallel, computationally powerful, and associative or pragmatic in nature. This system is supposed to be ancient in its evolutionary origin and to share a number of its features with the cognitive systems of higher animals. Its operation is unconscious with only final products reaching conscious awareness. System 2 is by contrast slow and sequential, making demands on central working memory resources, and hence is correlated with IQ. It is thought to be recently evolved and unique to anatomically modern humans. It is associated with abstract thought and domain general problem solving and may be described as conscious and volitional (Evans, Coventry 2006).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

2.3.1   The development of a Theory of Mind

The physical development of certain areas of the brain is reflected in the growth and modifications of adolescents' cognitive abilities. To focus the attention on the development of the frontal cortex means to analyse executive functions. These functions are processes relating to self-control: control of actions, of thoughts and attentions. People with frontal damage typically show executive functions difficulties and young children show similar patterns of behaviour. The frontal lobe develops slowly through childhood (Stuss 1992), but between the age of 4 and 7 years (Thactcher 1992) is possible to observe a drastic improvement in children frontal functions. As previously observed, the typical pattern of development and the definition of a standard age of complete maturity is still object of research.

While the correlation between executive function and development of theory of mind is widely accepted, the way the two are connected is still object of discussion. On one hand having an insight into one own mental state is plausibly necessary for a certain level of self-control and theory of mind become necessary for executive functioning. On the other hand directing attention away from reality towards invisible, hypothetical mental states may require executive functioning. Thus executive functioning, and therefore frontal lobes development, and construction of a theory of mind are tightly connected, but is not clear if there is a one way relationship and which direction it would have.

With the term "theory of mind" researchers indicate the ability of a person to infer another's perspective – emotional, intellectual, or visual. Premark and Woodruff (1978) introduced the term in a seminal paper on intentionality in primates: "a system of inferences of this kind is properly view as a theory, first because such states are not directly observable, and second because the system can be used to make predictions, specifically, about the behaviour of other organisms" The question of when children can predict other people's behaviour based on beliefs and desires was not addressed until the 1980s. Until then, developmental psychology was still adopting Piaget view of the child as a profoundly egocentric individual, able to consider things only from his own point of view until about 7 years of age. Research into theory of mind was begun by two primatologists and received the first and more relevant contributions from a philosopher (Dennett 1978) and two developmental psychologists (Wimmer and Perner 1983). Since then, theory of mind has continued to be a central interest to primatologists, anthropologists and cross-cultural psychologists.

Currently (Doherty 2009) three main theories try to explain the development of children's ability to ascribe beliefs to others:

–   the Theory Theory (Morton 1980, Perner 1995) asserts that our common sense theory of mind really is like a theory, and posits a range of mental states, causally linked to each other and to behaviour and perception by fairly lawful relationships. In Perner's well-articulated account of this theory is stated that by the age of 4 children acquire a representational understanding of mind, while prior to this age they only have a theory of behaviour.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

– The Simulation Theory (Gordon 1986, Harris 1989) assumes that we use our minds as a kind of "working model" of other's people's minds, to predict what we would do if we were in their situations. Therefore, we don't have the need of building a theory. Harris's theorization rests on children's capacity for pretence: by the age of 2 children can attribute pretended properties to objects, and by 3 can imagine having mental states they not truly hold. The capacity of reasoning about other's mental state is considered to be more difficult and therefore achieved only at about 4 years of age. This theory is now mostly accepted as complementary to the Theory Theory, as the two explain different aspects of children behaviours[51].

– The Modularity Theory, assume that we have evolved a specialized part of the brain dedicated to theory of mind processing. This approach derives from Fodor's (1983) conceptualization of the mind as a modular system of informational encapsulation. This theory is able to provide explanation for some characteristic of theory of mind development (intercultural uniformity, autism) and is compatible with Theory Theory.

At the present state of research all of these theories are in evolution and is not yet clear if one will prevail over the others or they will be merged in a more global explanation.

A large body of research indicates that theory of mind develops in the first few years in typically developing children: infants attribute concrete action goals, as well as motivational states and dispositions, to agents, and they integrate a precise representation of an agent's perception with a representation of the agent's goals in their first year, while the moment of reach of a representational theory of mind, (that can be exemplified by an understanding of false belief) is still controversial, and is indicated in a span of time ranging from as early as 13 month to about 4 years of age, (Wellman, Cross and Watson, 2001; Sodian 2011) and second order metarepresentation[52] by 6 or 7 (Perner and Wimmer, 1985). However, a lack of empirical studies examining the normative development of theory of mind during adolescence has been signalled (Lerner and Steinberg 2009). Some of the first studies testing on this subject (O'Connor and Hirsch 1999, Choudhury, Blakemore and Charman 2006) reported developmental changes in adolescents' performances in tasks involving taking someone else perspective. Along with other studies (Humfress, O'Connor, Slaughter, Target and Fonagy 2002, Gonzalez Cuenca, Barajas Esteban and Fernandez Molina 2005) this research suggests that individual and contextual variables influence theory of mind in adolescence.

For instance, in a recent study, Dumontheil, Apperly and Blakemore (2010) verified the possibility that while theory of mind tasks are passed by age 4, the interaction between

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[51] For a more extensive comparison between the Theory Theory and the Simulation Theory is possible to consult the article "Folk psychology as mental simulation" published in The Stanford Encyclopedia of Philosophy (Fall 2009 Edition), available at http://plato.stanford.edu/archives/fall2009/entries/folkpsych-simulation/

[52] Metarepresentations are representations that represent other representations. Metarepresentations are ubiquitous among human beings, whenever thinking or talking about mental states or linguistic acts, or theorizing about the mind or language. Two of the most relevant results on metarepresentation are the ones exposed by Simon Baron-Cohen (1995), *Mindblindness: An Essay on Autism and Theory of Mind*, Cambridge, Mass.: MIT Press, and Daniel Dennet (1991) *Consciousness Explained*. Boston: Little, Brown and Company.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

online usage of theory of mind and executive functions continues to develop in late adolescence. In their findings the adolescent's ability to solve a task adopting another' person point of view improve with age.

Another study, by Kircher, Blumel, Marjoram, Lataster, Krabbendam, Weber, van Os and Krach (2009) investigated whether human *vs.* computer game partners evoked similar mentalizing processes in which would be signified by medial prefrontal cortex activation in people involved in playing a game. Moreover they tested if putative human game partners would trigger stronger mentalizing sing associated cortical activity as humans might simply be more engaged when facing real human partners as opposed to a computer opponent. In fact, results revealed significantly stronger signal change during the human–human interaction. The results suggest a link between activity in the medial prefrontal cortex and the partner played in a mentalizing sing task.

2.4 The Space Transition Theory

When kids bully each other using the Internet or their mobile phone, the problems arising become a concern for the families and for the educators, but sometimes their actions trespass the level of rudeness or misbehaviour, and fall into the field of illegal activities, that can be labelled as "cybercrime".

Despite an apparent acceptance of and familiarity with the term, radically different views of what cybercrime is currently co-exist (Gordon and Ford 2006). Just like it happens when approaching the cyberbullying topic, this lack of definitional clarity is problematic as it impacts every aspect of prevention and solution.

In many cases, crimes that go under the general definition of "cybercrimes" are just the "same old stuff" with a computer involved. A person could use Internet to take bets for illegal gambling or acquire pedo-pornographic pictures, or do any other activity that is already considered criminal in certain jurisdictions. In other cases, the crime is unique and came into existence with the advent of the Internet. Unauthorized access is an example: although it may be likened to breaking and entering a home the elements that comprise unauthorized computer access and physical breaking and entering are different (Littlejohn Shinder and Cross, 2008). A number of different definition are now concurring to specify the precise characteristics of cybercrime, to help the understanding of its dynamics, causes and consequences, each one bringing into consideration the aspects most relevant from the point of view of the various field of expertise involved.

At the Tenth United Nations Congress on the Prevention of Crime and Treatment of Offenders (1995), in a workshop devoted to the issues of crimes related to computer networks, cybercrime was broken into two categories and defined thus:

a. Cybercrime in a narrow sense (computer crime): Any illegal behaviour directed by means of electronic operations that targets the security of computer systems and the data processed by them.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

b. Cybercrime in a broader sense (computer-related crime): Any illegal behaviour committed by means of, or in relation to, a computer system or network, including such crimes as illegal possession [and] offering or distributing information by means of a computer system or network.

These definitions are complicated by the fact that an act may be illegal in one nation but not in another. More concrete examples of cybercrimes include:

- Unauthorized access
- Damage to computer data or programs
- Computer sabotage
- Unauthorized interception of communications
- Computer espionage

In a work aiming at exploring the extent of computer-based crimes in order to provide a clearer definition of it, Gordon and Ford describe cybercrime as: "any crime that is facilitated or committed using a computer, network, or hardware device". The broad range of behaviours that could fall under this label reminds closely to the cyberbullying definition adopted in some of the studies on the subject, such as the one guiding the Coast action previously presented. In their analysis, Gordon and Ford divide cybercrime into two distinct categories: Type I Cybercrime, which is mostly technological in nature, and Type II Cybercrime, which has a more pronounced human element. Type I cybercrime has the following characteristics:

- It is generally a singular, or discrete, event from the perspective of the victim.
- It often is facilitated by the introduction of crimeware[53] programs such as keystroke loggers, viruses, rootkits or Trojan horses into the user's computer system
- The introductions can, but may not necessarily be, facilitated by vulnerabilities (in the victim's system).

Examples of this type of cybercrime include but are not limited to phishing attempts, theft or manipulation of data or services via hacking or viruses, identity theft, and bank or e-commerce fraud based upon stolen credentials.

Type II cybercrime includes, but is not limited to activities such as cyberstalking and harassment, child predation, extortion, blackmail, stock market manipulation, complex corporate espionage, and planning or carrying out terrorist activities online. The characteristics of Type II cybercrime are that:

- It is generally facilitated by programs that do not fit under the classification of crimeware. For example, conversations may take place using IM (Instant Messaging) clients or files may be transferred using the FTP protocol.
- There are generally repeated contacts or events from the perspective of the user

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[53] Crimeware is defined by these authors as a software used (directly or indirectly) in the commission of a criminal act; not generally regarded as a desirable software application from the perspective of the computer user; 3. and not involuntarily enabling the crime.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

A different but very comprehensive and recognized cybercrime classification is the one provided by Wall (2001). In his work, Wall includes four categories of offending. The first category is cybertrespass, encompassing the crossing of invisible yet salient boundaries of ownership online, primarily by computer hackers. The second and related category is cyberdeception and theft. This form of computer crime includes all the various criminal acquisitions that may occur online, including digital piracy, fraud, and identity theft. The third category includes cyberporn and obscenity. This category recognizes deviant but not necessarily illegal content, such as traditional pornography, along with sexual services and child predation. The final category of crime within Wall's typology is cyberviolence, representing the distribution of a variety of injurious, hurtful, or dangerous materials online. This includes online harassment and stalking as well as more serious acts of terror.

If we confront the categories of cybercrime above listed with the different forms of cyberbullying individuated by Willard, it easy to identify how the two classification converge, and how cyberbullying someone may involve acts of cybercrime. For instance, flaming, denigration and cyberstalking all imply behaviours that could fall into the cyberviolence category, impersonation and outing and trickery involve some kind of cyberdeception, and at the same time may include the production of cyberporn and obscenity. This last case is an especially impressive case of the gravity of the legal consequences effects that an "innocent-looking" jokes may have. In Italy, for instance, the laws concerning the production and detention of pedo-pornographic materials states that:

> *"the dispositions of articles 600 ter and 600 quarter apply even if the pornographic material is realized using virtual images of minors of eighteen years of age or parts of these, but the penalty is reduced by one third. With the terms virtual images it is meant images created with graphic techniques that are not associated in whole or in part to real situations, but that the quality of representation makes look like real situations that are not real"*

Art. 600-ter and 600-quarter Codice Penale (Pornografia minorile)

The result of this article is that even if the person publishing the images is minor of age, and even if the images do not represent real situation but are the result of an elaboration, when the persons depicted are of an age inferior of eighteen, the publisher may be denounced for pedo-pornography. Moreover, as specified in the following article, some case do not need a request of action from the victim for the investigation to start, if the offence have been carried out against a minor of eighteen years of age:

> *"[...] shall be punished with imprisonment from six months to four years anyone who, with repeated conducts, threaten or harass someone in such a way as to cause a serious and continuing state of anxiety or fear, or give rise to a well-founded fear for his safety or for that of a next of kin or person bound to the subject by loving relationship or to compel the subject to alter his lifestyles. [...]*
> *The penalty is increased by up to half if the offense is committed against a child, [...].*
> *The crime is punishable on complaint of the victim. The deadline for bringing the lawsuit is six months. We shall, however, proceed ex officio if the act is committed against a minor or a person with disabilities [...]"*

Art. 612-bis Codice Penale (Atti persecutori)

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Since the 1990s, academics have observed how the cyberspace has emerged as a new locus of criminal activity (Thomas and Loader 2000). The data of the 2010 Internet Crime Report published by the Internet Crime Complaint Center[54] reveal a steady increase in cybercrime rate in US in the last 10 years, with 303,809 complaints received in 2010, averaging 25,317 per month.

The need for a better understanding of cybercrime also leads to the need for a theorization, which is able to include the new specificities of cybercrime in the explanation of criminal behaviours. Closely related to the issue of cybercrime definition, this necessity has compelled criminology researchers to formulate new hypotheses on the mechanisms subtending the diffusion of cybercrime. A great deal of criminological research has attempted to understand and identify the causes of victimization using the lifestyle/routine activities theory. This preeminent theory suggests that victimization is most likely when individuals are placed in high risk situations, are in close proximity to motivated offenders, appear to be attractive targets to criminals, and have no real guardian. But critics have been moved to this approach, pointing out that important differences remain between virtual and terrestrial world, limiting the routine activity theory usefulness (Yar 2005). This point of view regards cybercrime as a new and distinctive form of crime, requiring specific research and theorization[55].

Moreover, as stated by Jaishankar (2007) "*a new, radical discipline named cyber criminology is the need of the hour to explain and analyse the crimes in the internet*". His "Space Transition Theory", has been formulated for this aim, and it is possible to find in it an echo of many of the findings of the research developed in the fields we have explored. The theory stems from the reflection that general theoretical explanations of crime were inadequate when applied to cybercrime. The Space Transition Theory aims to explain the differences in people's conforming and non-conforming behaviour when moving from physical space to cyberspace.

The postulates of the theory are indicated by Jaishankar as follow:
- Persons with repressed criminal behaviour (in the physical space) have a propensity to commit crime in cyberspace, which, otherwise they would not commit in physical space, due to their status and position.
- Identity Flexibility, Dissociative Anonymity and lack of deterrence factor in the cyberspace provides the offenders the choice to commit cyber crime
- Criminal behaviours of offenders in cyberspace are likely to be imported to Physical space which, in physical space may be exported to cyberspace as well.

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[54] The Internet Crime Complaint Center (IC3) was founded in 2000 as a joint effort between the National White Collar Crime Center (NW3C)/Bureau of Justice Assistance (BJA) and the Federal Bureau of Investigation (FBI) as a conduit for law enforcement to share information and pursue cases that often span jurisdictional boundaries.

[55] For a more in detail analysis of cybercrime theories is possible to refeer to Bossler, A. M. Holt, T. J. , (2007) "Examining the Utility of Routine Activities Theory For Cybercrime" Paper presented at the annual meeting of the American Society of Criminology, Atlanta Marriott Marquis, Atlanta, Georgia

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
    A. A. 2010/11
    Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

- Intermittent ventures of offenders in to the cyberspace and the dynamic spatio-temporal nature of cyberspace provide the chance to escape.
- (a) Strangers are likely to unite together in cyberspace to commit crime in the physical space.
- (b) Associates of physical space are likely to unite to commit crime in cyberspace.
- 6. Persons from closed society are more likely to commit crimes in cyberspace than persons from open society.
- 7. The conflict of Norms and Values of Physical Space with the Norms and Values of cyberspace may lead to cybercrimes.
- Applied to the cyberbullying issue, the theory highlight some of it possible causes, connected with the impact that ICT mediated communication has on human behaviour. More specifically, this theory affirms that the identity flexibility allowed by the use of nicknames, the perceived anonymity, the consequent phenomenon of dissociation and the lack of deterrents enhance the motivation to implement online anti-social behaviours.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

3.   What is happening around the world

In her book, Shariff (2009) presents a set of cases of cyberbullying discussed in the courts of China Japan, South Korea, India, Canada and US. The analysis of the cases mainly from a juridical point of view provide an image of the perception of what is considered to be cyberbullying in the different countries, and how the authorities are dealing with it. Moreover, this widespread number of examples, although not representing a systematic collection of data, suggests the opportunity of investigating cyberbullying in all countries where ICT is available to the youth. To give an idea of the scale of this phenomenon, some of the most recent surveys investigating the problems related to the diffusion of new technologies, bullying and cyberbullying, are presented below. Unfortunately, the lack of a shared definition and of universally recognized standards makes the data difficult to compare. These studies have been conducted mainly in countries where the technology penetration is high, in particular the U.S. and UK, but the growing attention on these subjects is witnessed by the number of newspaper articles, research projects and interventions to prevent or control cyberbullying flourishing all over the world.

3.1 The surveys

The following are the most interesting results obtained by a number of surveys investigating the phenomenon of cyberbullying. The research differs in many aspects, including the definition of the phenomenon investigated, the sampling procedures and consequently the way the questionnaires were administrated. As observed by Grandiger, Strohmeier and Spiel (2010) the most often used method to identify cyberbullies is via self-assessments. Self-assessments offer information on subjective experiences which are privately felt and which need not necessarily be verified by other informants (Graham, Bellmore, Juvonen, 2003). This means, at the same time, that all of the surveys presented may encounter the problems of under/over-estimation of the phenomena related to self-assessed evaluations. Within self- assessment two approaches can be distinguished: global item vs. specific items assessment. While the global item measurement directly asks about the involvement in bullying during a certain period of time (e.g., during the past couple of months), the specific items measurement asks for the involvement in several concrete behaviours (e.g., hitting, teasing, etc.) considered major components of the bullying construct.

As mentioned when considering the necessity for cross-cultural studies in this field, in 2009 a "**Transnational synthesis of the country report**" was published online by the members of the CyberTraining Project. The report gave a state of the art of research in terms of the cyberbullying phenomenon. Despite the already mentioned difficulties encountered by the researchers which were connected with the differences in the data collection, the report offers a very complete overview on the most recent findings in

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Germany, Portugal, the UK, Ireland and Spain, organized around the most relevant topics on these issues.

The main findings include:

– All of the considered countries have very high ICT access rates. It is evaluated that 95% of the children have access to mobile phones, and 80% to Internet.

– The most common definitions of cyberbullying adopted are based on Olweus' definition of bullying, adapted to ICT. Sometimes in non-English speaking countries other terms may be used to refer to the same phenomenon.

– The figures of the cyberbullying diffusion show important differences, but apparently most of them can be ascribed to the measurements used to assess cyberbullying. More specifically, the following figures are reported:

o In **Germany** Katzer and Fetchenhauer (2009) made a study of 1.700 students in grades 5-11 where they focused on bullying in chat rooms. The outcomes (using a modified version of Olweus' Questionnaire) revealed that 28% of the pupils who visit chat rooms on a regular basis admit that they had socially manipulated other visitors of chat room at least once, 34% had insulted, offended and bad-mouthed others, and 15% had threatened or blackmailed others.

o Jäger, Fischer and Riebel (2007) conducted an online study on 1.997 students in grades 1-13. Students were asked for the frequency of experiences of direct mobbing and cyber mobbing in the last two months. Nearly 20% of the students reported that they had been victims of cyber mobbing at least once. 4% reported that they had been victims "very often".

o In the **UK**, Peter Smith team (Smith et al., 2008) conducted two surveys with students aged 11–16 years involving firstly 92 pupils from 14 schools, then 533 pupils from 5 schools, to assess the generalizability of findings from the first study, and investigate relationships of cyberbullying to general internet use. The research stated that 6.6% suffered frequent victimization using ICTs (two or three times a month, once a week or several times a week); 15.6% only once or twice; 77.8% (never).

o In **Ireland**, Corcoran, Connolly, and O'Moore (2008) examined the prevalence and impact of cyberbullying among a sample of 946 students aged 12-16 years. 10.9% of the students reported having been the victim of cyberbullying, and 6.5% admitted that they had cyberbullied others.

o Also in Ireland, Microsoft survey (2009) found that 22% of the sample had experienced bullying online (40% frequently). 52% of the teenagers surveyed felt the internet made it easier to bully.

o In **Spain**, a Defensor del Pueblo-UNICEF study (2006) surveyed 3000 students between ages 12-16. This study did not focus exclusively on cyberbullying but it included three questions concerning cyberbullying. The

Università di Milano-Bicocca − Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

results stated that 5.5% considered themselves victims (5.1% less than once a week and 0.4% more often than once a week) and 5.4% declared that they had abused others (4.8% on isolated occasions and 0.6% on a frequent basis).

o In another study (Ortega, Calmaestra and Mora-Merchán, 2008) 22.8% of the sample group were involved moderately or occasionally (5.7% as perpetrators, 9.3% as victims and 7.8% as victimized perpetrators), while 3.8% of the students were involved severely (1.7% as perpetrators, 1.5% as victims and 0.6% as victimized perpetrators).The study was carried out using a sample group of 830 secondary students aged between 12 and 16.

o In 2008 the team led by Prof. Ortega again gathered data in Andalusia using a sample group of 1671 students (12-13; 14-15; and 16-17 years). Early results (Ortega, Elipe, Mora-Merchán, Calmaestra, and Vega, 2009) showed that 4.2% of the sample group said they had been victims of cyberbullying by cell phone (3.7% occasionally and 0.5% severely), whereas 7.5% had been victimized via Internet (6.2% occasionally and 1.3% severely). Similar percentages were revealed with regard to perpetrators. 5.1% of the students interviewed said they had abused their companions by cell phone (4.2% occasionally and 0.9% severely). In contrast with the figures for victims, however, the percentage of perpetrators via Internet was lower than that corresponding to cell phones. Only 4.6% of the students interviewed said they had abused their peer using Internet (3.6% occasionally and 1.0% severely).

− When assessing gender differences in the field of cyberbullying, show significant variations depending on the research methodologies and the concept of cyberbullying used. Variables such as the kind of cyber behaviors taken into account can modify the results when comparing the online actions of girls and boys, however most of the studies agreed that girls were more likely to be the victims of cyberbullying than boys. (Ortega, Calmaestra and Mora-Merchán, 2008; Smith et al., 2008). This is true especially when we consider non-frequent cyberbullying (Noret and Rivers, 2009).

− According to the report, only small data has been collected for what concern age and cyberbullying, and the existence of a correlation is not yet clear.

− Two main model of cyberbullying categorization are identified by the comparison of the research, one based in the channel used (IM, email, web sites, etc.), the other based on the nature of aggression (insults, social exclusion, threaten, etc.). The identification of the most diffused form of cyberbullying is clearly affected by the adoption of non-comparable measurements.

− When assessing the relation between traditional bullying and cyberbullying, the results of the first investigations on this topic seems to highlight a high stability between experiences and roles between both phenomena.

− This cross-cultural study explicitly define as still undeveloped the investigation over the risk factors connected to cyberbullying, and report the results of only one German study

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

– For what concern the consequences of cyberbullying several studies are taken into consideration, addressing the evaluation of cyberbullying among the victims (depending on the kind of episode it is evaluated as less or more serious than traditional bullying) and the psychological consequences of victimization, such as increase of neuroticism, or reaction of anger, or other unpleasant feelings.

The research published by Li (2008) **A cross-cultural comparison of adolescents' experience related to Cyberbullying** represents one of the few studies approaching the topic of cyberbullying with a specific focus on cross-cultural analysis. The answers of a Canadian and Chinese group of students to a common questionnaire allowed the author to highlight the high diffusion of cyberbullying among both populations. The research topics included as well the relation between traditional bullying and cyberbullying, and the propensity of students to seek help among relevant adults, when involved in this kind of episodes. The results demonstrate similar patterns in the behaviours related to traditional bullying but some different patterns in the behaviours related to cyberbullying, as well as in the perception of adult's intervention among the two population. The questionnaire was submitted to a sample of 157 Canadian students, going from 12 to 15 years of age, and 202 Chinese students aged between 11 and 14. In this study a wide definition of cyberbullying was provided to the respondents, with no reference to specific behaviours or time windows, therefore the answers provided only indicate the presence of any kind of episodes, with a whose frequency is distribute on a undefined span of time.

In the following pages a sample of national surveys investigating the phenomena are provided, each approaching the investigation with slightly different approach, but unanimously confirming the presence of cyberbullying among the interviewed populations.

The results of the Italian research "**Cyberbullying: exploratory investigation on the phenomenon of online bullying**", show a spread of cyberbullying in line with European rates, and significantly smaller when compared to those identified by research conducted in North America. More specifically, 34% of secondary school students and 39% of high school students claimed to know someone who had been the victim of cyberbullying. 14% of secondary school students affirm that they had been victims of some cyberbullying, while in high school there was a gender difference, with 26% of the girls compared to 6% of the boys declaring to had suffered a cyberbullying attack It is important to note that, in this survey, claiming to have suffered an episode of cyberbullying it is enough to enter the category of victims. The same criterion was used to identify the bullies, which are assessed at 15% (males) and 10% (females) among the secondary school students, and 15% (males) and 19.2% (females), among high school. A following question investigated the frequency of bullying, using as timing reference "the beginning of the school. " Given the fact that the questionnaires were administered between February and May, this is a time window quite wide, and relatively variable between schools. Mostly, the media used by the kids is the mobile phone, while cyberbullying over the internet does not seem to be widespread yet among the students of the sample group. The research was carried out by 'ISOF (Sardegna Training Institute) in 2008, involved 1047 children, students of middle and high schools from different regions of Italy, and represents one of the first attempts to detect the phenomenon of cyberbullying on the national territory. The research was included in the 9th National Report on Children and Teen-Agers - EURISPES - Telefono Azzurro. The questionnaire, based on the Olweus questionnaires, was administered to the kids

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

during school hours, and was designed to investigate both the phenomenon of bullying of cyberbullying. Before completing the questionnaire, children were given a definition and an explanation of what was meant with the terms bullying and cyberbullying. Replicating the standard way of investigation used for the bullying phenomenon, it was asked to the students if they knew of people involved in incidents of cyberbullying, as well as if they had ever been victims or perpetrators of such behaviour.

Summarizing the main findings of the survey "**Electronic bullying among middle school students**" shows that 11% of the American students interviewed have suffered electronic bullying at least once in recent months (victims only), 7% indicate that they have been involved both as bullies and as victims, and 4% acted electronic bullying at least once in the previous two months (bullies only). The more common methods of electronic bullying (as indicated both by the victims that the perpetrators) include the use of instant messaging, chat rooms and e-mail. Almost half of the victims of electronic bullying did not know the attacker's identity. The data also highlight gender differences in the frequency of incidents of electronic bullying, with the number of girls involved higher than that of males. The research was conducted by Kowalski and Limber among 3767 students of primary and secondary schools in the south-east and north-west of the United States. This investigation, like the one previously presented, aimed primarily at providing more information on the diffusion of this phenomenon among young people, focusing on the age groups and gender differences, and on the kind technologies and types of cyberbullying most used. Again, during this research, the detection of cyberbullying was flanked to the administration of the Olweus bullies / victims questionnaire. Respondents were given the standard definition of bullying in the Olweus questionnaire, and on the basis of this, the definition of cyberbullying as "bullying through e-mail, instant messaging, in a chat room, on a website, or through a text message sent to a cell phone". In this study, the involvement in incidents of cyberbullying is also defined according to a time criteria. It was asked to the students if they were involved in incidents of cyberbullying, as victims or as bullies, in the last two months. The respondents were then divided into four groups: those who had not been involved even once in the last two months in a case of cyberbullying, and, among those declaring to having been involved, the group of victims, bullies and those who were both victims and bullies. The analysis conducted highlight correlations between gender and age and frequency and types of cyberbullying.

The "**Teens and Cyberbullying**" research was sponsored by the National Crime Prevention Council, and involved 824 children between 13 and 17 years, selected among the households of the Harris panel online. This research was aimed not only at the detection of the frequency of cyberbullying incidents, but intended as well to explore the definition of cyberbullying as understood by adolescents, the emotional and behavioural responses to such incidents, and the strategies that children considered more effective in counteracting it. Among the children interviewed, 43% had experienced some form of cyberbullying in the last year. The incidence of cyberbullying is higher among girls than boys, and among boys and girls of 15 and 16 years. More than half of the kids in this age group reported at least one incident of cyberbullying in the last year. Of these, ¾ discovered who the author of the acts of bullying was. The responsible person is most often a friend, or in any case, someone known at school. 23% did not know the identity of the bully. The emotions experienced by the victims of cyberbullying were evaluated: 56% reported anger, 33% felt hurt, 32% were embarrassed, and 13% reported that they had

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

been afraid. According to the kids, the cyberbullies act in such a way because "he thinks it is fun" (81%), "simply does not like the other person" (64%), "considers the victim a loser" (45%) and "do not consider their actions particularly serious "(58%). . In this case, the information collected included the diffusion and use of technologies (Internet and mobile phones) among the youth interviewed. In particular, 78% of the kids stated that they have been using the Internet for three years or more. 80% had the used Internet "yesterday". Approximately 59% of the interviewed between 13 and 15 years, and 74% between 16 and 17 years declared to possess a mobile phone. This data highlights a difference with the Italian population, in which the spread of the mobile is predominant compared to that of the Internet.

The research "**Cyber Bully**" , conducted by Caravan in 2006, was commissioned by the non-profit organization Fight Crime: Invest in Kids, which aims to "take a hard-nosed look at research on what keeps kids from becoming criminals and put that information in the hands of policy-makers and the public. "(Www.fightcrime.org). The results taken into consideration in this paper are those relating to the adolescent sample, and are available on the website along with those of the sample of pre-adolescents. The sample consisted of 512 boys aged between 12 and 17 years, residents of privately owned homes in the U.S. mainland, interviewed by telephone. The report simply presents the questions and the data of the answers, without further analysis or comments. Again, data related to the diffusion of technology were collected: 90% of respondents use the Internet, and in a typical day, 60% uses it for more than an hour, while 30% for less than an hour, while 69% use the mobile phone daily. The kids were are asked to report incidents of cyberbullying occurred in the last year, a wide enough time window, compared with two months taken into account by Hinduja and Patchin. Among the youth in the sample, 23% received hostile messages once or twice in the last year, 13% three or more times, 64% never, 72% knew who sent the message, 26% did not, and 10% have sent a bad, aggressive or threatening message to someone else in the last year. The analysis of significant differences of distribution, on the basis of age group, gender, area of origin and race is also available.

Putting you in the picture is a research focused on the phenomenon of cyberbullying via mobile phone. National Children's Home, now called Action for Children, is an association that, since 1869, try to help children in difficulty in the UK but also in South Africa, the Caribbean and Latin America, has promoted this research in collaboration with the mobile operator Tesco Mobile. The results obtained showed that in 2005 20% of children indicated that they have been the victims of some form of bullying or threats via email, internet chat rooms or text messages. With regards to issues more specifically related to the use of mobile phones, 10% responded positively to the question: "Using their mobile phone camera, has anybody ever taken a photograph of you in a way that made you feel uncomfortable, embarrassed or threatened?" 73% of the young people who declared that they had been bullied or threatened reported to know their persecutor, while in 26% of cases this person remains unknown. The 11% admitted to have sent to someone else an aggressive or threatening message, while the 87% affirms to have never done such a thing.

A total of 770 British children between 11 and 19 years were interviewed, but information regarding the criteria of selection of the sample, or the administration of the questionnaires is not reported. The research reports the statistics on the diffusion of mobile phones, as well as the prediction that in 2007 nearly 8 million British teenagers will be

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

owners of a phone that can make photos and videos. Given this premises, the research aimed at making an initial collection of data on the diffusion of a phenomenon considered in rapid growth. Once again, the used definition is a very broad one, lacking any reference to the temporal frequency of the attacks suffered by individuals.

Also the data reported by the website **www.beatbullying.org** was collected on a sample of 2396 British children between 11 and 19 years, who voluntarily participated in the online research. Beatbullying is a charity dedicated to the prevention and the support for victims of bullying, through initiatives often involving the kids in first person. The data reported on the website shows that 47% of the respondents have suffered some form of text, photo message, video message, email, chat room, web page or online bullying, while 29% of 11 to 19 years old have been threatened or harassed using mobile phones. 29% of those surveyed said they had told no-one about being cyberbullied. 11% admit to have sent a bullying message to someone else. 73% of those who have received a threatening message knew the bully, while 26% said that the message came from an unknown person. 6% of children reported to have been the victim of "happy slapping[56]"and 35% of young people has witnessed an episode of "happy slapping".

The overall scenario emerging from the research reported is that of a growing phenomenon, whose detection is not yet sufficiently systematized, and has its "hot spot" mainly in America and England. Sharing the results obtained with such researches can achieve two results at the same time: on one hand could encourage investigation in other countries, on the other would facilitate the reaching of those shared definitions that will allow the deepening of a process of investigation and knowledge of the phenomenon. This would not only lead to obtaining an increasingly precise photograph of it, but also to better guide and evaluate the effectiveness of the contrasting actions undertaken.

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[56] The "happy slapping" is a juvenile phenomenon started around 2004 in London. It involves *an unprovoked attacks on individuals made in order to record the event, and especially the victim's shock and surprise, on video phones.*The first newspaper article to ever use the phrase 'happy slapping' was "Bullies film fights by phone", published in The Times Educational Supplement on January 21, 2005, in which reporter Michael Shaw described teachers' accounts of the craze in London schools.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

3.2 The Taxonomy

To obtain a clearer picture of the data collected in the different surveys realized around the world to evaluate the diffusion of cyberbullying phenomena, a grid of analysis has been built on the bases of the most relevant features presented by the research. The comparison of the specific for each item of the grid highlights the differences among the surveys and suggests the main problems that may be encountered in the data analysis.

Sample: sampling procedures can be very different between the surveys. In most of the cases respondents are part of a convenience sample, and also when the sample is defined as random, information about the sampling procedure are seldom provided. Among the considered surveys, most of the respondents were approached during school time. Other data-collection methods were telephone interview of panel members or online questionnaires completed voluntarily by the web-site users. These differences in the recruitment of the sample can influence the data especially for what concerns the motivation of the respondents (higher for the volunteers) and the frequency of ICT use (an online survey excludes t all the population not using internet, for instance).

Time of data collection: Given the rapidity of the changes in ICT diffusion and in the most used applications, both the year and span of time in the data collection are highly relevant in understanding the data. As the technology change, so do the adolescents habits of use, and way of communication that were highly diffused five years ago may not be so widespread today, as it happened among American teens and their use of Myspace and Facebook. Moreover the introduction on the market of technology allowing a combined use of different communication tools may render old categories no more pregnant. As an example, the diffusion of mobile phones able to navigate on the internet made the classification of bullying via mobile *vs.* via Internet less relevant. Considering that between the collection of some data and their publication there time gap can be of even some year, as it is the case in the first of the following research presented, knowing the exact year of data collection can help to contextualize the results.

Submission procedures: tightly related to the sampling procedure, this information is relevant especially when considering the impacts that responding on a paper and pen questionnaire vs. responding to an online one can have on the answers. Research has suggested that the pressure to impress a researcher can be reduced through computer administration (Richman, Kiesler, Weisband and Drasgow, 1999). In support, Joinson (1999) demonstrated that Internet based tests yielded lower social desirability scores than did paper-and-pencil based tests, although there are mixed findings in terms of disclosure rates for sensitive surveys. Rosenbaum and colleagues (2006) compared disclosure rates for sensitive material including substance abuse and sexual aggression across three methodologies (in-person interview, telephone interview, and paper-and-pencil survey), and found that there were no differences due to method or topic.

Questionnaire: While some of the survey clearly describe or even report the whole questionnaire, some of the other doesn't furnish information on this topic. Differences in the questionnaire submitted may impact the responses. For example, Crawford, Couper

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

and Lamias. (2001) found that shorter surveys yielded lower non-response rates than longer surveys. Similarly, Stanton et al. (2002) reported that longer surveys had more missing data and tended to have higher rates of refusal than shorter surveys.

Data on ICT diffusion: While general data on ICT diffusion among the population are usually available for most countries, the level of ICT use among the specific sample is information that only some of the research reports This information is particularly useful when the sampling procedure has been of the convenience kind, as it allows to check if the use of digital devices among the interviewed reflects that of the population, of specific biases are verified. When included, this data is most of the time checked for correlation with the level of cyberbullying involvement among the respondents.

Cyberbullying definition: Clearly reporting the cyberbullying definition adopted in the research and the way it was operationalized is, as previously pointed out, extremely relevant in the prospect of data interpretation and comparison. Differences in the definition adopted may lead to critical differences in the findings. Also the way the definition is proposed to the respondents can impact the survey's results: while in some case researchers clearly stated, before the questionnaire administration, what the term cyberbullying stand for and which kind of behaviour should be considered cyberbullying in other cases the researchers prefer to collect data on the basis of what the respondents considered being cyberbullying, providing only very general references.

Data on cyberbullying diffusion: The surveys present the data collected in very different ways, according to reader's target. The data go from extremely raw presentations, with tables illustrating the distribution of the responses for each question to more sophisticated ones, presenting and commenting the statistical analysis conducted. Moreover the data can be illustrated in a very specific and detailed way or on a more general level. The choice of data reported is another relevant factor influencing the comparability of the research.

Research limits: Clearly stated only in a minor percentage of the surveys, the research limits are very helpful in the comprehension of the critical point of the survey, allowing a better understanding of what kind of comparison and generalization may derive from the obtained results.

The surveys

A cross-cultural comparison of adolescents' experience related to cyberbullying

Quing Li

Sample	Canada: 157 middle school students, (age 12-15), 71 males and 86 females China: 202 7ht grade students (age 11-14), (107 males, 90 females)
Year	Article submitted in 2005, published in 2008. Time of data collection not specified
Questionnaire	Provided in appendix
Mode of questionnaire administration	Pen and Paper
Cyberbullying definition	Cyberbullying is defined as harassing using technology such as email, computer, cell phone, Video cameras, etc. Bullying occurs when people say mean and hurtful things or make fun of another

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

	person or call him/her mean and hurtful names, completely ignore or exclude him/her from their group of friends or leave him/her out of things on purpose, tell lies or spread false rumours about him/her, send mean notes and try to make other students dislike him/her and other hurtful things like that. When we talk about bullying, it is difficult for the person being bullied to defend himself/ herself. We also call it bullying when a person is teased repeatedly in a mean and hurtful way. But we don't call it bullying when the teasing is done in a friendly and playful way. Also, it is not harassment when two people of about equal strength or power argue or fight.
Data on ICT use	Collected but not reported
Data on cyberbullying	Among the Canadian respondents, 25% belong to the cybervictim group, 15% to the cyberbully group and 54% have heard of some cyberbullying episode. Almost 60% of the cybervictims were cyberbullied 1–3 times, 18% were cyberbullied 4–10 times and 23% were cyberbullied more than 10 times. 43% of the cyberbullies did it less than 4 times, 30% did so 4–10 times and 26% cyberbullied others more than 10 times. Among the Chinese respondents, 33% belong to the cybervictim group, 7% to the cyberbully group and 47% have heard of some cyberbullying episode. 76% of the cybervictims were cyberbullied 1–3 times, 14% were cyberbullied 4–10 times and 9% were cyberbullied more than 10 times. the great majority of the cyberbullies, 85% did so less than 4 times, 0% did 4–10 times and 15% cyberbullied others over 10 times. Proportionally more Canadian students than Chinese students reported that they had cyberbullied others (p 5 0.001) or knew someone being cyberbullied (p ¼ 0.002). No significant differences were found in the frequencies of bullying, bully victimisation and cyberbully victimisation. Among the Canadian students, over 67% said that adults in schools tried to stop cyberbullying when they were aware of the incidents. Fewer than 9% of students reported that, when they were cyberbullied, they told adults such as teachers and parents. Just 12% stated that, when they knew someone was being cyberbullied, they told adults. For Chinese students, 37% reported that they believed that adult in schools would stop cyberbullying when notified. 36% indicated that when they were cyberbullied, they told adults. Over 60% of the students reported that, when they knew someone was being cyberbullied, they told adults. Among the Canadian samples, the majority of the cyberbullying episodes involved the use of more than one type of electronic communication and a similar pattern is verified among the Chinese respondents.
Research limitation	The survey question which intended to discover frequency of students using computers did not provided categories able to discriminate appropriately the current trend of access to computers. the data were collected from urban schools

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Cyberbullismo: indagine esplorativa sul fenomeno delle prepotenze online

Maria Elena Saturno, Luca Pisano

Sample	1047 adolescents, aged between 11 and 20, attending secondary school, randomly chosen in the Italian regions Sardinia, Lazio, Marche, Sicily, Lombardy.
Year	Data collection February-March 2008, results published in November 2008
Questionnaire	All the questions are reported, with the answers' percentages
Mode of questionnaire administration	Paper and pencil, in the classroom
Cyberbullying definition	Not reported
Data on ICT use	Not recorded
Data on cyberbullying	34% (237 out of 702) of the middle school students and the 39% of the high school students states they know somebody inside the school, outside or even in both scenarios, who has been victim of cyberbullying. Among the middle school students cyber victims are 14%. In the high school sample there is a gender differentiation, 23% of the girls state they have been has been victims of cyberbullying, while in the male sample the percentage is 6%. The most common harassment "vehicle" used is the mobile phone; harassments via the Internet are not common yet. Most students, from both middle school and high school, state they took part in a cyberbullying episode only once or twice. The scenario obtained from the cyberbullies' statement fits the quality of the answers of the cybervictims.
Research limitation	Not reported

Electronic bullying among middle school students

Robin M. Kowalski, Susan P. Limber

Sample	3.767 students from the 6th, 7th, and 8th grade from six primary and middle schools located in the South East and in the North West of the United States of America
Year	Published in 2007
Questionnaire	Olweus Bully/Victim Questionnaire and 23 questions examining the experience of the sample with the electronic bullying.
Mode of questionnaire administration	Given in classrooms
Cyberbullying definition	"We define cyberbullying as an act of bullying via e-mail, instant messaging, in a chat room, on a web page, or through a text message sent to a mobile phone, at least once in the last 2 months."
Data on ICT use	Not recorded
Data on cyberbullying	11% of the sample states that has been victim of cyberbullying at least once in the last two months (victim only), 7% has been both bully and victim, and the 4% made an action of cyberbullying at least once in the last two months (bullies only) Most common cyberbullying methods (as indicated from both victims and bullies) involve the use of instant messaging, chat rooms, and e-mails. It is important to notice that almost half of the victims of cyberbullying didn't know the identity of the attacker. Data highlight gender differences in the frequency of episodes of

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

	cyberbullying, with the number of girls involved higher than males.
Research limitation	Not reported

Teen and Cyberbullying – Executive Summary of a Report on Research

National Crime Prevention Council

Sample	824 teens, aged between 13 e 17 USA families members of the Harris panel online
Year	Interviews in February 2006, results published in 2007
Questionnaire	Not reported
Mode of questionnaire administration	E-mail
Cyberbullying definition	Not reported
Data on ICT use	78% state being using the Internet for three years or more. 80 % used the Internet "yesterday". About 59% of the sample aged between 13 and 15, and the 74% of the sample aged between 16 and 17 states they own a mobile phone.
Data on cyberbullying	43% experienced some kind of cyberbullying during the last year. Cyberbullying rate is higher among females than males, especially between 15 and 16 years of age. More than half of the total of this group of age has experienced an episode of cyberbullying during the last year. From this sample, 3 out of 4 discovered the author of the bullying episodes. Often is a friend, o anyway somebody they knew at school. 23% didn't know the identity of the bully.
Research limitation	Not reported

Cyber Bully – Teen, Fight Crime: Invest In Kids

Teen Caravan Opinion Research Corporation

Sample	512 adolescents aged between 12 e 17, livings in private households of the continental USA.
Year	Data collection July 2006, data publication July 2006
Questionnaire	Available in the report
Mode of questionnaire administration	Interview on the phone
Cyberbullying definition	Obtained from the question: "During the last year, how many times something bad, threatening, or embarrassing has been said on you or to you, through e-mail, instant messages, web sites like MySpace, Friendster, etc., chat rooms or sms?"
Data on ICT use	Data available, not commented. 90% use the Internet In an average day, 30% of the sample use it for less than one hour, 60% for more than one hour. 69% in an average day use the mobile phone.
Data on cyberbullying	23% received hostile messages once or twice during the last year, 13% three times or more, 64% never. 72% knew the sender, 26% didn't 10% during the last year sent or posted a bad, aggressive, threatening, message on somebody else.
Research limitation	Not reported

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Putting you in the picture – mobile bullying survey 2005

Tesco Mobile

Sample	770 English students, aged between 11 and 19
Year	April 2005:
Questionnaire	Questions available in the report
Mode of questionnaire administration	Not reported
Cyberbullying definition	"We define text bullying, the biggest mobile bullying problem, as one or more unwelcome text messages that the recipient finds threatening, or causes discomfort in some way " "Have you ever been subjected to abuses or been threatened by somebody using the following methods: Sms, on-line chat room, e-mail?"
Data on ICT use	97% of the students aged between 12 and 16 own a mobile phone. Almost 4 million young people in the UK own a mobile phone with a photo and video camera. This figure was expected to double by 2007.
Data on cyberbullying	20% of the younger part of the sample states that has been victim of some kind of bullying or threat through e-mails, the Internet, chat rooms or sms. 73% of the students who suffered a bully action or a threat states they knew their assailant, 26% didn't. 11% admit sending somebody else a bully or threatening message, 87% states they never did such a thing.
Research limitation	Not reported

Web www.beatbullying.org

Sample	2396 English students, aged between 11 and 19
Year	2006
Questionnaire	Not reported
Mode of questionnaire administration	Not reported
Cyberbullying definition	Not reported
Data on ICT use	Not recorded
Data on cyberbullying	47% have suffered some form of text, photo message, video message, email, chat room, web page or online bullying 29% of 11 to 19 years old have been threatened or harassed using mobile phones, 29% of those surveyed said they had told no-one about being [cyber] bullied 11% admitted sending a bullying message to someone else 73% of young people who had received a bullying text, knew the bully and 26% said it was a stranger 6% of young people reported having been a victim of "happy slapping" and 35% of young people reported witnessing an incident of "happy slapping" 44% of parents are worried about their child being bullied or threatened via mobile phones 79% of teachers are worried about text bullying
Research limitation	Not reported

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Cyberbullying and online teens - Pew Internet and American Life Project

Amanda Lenhart

Sample	935 students, aged between 12 and 17, (886 online), living in continental USA.
Year	Data collected in October-November 2006, published in June 2007
Questionnaire	Available at the end of the memorandum, with percentages of the data.
Mode of questionnaire administration	Interview on the phone, and 7 focus groups
Cyberbullying definition	Obtained from the question: "Have any of the following episodes ever happened to you? Somebody took a private mail, an Instant Messaging or a sms you sent and forwarded it to another person, or published making it visible from others. Somebody published online gossip about you. Somebody sent to you a bully or threatening e-mail, IM or sms Somebody published online an embarrassing photo of you without asking your permission."
Data on ICT use	93% of the respondents use the Internet.
Data on cyberbullying	On the Internet population: 32% has suffered annoying or potentially threatening on-line activities. 38% of the girls, compared to 26% of boys, states being victim of bullyism. Older girls are the ones that more than any other age or gender group state has suffered bullyism, 41% of the on-line female sample aged between 15 and 17 state has suffered such experiences. Focus group *Why teenagers do on-line bullyism?* The easiness of reproducing and quickly transmit digital contents makes the bullying very easy. The mediate aspect of communication helps the bullying, isolating teenagers from the consequences of their own actions.
Research limitation	Not reported

Bullying in Middle School – Results from a southeast Florida Middle School Survey

Darren Richmond

Sample	700 interviews given, 400 interviews used, among students of the 7th and 8th grade, in Social Studios classes
Year	Data collected in May 2006: Submission of the results in September 2006
Questionnaire	all questions available
Mode of questionnaire administration	Paper and pencil, in the classroom
Cyberbullying definition	Not reported
Data on ICT use	Not recorded
Data on cyberbullying	A student out of four (25.8%) states to have suffered cyberbullying. Overall, the students were more likely to ignore the cyberbully (24.5%) and least likely to ask a friend for help (4.8%) Males were more likely to cyberbully the cyberbully (26.4%) and females were more likely to ignore the cyberbully (30.7%)

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Research limitation	Self-reported data: with the resulting risk of overestimate or underestimate the phenomenon Survey based on questionnaire voluntary given back. Large amount of students that didn't complete the questionnaire correctly (1 out of 5).

Examining the Overlap in Internet Harassment and School Bullying: Implications for School Intervention

Michele L. Ybarra, Marie Diener-West, Philip J. Leaf

Sample	Growing Up with Media survey, national research on 1588 young Americans aged between 10 and 15.
Year	Data collected in August and September 2006, published in 2007
Questionnaire	Not reported
Mode of questionnaire administration	Got in touch through a panel, fill out the on-line questionnaire on payment
Cyberbullying definition	During the last year, how many times the student: (1) received unpleasant or bad commentaries from somebody else, while was on-line; (2) has been object of on-line gossip, both true or false, and (3) received bully or threatening comments while was on-line. Students stating at least one of the three experiences during the last year were codified as harassed on-line.
Data on ICT use	34,7% uses the Internet every day, 21% more than two hours a day
Data on cyberbullying	Youth who were targeted by Internet harassment tended to be older and were less likely to be male. 34,5% reports at least one aggression via the Internet during the last year, 8% reports frequent aggressions, once per month or more, 64% of the students suffering on-line aggressions are also suffering bullying at school. The proportion of aggressions via the Internet is similar in students educated at home and those attending public/private schools. This phenomenon suggests cyberbullying is not always an extension of the bullying. 13% of the on-line harassed sample reports they didn't knew the aggressor Detentions and suspensions, ditching or skipping school, and weapon carrying were each more frequently reported by youth who also reported being harassed online.
Research limitation	As the research is based on *cross-sectional* data is not possible to do temporal inferences. A definition of aggression via the Internet hasn't been set yet. As a consequence of this, majorities and proportions should be compared to other studies on on-line aggressions only within a context explaining the differences in the definitions compared to the frequency of the attacks and within the temporal window considered.

Website www.iSafe.com

Sample	1500 North American students from 4th and 5th grade
Year	Data gathered between 2004 and 2005
Questionnaire	Not reported

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Mode of questionnaire administration	Not reported
Cyberbullying definition	Not reported
Data on ICT use	Not recorded
Data on cyberbullying	42% of the children suffered bullying while on-line 1 out of 4 more than once. 35% of the children have been threatened while on-line. Almost 1 out of 5 more than once. 21% of the children received bullying or threatening e-mails or messages. 58% of the children admit that somebody told them bad or unpleasant things while on-line. More than 4 out of 10 state this happened more than once. 53% of the children admit saying something bad or unpleasant to somebody else while on-line. More than 1 out of 3 did it more than once. 58% didn't report to their parents or an adult is something bad or unpleasant was already happened while on-line.
Research limitation	Not reported

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

4   The first investigation: cyberbullying among Italian students

The following data were collected as part of the research conducted during the project 'Crescere imparando a gestire i conflitti' (To grow, learning how to manage conflicts). The project, promoted by the City of Milan , involved 9 secondary schools of the city, for a total of about 400 students. The main aim of the project was to promote a shared environment that would encourage students and school workers to take an active part in preventing the escalation of conflict, contrasting incidents of violence or bullying. The training focused on providing better understanding of the differences and connections between conflict and violence, enhancing the participants' abilities to read one own and others' conflict dynamics in order to develop effective communication and relationship strategies for the pursuit of a goal. The broader aims of the research conducted during the project were:

- The reconstruction of the representation of conflict among the students, and the most widespread management techniques adopted;
- The monitoring of the situation regarding young people and conflict in and outside school, combined with the detection of the students' perceptions of the situation in their school before and after the training intervention;
- The collection of data on the use of new technologies and their impact on conflicts.

The relevance of ICT diffusion among Italian youth and the significant impact that this phenomenon can have on the student's life, motivated us to dedicate a whole section of the project (both during the research and the training phase) to the role of ICT in the conflict management of youth. More specifically, the research intended to evaluate:

- Mobile and Internet diffusion
- Student's main activities with the Mobile and Internet
- Student's attitudes towards the Mobile and Internet
- Cyberbullying diffusion and characteristics

As it was already observed with the investigations on bullying (Caravita and Ardino 1998), there is sometimes a gap between the academic definition of a phenomenon and what young people consider as such. It is possible to imagine that, among young people, the awareness on the phenomenon of cyberbullying, the forms it can take, its implications and potential consequence may not yet be as deep and widespread as the one on bullying or on others, more traditional issues. The analysis of the responses to a questionnaire investigating conflict among Italian secondary school students allowing the topic to be approached, and gain a better knowledge on the student's perception of cyberbullying

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

4.1   The questionnaire

The investigation of the topics listed above was conducted analysing the quantitative data collected at the beginning and at the end of the project. Two comparable versions of a questionnaire were created and submitted to all of the students involved. The two questionnaires are structured to combine different types of content:

–   Free evocations / associations: the first questionnaire started with three open questions detecting the student's spontaneous representation of conflict
–   Direct questions: The students expressed their level of agreement on a number of statements on conflict and on its management, as well as on their vision of the school environment and ICT; measured on a five point Likert scale;
–   Representative stimulus: a series of scenarios allowed further analysis of the non-explicit, cognitive mechanisms directing the students in the assessment and management of conflicts. Also these variables are assessed on five points Likert scales;
–   Scales: The Moral Disengagement Scale was applied to evaluate the moral disengagement strategies adopted by the respondents, and the Emotional Intelligence Scale, which allowed the analysis of the ability of children to read and express their emotions.

4.2   The sample

The total sample of the first questionnaire consisted of 485 pupils, of which 318 girls (65.6 %) and 161 boys (33.4 %), attending middle school (49 %) and high school (51 %). The personal data collected showed no special features or anomalies in the sample: the respondents mostly came from families where the parents are still married, only in 22 % of the cases were the parents separated, divorced or in different family situations. Regarding the socio-economic level, this was a sample of medium to high extraction: the parents of the interviewees had a high school diploma in 50 % of cases (39 % out of the total sample), and a university diploma in 30 % (25 % out of the total sample). In more than half the cases they had an office job. The remaining half of parents is distributed between freelance / creative work, entrepreneur, retired / unemployed / housewife and factory work.

The second questionnaire was submitted only to the students who participated in the training course, and its main objective was to detect any changes in the representation of conflict and school environment, as well as in the favourite conflict management techniques chosen by the students interviewed. The total sample answering the second questionnaire consisted of 377 students, 64 % female, 36 % male, 65 % from middle school and 35 % from high school.

The students answered the questions during school hours, after receiving a brief explanation of the reasons for the intervention and the questionnaire, under the supervision of two researchers.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

4.3 The results

In order to read the various kinds of data collected with the questionnaires, different types of analysis was needed. Taxonomy has been applied to the free evocations and open questions and two scales have been created from the sets of questions analysing the perception of the school environment and of the ICT. This last scale, called *'Internet attitude'* evaluates the perceived risk connected with the use of Internet and Mobile phone in peer relationships. Only the data relevant for the purpose of this study will be presented in the following lines.

Among the students interviewed the use of mobile phones and Internet it's widespread: 76% use the mobile phone several times a day, and 87% at least once a day while 83% of them is on the Internet several times a week, and 50% several times a day. The activities most reported by the students are: surfing the Net, chat and use of instant messaging programs, and downloading of music or films.

The respondents, in most cases, use the Internet alone. It may be interesting to underline that the average age of the sample is 14 years, with 46% of the sample aged between 10 and 14 years.

Nearly 70 % of respondents reported to having experienced at least one episode of cyberbullying, from prank calls, reported in 62.5 % of cases, to mean text messages, reported in 20 %, through other kind of episodes such as on line gossip or publication of personal photos or messages. Attacks occur mainly when the respondents are at home, confirming one of the typical features of bullying via ICT. Approximately 50 % of respondents personally know who has attacked them over the internet or phone, 20 % do not know them personally, but is aware of their identity and 30 % do not know the identity of their attacker.

Mean text message	20% from some time to all the time
Mean comment on SNS	12% from some time to all the time
Online gossip	13% from some time to all the time
Diffusion of an embarrassing pic	9% from some time to all the time
Diffusion of private message	6% from some time to all the time
Telephone joke	62,5% from some time to all the time
Stolen online identity	6% from some time to all the time
Modification of SNS page	8% from some time to all the time

The great disparity between the frequency of phone pranks and other incidents leads us to reconsider the data and suggests the need for separate analysis of this phenomenon, which might be characterized by factors differing from those characterizing the other form of harassments indicated by the students.

Attacks occur mainly when children are at home, confirming one of the typical features of bullying via ICT. About 50% of respondents personally know who has attacked them, 20% only know his identity and 30% do not know at all the identity of his assailant.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

To better understand the characteristics of the phenomenon, following analysis were carried out dividing the sample into two groups: those who were victims of at least two episodes of cyber-attack (45% of the sample) and those who never suffered cyberbullying (55% of sample).The group of victims is composed of 246 students, of which 72% female and 28% male, aged between 11 and 19 years of age. Two age groups are particularly affected by this phenomenon, in fact 28% of the victims are between 12 or 13 years old, and 58% between 15 and 17 years old. The group that has never suffered incidents of cyberbullying is composed of 203 students, of which 62% girls and 38% male. The average age is slightly lower; in fact 54% of the sample is less than 13 years old.

The victims of cyberbullying are also those who report a higher use of ICT, although this difference is more marked in the frequency of internet access than on the mobile phone use. In accord to the international findings, it is possible to say to say that the use of technology increases the probability of becoming a victim of cyberbullying

Crosstab

			Value
Nominal by interval	Eta	Dependent Frequency of Internet use	,196
		Dependent cyberbullying victimization	,282

Measure of the correlation between the frequency of Internet use and the level of cyberbullying victimization

An interesting question concerns the online activities carried out by the students. In fact, the group of victims significantly surpasses the non-victim group in the frequency of chat and instant messaging use, while the two groups are equal in the use of the Internet to do homework and the group of non-victims exceeds the victims in the use of Internet to play.

With regards to the use of mobile phone, the variables that most distinguish the groups are the use of mobile phones to reconcile and say things, both beautiful and ugly, that they would not be able to say face to face.

Overall, the group of victims shows a greater tendency to use information technology in their interpersonal relationships, both with a higher use of chat and social networking sites, and with a more personal content of the messages transmitted through ICT.

The victims of cyberbullying, possibly as more assiduous users of technology, express the most polarized opinions both on the positive aspects of ICT and the potential risks and the online misconduct implemented by their peers. The victims agree on higher level compared with non-victims to positive statements such as: "with an sms I can say what I really think to my friends", "in MSN it's easier to share intimate things and support each other", "my peers use Internet to make peace after a quarrel" and "to say each other nice things they would not be able to say in person". At the same time victims support statements such as: in Internet my peers publish photos of other people without their agreement, or their friends private data, they gossip, fight, say mean or rude things they would not say in person.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Among the topics investigated by the questionnaire, three groups of questions aimed at assessing the perceptions that students have of:

- The frequency of episodes of conflicts in their school
- The attitude of their school mates when assisting to the aggression of a peer
- The attitude of adults when witnessing a conflict among their pupils

Following analysis permitted to create two scales, one combining the opinion expressed with regards to technology perception, which was called "Internet attitude", and the other summarizing the perception of peers and adults, which was called "School atmosphere". It was then possible to compare the means of the victims and non-victims groups on such variables.

The groups significantly differ on almost all variables detecting the frequency of aggression at school (except the purely physical kind). In the perception of schoolmates, as well as in that of adults, the most significant differences relate to the reported frequency of negative behaviours. Also the two scales School atmosphere and Internet attitude show significant differences among the two groups. The following table allows a closer observation of these differences:

	Group	N	Mean	Mean difference significance
At school some student is ridiculed	non victim	195	3,579	.004
	victim	243	3,827	
At school there is gossiping	non victim	195	3,466	.000
	victim	241	3,900	
At school some student is excluded	non victim	194	3,304	,031
	victim	241	3,522	
At school some student is offended or insulted	non victim	194	3,113	O,43
	victim	242	3,326	
At school students makes cruel prank	non victim	195	2,559	.010
	victim	240	2,845	
At school some student is threatened	non victim	194	1,799	
	victim	241	1,995	
At school there are theft	non victim	192	2,171	,008
	victim	241	2,477	
At school someone is mocked in the Internet	non victim	179	1,715	,000
	victim	238	2,315	
When someone is mocked, schoolmates join the mocking	non victim	190	2,421	,000
	victim	238	2,857	
When someone is mocked, schoolmates have fun and cheer	non victim	191	2,293	,001
	victim	235	2,642	
When someone is mocked, schoolmates thinks he is the one that can be beaten	non victim	187	2,229	0,28
	victim	234	2,487	
When someone is mocked,	non victim	186	2,596	0,30

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

schoolmates exclude the victim				
	victim	237	2,852	
When someone is mocked, schoolmates ask help to an adult	non victim	183	2,480	,000
	victim	232	1,944	
When someone is mocked, adults are not around	non victim	185	2,848	,035
	victim	233	3,081	
When someone is mocked, adults don't notice	non victim	185	2,443	,000
	victim	238	2,886	
When someone is mocked, adults pretend not to notice	non victim	184	1,782	,000
	victim	233	2,176	
When someone is mocked, adults minimize	non victim	185	2,043	,000
	victim	237	2,447	
Internet attitude	non victim	184	3,102	,000
	victim	235	3,503	
School atmosphere	non victim	173	2,589	,000
	victim	230	2,896	

Overall, it possible to observe that the students who have lived experiences of cyberbullying have a significantly more negative perception of their school environment. Victims most frequently reported incidents of teasing and exclusion. With regard to the reaction of bystanders, whether peers or adults, when faced with incidents of bullying between peers, the students of the victims group reported a higher frequency of negative reactions.

The two versions of the questionnaire submitted to the participants at the beginning and the end of the project included as well two scenarios depicting conflict situations. The first scenario tells the story of a fight among teenagers, while the second scenario represents a situation of potential cyberbullying, where either an embarrassing photo or a video of a school mate has been taken and shown around. In both scenarios the respondent was asked to identify with a bystander, and to express

- a cognitive evaluation of the situation,
- what kind of feelings such situation would arouse in him and
- what kind of responses he would consider most appropriate.

For all these variables, we conducted a T-Test confronting the mean values of the answers given by the students to the fight *vs.* ICT scenario. The differences between the answers given in the first and second scenario are in most cases significant.

In the first set of questions, students had to assess their agreement to four different statements giving an increasingly negative evaluation to the scenario described. The students appear to evaluate more severely to the face to face situation and as less seriously to the ICT scenario. The following tables resume these results:

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Cognitive evaluation

		Mean	Mean difference	Sig.
pair 1	Photo is very funny	1,7895	,345	,000
	Fight is a very good thing	1,4442		
pair 2	Photo not serious problem	2,2994	,344	,000
	Fight not serious problem	1,9554		
pair 3	Photo very bad thing	3,4379	-,250	,000
	Fight very bad thing	3,6884		
pair 4	I don't have an opinion on this	1,7915	,177	,000
	I don't have an opinion on this	1,6149		

Students were consequently asked to refer which kind of emotion, and with what intensity, they imagined they would feel if confronted with the situation described in the scenarios. Students report a higher level of anger, worry, fear and involvement in relation to the fight scenario, while the ICT scenario elicits higher level of indifference, happiness and amusement. Even if, for those emotions, the indicated level is very low, it's still possible to observe a significant difference between the two scenarios.

Emotional response

		Mean	Mean Differences	Sig.
pair 1	angry	2,5357	-,44958	,000
	angry	2,9853		
pair 3	worried	2,5851	-,68936	,000
	worried	3,2745		
pair 4	scared	1,4776	-,86141	,000
	scared	2,3390		
pair 5	indifferent	1,8483	,38034	,000
	indifferent	1,4679		
pair 8	involved	2,6436	-,28942	,000
	involved	2,9330		
pair 9	happy	1,3739	,11325	,008
	happy	1,2607		
pair 10	amused	1,6228	,26078	,000
	amused	1,3621		

The students had the possibility to indicate other kind of emotions. Also the open part of this question is characterized by a similar trend, with a higher level of negative emotions indicated in reference to the fight scenario, while mixed and positive emotions are reported for the ICT scenario.

The last set of questions related to the scenarios asked the respondents to choose, among a number of different actions, what they would think more appropriate to do if they were confronted with the situation described. In the fight scenario, the preferred reaction indicated by the students is to separate the fighters (mean=3.64), followed by telling an adult (mean=2.85) and join the fight (2.37), while cheering or not do anything are the less favourite options (respectively mean=1.49 and mean=1.35). In the ICT scenario, the

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

preferred options are telling the schoolmate not to show around the photo (mean=3.75) and to alert the photographed person (mean=3.29). The following options, separated from the first two by a considerable gap, are looking at the photo when alone (mean=1.88), not doing anything (mean=1.74) and tell an adult (mean=1.71). As least favourite options we found to watch the photo with friends (mean=1.59) and to send the photo around (mean=1.42) In this case the two scenarios only had three comparable answers. The respondents are much more motivated to report the incident to an adult in the fight scenario, while in the ICT case they are more inclined to do nothing.

	Reactions	Mean	Mean difference	Sig.
pair 2	I tell an adult ICT	1,7134	-1,12931	.000
	I tell an adult Fight	2,8427		
pair 3	I don't do anything ICT	1,7364	,38344	.000
	I don't do anything	1,3529		

Also this question left an open option to the respondents, to collect different suggestions about how to react to the described situation. In the ICT scenario, while most of the suggested reactions involve a direct intervention of the respondent to discourage the schoolmate to go on with the joke, a few comments underline the 'irrelevance' of the problem, and suggest talking to the victim to convince her the whole thing is nothing to worry about.

Once again the scenario describing the fight collects a higher number of suggestions, mainly involving a direct intervention of the bystander. In few cases the respondents indicate the desire to leave the scene and mind their own business, but in no case they describe the situation as 'not relevant'.

The second questionnaire was submitted to the students only at the end of the training course. Unfortunately, the first set of questions, detecting the cognitive evaluation of the situation is not available in the second questionnaire. We proceed then to analyse the differences in the responses to the emotions and possible reactions expressed by the students.

The first difference from the answers collected in the first questionnaire is the absence of significant discrepancy in the positive emotions related to both scenarios: the ICT scenario is no more characterized by a higher level of positive emotions. Moreover, the ICT scenario elicits a higher level of anger, disappointment and indignation along with a higher level of indifference, while the fight scenario is characterized by more worry and confusion. These results are in clear contrast with those obtained in the first questionnaire, and seem to indicate a higher level of consciousness in the students, following the training course.

	Emotional response	Mean	Mean difference	Sig.
pair 1	Angry Fight	2,4499	-,39566	.000
	Angry ICT	2,8455		
pair 3	Worried Fight	3,2603	,23288	.000

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

	Worried ICT	3,0274		
pair 4	Indifferent Fight	1,5574	-,20728	.000
	Indifferent ICT	1,7647		
pair 5	Disappointed Fight	2,2301	-1,08219	.000
	Disappointed ICT	3,3123		
pair 6	Confuse Fight	2,38	,37119	.000
	Confuse ICT	2,0083		
pair 8	Indignant Fight	2,1408	-,31034	.000
	Indignant ICT	2,4511		

The propensity to choose an action that would solve the conflict situation, such as separate the fighters in the fight scenario, or convince the schoolmate not to show around the offensive video is no more significantly different in the two scenarios. Still the fight seems to call for a quicker intervention: the respondents are significantly more inclined to call an adult and talking to the person involved. In the ICT scenario we observe a higher propensity in taking a morally questionable, but still problem solving oriented reaction, and, once again, in doing nothing. The difference between the two scenarios on this variable is anyway much smaller in this second questionnaire, if compared to the first one.

Reactions

		Mean	Mean difference	Sig.
pair 1	I don't do anything Fight	1,4208	-.16393	.006
	I don't do anything ICT	1,5847		
pair 2	I call an adult Fight	2,5178	.44384	.000
	I call an adult ICT	2,0740		
pair 4	I check my schoolmate's bag	2,5657	-,48012	.000
	I delete the video	3,0459		
pair 5	I try to speak with the victim Fight	3,5496	,28895	.000
	I speak to the victim ICT	3,2606		

A second step in the analysis aims at assessing the differences, within the sample, in the perception and representation of cyberbullying. Running a cluster analysis on the answers given to the ICT scenario in the first questionnaire it's possible to divide the sample in two groups, differing in their evaluation of the episode.

The *cyber-sensitive* group reports a more severe evaluation of the scenario, a higher level of negative emotion and a stronger propensity to choose positive, problem-solving oriented answers to the situation.

The *cyber-insensitive* group is characterized by a less polarized evaluation of the situation, with the higher value indicating it as 'not a serious problem', very low values on the emotions, with indifference and amusement indicated as the stronger feelings, and a lower inclination towards positive actions to take in response to the situation.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Cyber-sensitivity clustering

	Cluster	
	Cyber-insensitive	Cyber-sensitive
Photo is very funny	2,30	1,32
Photo not serious problem	2,92	1,72
Photo very bad thing	2,62	4,20
I don't have an opinion on this	2,16	1,46
Angry	1,71	3,31
Sad	1,47	2,57
Worried	2,01	3,11
Scared	1,25	1,69
Indifferent	2,33	1,43
Uneasy	1,67	2,83
Indignant	1,66	2,90
Involved	2,24	3,04
Happy	1,66	1,14
Amused	2,08	1,20
I send the photo	1,70	1,16
I look at the photo with my friends	1,93	1,28
I look at the photo alone	1,78	1,98
I tell Elena not to show around the photo	3,02	4,42
I tell an adult	1,27	2,12
I alert Michela	2,69	3,85
I don't do anything	2,21	1,30

Cross tabulation and mean comparisons have been run to allow detecting significant differences in the variables characterizing the two groups, and define a profile of the typical *cyber-sensitive* or *cyber-insensitive* respondent.

Cyber-sensitive are more often girls (74 % of the group), younger than the component of the other group (more than half of this group is under 13), who have been reported being victims of some episode of cyberbullying more often than the students of the cyber-insensitive group. The students of this group obtain a significantly higher score on the Emotional Intelligence Scale, and a lower one on the Moral Disengagement Scale. They report to use Internet less frequently than the component of the other group, but the two groups do not differ in the Internet Attitude Scale, that is, their evaluation of the risks connected with the use of internet.

The *cyber-insensitive* group is composed of a higher percentage of boys (41 %), with a higher average age (61 % of them are between 15 and 19 years old) who reported significantly less cyberbullying victimization, and a more frequent use of the Internet. This group of students report a perceived lower ability to read their and other people's emotions, and are more prone to agreeing with statements exemplifying moral disengagement strategies.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

When comparing the two groups in the answers given to the fight scenario, a similar trend is observed. The students answering to the ICT scenario in a more sensitive way confirm this tendency in their evaluation of the fight scenario, and so happen for the component of the *cyber-insensitive* group. This result, combined with the absence of a significant difference between the groups in the Internet Attitude Scale seems to confirm a lack of specific concern and awareness to the specific problems linked to cyberbullying, whose evaluation is based on the basis of a more general attitude towards conflict.

4.4   The first conclusions

The research achieved a first depicting of the student's relation with mobile phone and Internet:

The diffusion of such technology is high among Milano students, especially when compared with the national statistic. Almost all the kids interviewed had access to mobile phone and Internet connection, in many cases on daily bases.

The research detected as well the diffusion of phenomena of cyberbullying among the students, with figures in line with the main European findings. Students report having received mean text messages and email, hurtful comments on their personal pages, the diffusion of online gossip and personal content (bot photos and private communications).

Students' main activities when using mobile phones and Internet are surfing the Web, communicating via instant messaging program or social network sites ad downloading music or movies. It's possible to detect differences between students who experienced cyberbullying and those who never did, in their favourite activities. The group of victims seems keener in using such technologies in their interpersonal relationship, to communicate both nice and bad things they would not say in face to face interaction.

Differences have been found also in the perception of the school environment, both with regards to the perceived frequency of episodes of conflict and the perceived attitude of peer and adult bystanders. The victims of cyberbullying report a higher level of conflict in their school, and a weaker supportive attitude in the bystanders.

The questionnaire submitted to the students presented them with scenarios talking about an everyday story of conflict from the point of view of a bystander. In the first scenario, the students had to imagine witnessing a fight among two schoolmates, while in the second one the bystander discover that an embarrassing video or photo of a schoolmate is about to be made public. Respondents were asked to evaluate the gravity of both situations, what their emotional response would be, and what kind of reaction they would consider more appropriate. Confronting the answers given to the two scenarios in the first questionnaire, it's possible to observe a clear difference in the respondents' evaluation of the situations. The fight is considered a very bad thing, and students imagine how they would feel worried, angry and involved if observing such a situation. Among the offered options, those gaining bigger consent are the more positive and proactive ones, oriented to intervene in the situation. The answers to the ICT scenario delineate a different disposition. The photo is still considered a bad thing, but in a less extreme way, and there is more space to the idea that it is maybe not a really serious problem, after all. Such evaluation finds confirmation in the imagined emotional reaction, as well as in the possible actions to be taken. The most probable emotions indicated are still involvement, anger and worry, but their impact is less strong, while emotions like indifference or amusement are indicated on a stronger level, if compared with the previous scenario. As for the possible

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

reactions, only two of the proactive options proposed seem to be valuated as suitable, while the idea of telling an adult doesn't seem to be very appealing, and the propensity not to do anything is stronger. Moreover, in few cases students suggest as possible option to talk to the probable victim of the diffusion of the photo to explain why the situation should not be seen as disturbing at all, but only as a joke. These results seem to support the hypothesis of a lack of awareness of the risk connected with cyberbullying among the students, and a tendency to underestimate the gravity of the possible consequences of such episodes.

The analysis conducted on the second questionnaire, after the students had participated in the training course; show a reduction of the gap in the evaluation of the two scenarios. This difference is especially clear for the emotional response, where the ICT scenario overgrow the fight one in eliciting feelings of anger, disappointment and indignation, but can be observed also in a higher propensity to choose proactive reaction as answers to the situation.

The sample can also be separated into two groups, based on the answers given to the ICT scenarios. The first group assembles the respondents who evaluated the ICT scenario as more grave, showed the strongest emotional reaction and the higher propensity to intervene in a positive way. We call this group the *cyber-sensitive* one. The *cyber-insensitive* group is composed of those students who show a lower concern with the ICT scenario, evaluating the episode as less grave, indicating less extreme emotional reactions (and showing a higher propensity to remain indifferent or finding it amusing) and choosing behavioural reaction less problem-solving oriented. While the two groups do not differ in the inclination to represent Internet and mobile phones as tricky instruments when used to mediate peer relationships, other characteristics distinguish them. *Cyber-sensitive* are younger, more often female, and personally experienced a certain level of cyberbullying. Cyber-insensitive are older, with a higher percentage of male, scoring lower values in the Emotional Intelligence Scale, and higher ones in the Moral Disengagement one.

Overall, the results of this first questionnaire seem to indicate the necessity (and the potentials) of specific training to increase youth awareness of the dynamics of ICT mediated communication, online conflict and cyberbullying.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

5   The second investigation: cyberbullying behind frontiers

The main aim of the this research has been the collection of comparable data on cyberbullying in Italy and other developing countries, integrating the body of knowledge so far produced mainly with national studies on students of developed countries.

The questionnaire submitted to a sample of students in Italy, Colombia, Brazil, Turkey and India allowed the collection of comparable data, and intended to detect:

- the relevance of cyberbullying diffusion, providing a list of specific behaviours and a time window of occurrence of such behaviours;
- the diffusion of ICT and their representation as media in interpersonal relationships;
- the evaluation of cyberbullying acceptability, both on an abstract level and in relation to concrete examples.
- The existence of internationally valid predictors of cyberbullying

The focus of the research is intentionally directed not only the investigation of the characteristics and experiences of the victims, but also on the habits, representations and feelings of the bullies, a knowledge essential for the planning of prevention and intervention programs. Previous research (Kowalski and Limber 2007) already pointed out the relatively high presence of a "new" category of involvement, which sees the same person protagonist of acts of cyberbullying both as a victim and as a bully. This observation, combined with the increasing spread of the phenomenon, highlight the importance of understanding the processes facilitating its occurrence. Moreover, it seems possible that the lack of awareness about the possible negative consequences of certain kind of online behaviours or their relatively mild condemnation among the youth could play a relevant role in determining the actuation of antisocial online behaviours.

While creating the questionnaire it was hypnotized that: cyberbullying should be detected in all countries where ICT technology is available; a relevant part of the adolescents involved in cyberbullying may be categorized as bully-victims; the emotional impact of cyberbullying may not be directly correlated with the frequency of the episodes; the role played by the characteristics of intentionality of the damage, anonymity and balance of power may be seen by the adolescents as different from the one indicated in the literature; the evaluation of the acceptability of cyberbullying may have a strong impact on adolescents' behaviour.

5.1 The sample

The overall sample of the research consists of 1349 secondary school and university students, of which:

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

- Brazilian: 212 respondents, 52.4%male and 47.6% female, between 13 and 19 years of age, (m= 15.7 var=1.37);
- Colombian: 359 respondents, 64,1% male and 35,9% female, between 13 and 19 years of age, (m=15.8 var=1.23);
- India: 49 respondents, 46,9% male and 53.1% female, between 14 and 18 years of age, (m=16.38 var=,62)
- Italian: 601 respondents, 40.4% male and 59.6% female. Of the whole number of respondents, 254 are secondary school students, of which 44.1 male and 55.9 female between 13 and 19 years of age, (m=16.09 var=1.61) and 261 are university students, of which 37.2 male and 62.8 female between 18 and 43 years of age, (m=21.25 var=10.08).
- Turkish: 122 respondents, 36.4% male and 63.6% female, between 18 and 33 years of age, (m=22.77 var=6.06).

While the South American and Indian samples are composed of secondary school students coming from private schools, the Italian and Turkish samples are composed of students from public secondary school and Universities. This difference accounts for the difference in the parents' level of education and occupation. Especially in Brazil, Colombia and India, the parent's level of education is very high, and the occupations are fairly qualified.

Previous research on bullying observed how this kind of behavior doesn't correlate with social status and can be expected among adolescents of very different background[57], while variables connected with the peer's group or school atmosphere can have a stronger impact. In this case the access to ICT technologies was considered to be an essential feature for the choice of the respondents, while data such as parent's level of education or occupation, although collected, were not expected to significantly impact on the object of our study. In fact, this assumption had already been verified in the previous study involving only Italian students.

Frequencies distribution

		Education (%)	
		Father	Mother
Brazil	Primary	2,4	2,9
	Secondary	23,1	22,9
	University	74,5	74,3
Colombia	Primary	12,7	7,5
	Secondary	34,6	39,1
	University	52,7	53,4
India	Primary	2,1	2,1
	Secondary	8,3	21,3
	University	89,6	76,6
Italy	Primary	27,8	25,6
	Secondary	53,6	54,0
	University	18,5	20,4
Turkey	Primary	28,9	53,3
	Secondary	32,2	21,7
	University	38,8	25,0

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[57] In their study, Spears, Slee, Owens, Johnson (2008) observe that both bullying and cyberbullying occur in various ways and across all sectors, genders and age groups.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Parent's level of education

Frequencies distribution

	Occupation (%)		
		Father	Mother
Brazil	Manager/Entrepreneur	37,6	17,7
	Employee	24,3	23,0
	Freelance/Creative worker	29,5	30,1
	Retired/unemployed/housewife	3,3	24,4
	Factory worker	1,9	
	Unknown	3,3	4,8
Colombia	Manager/Entrepreneur	13,9	10,0
	Employee	35,5	30,7
	Freelance/Creative worker	37,0	24,2
	Retired/unemployed/housewife	4,5	31,0
	Factory worker	1,8	,3
	Unknown	7,3	3,8
India	Manager/Entrepreneur	47,9	19,1
	Employee	45,8	29,8
	Freelance/Creative worker	6,3	4,3
	Retired/unemployed/housewife		46,8
	Factory worker		
	Unknown		
Italy	Manager/Entrepreneur	14,5	4,0
	Employee	38,9	54,8
	Freelance/Creative worker	18,1	7,0
	Retired/unemployed/housewife	9,5	23,7
	Factory worker	16,6	9,2
	Unknown	2,5	1,2
Turkey	Manager/Entrepreneur	10,0	2,5
	Employee	35,0	11,7
	Freelance/Creative worker	18,3	5,0
	Retired/unemployed/housewife		64,2
	Factory worker	35,8	15,8
	Unknown	,8	,8

Parents' occupation

The sample was selected adopting a non-probabilistic procedure. With *nonprobability sampling*, population elements are selected on the basis of their availability or because of the researcher's personal judgment that they are representative. In our case, while trying to select sub-samples balanced on most of the personal data, such as age and gender, the virtual impossibility of recruiting respondents among the whole population influenced the choice of a convenience sample. The consequence is that an unknown portion of the population is excluded and generalization of the findings to the whole population is not statistically supported. It is useful at this point to remember that recruiting a probability sample is not always a priority for researchers, as, for instance, it is possible to demonstrate that a particular trait occurs in a population by documenting even just a single instance. Another situation in which a probability sample is not necessary is when a researcher wishes to describe a particular group in an exploratory way, as it was the case with the present research.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

5.2 The questionnaire

To address the research questions a questionnaire has been created, integrating different kind of data and collection methods. The questionnaire was first constructed in Italian, consequently translated in English and Spanish. The English version was then translated into Turkish, while the Indian students responded to the English version of the questionnaire.

ICT use: Frequency of mobile phone and Internet use have been measured by two independent questions on a 6 point rating scale, ranging from 0= never to 5 = more than once a day. Respondents were then asked to describe the time spent on the Internet by rating the usage frequency of 8 different Internet based activities (such as using Social Network Site, doing homework or playing) on a 5 point scale ranging from 1 = always to 5 = never.

ICT representation: Seven statements describe ICT in alternatively positive and negative way, for what concern their impact on relations with peers. Respondents were asked to assess their level of agreement with each statement on a scale ranging from 1= strongly disagree to 5= strongly agree.

Cyber bullying experiences have been measured by a total of 16 items (8 for cyber bullying and 8 for cyber victimization). The items were constructed upon reviewing several international studies and based on the Revised Cyber Bullying Inventory (RCBI; Topcu and Erdur-Baker, 2010). Students were asked to respond to each item on a three point rating scale (1 = never to 3 = 3 times or more) indicating the frequency of their engaging/facing particular cyber bullying acts in the past 6 months. While analysing the data, two categories were created; those who reported to have at least one experience of cyber bullying and those who reported to have no experience of cyber bullying at all.

Cyber bullying representation: This section of the questionnaire was created to allow a better understanding of the representations that students have of cyberbullying. To reach this aim one of the chosen instruments has been vignettes." Vignettes may be used for three main purposes in social research: to clarify people's judgements; to allow actions in context to be explored; and to provide a less personal and therefore less threatening way of exploring sensitive topics. As it's already been observed, (Parkinson and Manstead 1993) the answer given to a question based on a vignette doesn't necessarily predict actual behaviours, still vignette data can complement other forms of data collection to provide a more balanced picture of the social world which researchers seek to understand (Hughes 1998). The questionnaire includes two different vignettes depicting two cyberbullying situation, one over the Internet and the other involving short text messages via mobile phone, and differing in the characterization both of the bully and of the victim, thus profiting "of the possibility offered by vignettes of an analysis of the effects on people's judgments by systematically varying the characteristics used in the situation description" (Alexander and Becker 1978). The stories narrated are based on real life experiences, and in their creation it's been taken care to realize them as relevant (Neff 1979) and real (Finch 1987) to participants, but at the same time vague enough to 'force' participants to provide additional factors which influence their decisions (Barter and Renold 1999). Three set of questions detect the cognitive evaluation of the situation by the respondents, their

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

representation of the role played by four of the major issue characterizing cyberbullying (intentionality and awareness of the damage, anonymity, power unbalance) and the assessment of fault.

Secondarily, respondents reporting to have experienced cyberbullying on personal level have been asked to assess the emotional impact of the experience, both as victims and bullies, on a 5 points Likert scale going from 1= extremely upsetting to 5= extremely funny.

Finally, respondents assessed their evaluation in terms of acceptability for each of the cyberbullying behaviours previously listed. The evaluation Likert scale range from 1= always OK to 5= never OK.

Vital statistics: The questionnaires were anonymous, but data on the respondent's nationality, age, sex, and parent's level of education and kind of employment were collected.

5.3   The overall situation

5.3.1   ICT

Although some difference in the frequency of mobile phone and Internet use exists among the different sub-samples, the data confirm the high level of penetration of ICT technologies among the adolescents interviewed. The access to mobile and Internet is signalled on daily bases in respectively 70% and 70% of the cases in Brazil, , 75% and 80% of the cases in Colombia, 88% and 59% of the cases in India, 92% and 83% of the cases in Italy and 96% and 90% of the cases in Turkey

Confronting the preferences of different online activities reported by the respondents, it is possible to observe some difference between countries with only secondary school's respondents and country with university student's respondents. More specifically, it is the use of Social Network Sites and Instant Messaging differentiating the two groups, as they correlate with the school level (Rho = ,347, p<,001 and Rho = ,276, p<,001), with a higher level of use reported by secondary school students. No significant difference is found among sexes, as the use of both ways of communication is equally distributed between boys and girls.

The simple frequency of use of mobile phones and Internet do not significantly correlate with the representation of the Internet expressed by the interviewed, as it happens also for the frequency of their use for studying, sending emails, surfing the web and watching movies or listening to music. As showed in the following table, though, the use of Social Network Sites and Instant Messaging correlate in significant way, but with variable strength, with all of the statements detecting the representation of ICT among the interviewed. The strongest correlation is found between the level of use of SNS and IM and the belief that with Internet and mobile phone sit's easier to make peace (rho= -,237, p<,001 and rho= -,260 p<,001) or that in Internet it's easier to say more nice things that one would not say in person (rho= -,170, p<,001 and rho= -,180 p<,001). The more the

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

respondents are inclined to take advantage of the networking potentialities of Internet and Mobile phones, the more polarized their representation on the ICT as media of interpersonal relationships are, and the more positive they tend to be.

Correlations

			Social Networks	Instant Messaging
Spearman rho's	Instant Messaging	Correlation Coefficient	,486[**]	1,000
		Sig. (2-tailed)	,000	.
		N	1325	1334
	with a text I can say what I really think	Correlation Coefficient	-,160[**]	-,164[**]
		Sig. (2-tailed)	,000	,000
		N	1328	1328
	in Internet it's easier to misunderstand	Correlation Coefficient	-,054[*]	-,067[*]
		Sig. (2-tailed)	,050	,014
		N	1323	1323
	with Internet and mobiles it's easier to make peace	Correlation Coefficient	-,237[**]	-,260[**]
		Sig. (2-tailed)	,000	,000
		N	1322	1322
	my friendships are better since I have a mobile	Correlation Coefficient	-,147[**]	-,118[**]
		Sig. (2-tailed)	,000	,000
		N	1318	1318
	with Internet I say more nice things	Correlation Coefficient	-,170[**]	-,180[**]
		Sig. (2-tailed)	,000	,000
		N	1322	1322
	with Internet I say more mean things	Correlation Coefficient	-,101[**]	-,122[**]
		Sig. (2-tailed)	,000	,000
		N	1328	1328
	school would be better without mobiles	Correlation Coefficient	,080[**]	,085[**]
		Sig. (2-tailed)	,003	,002
		N	1330	1330

Nonparametric correlations between the use of SNS and IM and ICT representation.

5.3.2   Cyberbullying

In order to confront countries on the global levels of cyber victimization and bullying, the scores of each different item of the victimization set and bullying set are added up to create two global index called "victim global level" and "bully global level".

The distributions for these variables are highly skewed, with a high concentration of participants scoring eight or nine (i.e., never or just once involved) and a precipitous decline in the distribution of participants across the higher scores. Hence these variables are dichotomized, with comparisons made between those participants who reported not engaging in these types of activities (scoring 8 and 9) with those who reported doing so two or more times in the last 6 month. The uninvolved group includes also all the subjects that report only 1 incident within the last six months, as the criteria of repetition in time don't apply to them.

When observing the distribution of the reporting of episodes of cyberbullying as victims, the sample can be dived into two main groups, 43% of the respondents

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

uninvolved and 57% of the respondents involved in at least two episodes of cyberbullying in the six month previous the administration of the questionnaire. The same division can be done on the cyberbullying behaviours that the respondents report having carried out, and in this case the distribution is of 50% uninvolved and 50% involved.

The crossing of this data allow to create four different categories of involvement, ad in this case the distribution is of 35% of the respondents uninvolved in cyberbullying in any way, 16% involved only as victims, 9% involved only as bullies and 41% involved as bullies-victims.

It is interesting to observe that the distribution is quite different between secondary school and university students, with secondary school students significantly reporting higher level of involvement both as victims (Kendall's tau b = -,260; p<,001), bullies (Kendall's tau b = -,298; p<,001), with consequently high correlation also between the group of involvement and the school level (Kendall's tau b = -,301; p<,001) while the impacts of age disappear when correlating the variables of cyberbullying with secondary school respondents and university respondents separately. This shows a (this is strange, I'm not sure what you mean) and a considerable gap between the experiences of the two groups of respondents.
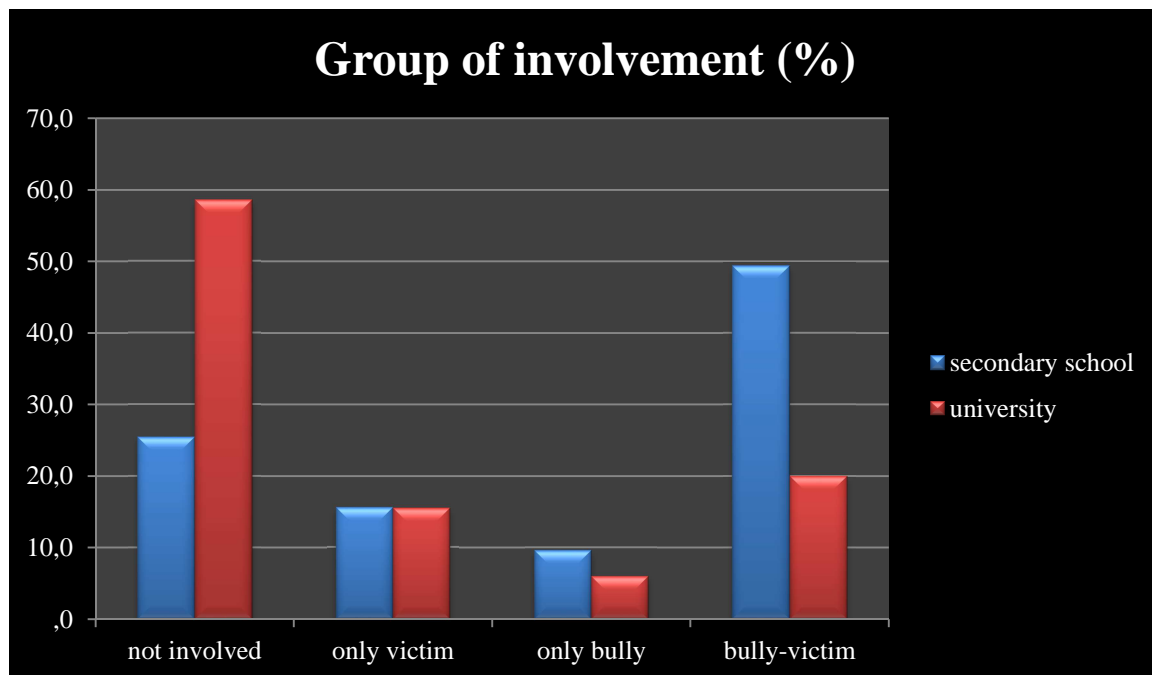
Percentages of distribution among the four group of involvement of secondary school and university respondents

As it is possible to observe confronting the distribution of involvement the percentages in the victim only and bully only groups do not change considerably, while a major shift happens from the uninvolved to the bully-victim group between secondary school and university respondents. The bully-victim group is somehow the most peculiar to cyberbullying, and the relevance that this kind of position held in this phenomenon appears clearly by this first analysis.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

When observing the differences in the ICT use between groups, the most significant ones are those related to the use of instant messaging (Cramer's V = ,169 p<,001) and social networks (Cramer's V = ,201; p<,001). In the case of instant messaging, it is possible to observe that the higher level of use is reported by the bully-victim respondents, closely followed by the bullies only, while victim only signal a less frequent use and uninvolved are those using IM less often. In the case of social network sites, the classification is the same, but while bullies-victims report frequent use of them in the 88% of the cases, bullies only and victim only share a lower frequency, respectively 76% and 72% reporting frequent use, and uninvolved respondents declare the lower level of use, with "only" 50% of the respondents indicating a frequent use of them.

Crosstab

% within group of involvement

		Always		Often		Sometimes		Rarely		Never	
		IM	SMS	IM	SMS	IM	SMS	IM	SMS	IM	SMS
Group of involvement	uninvolved	23,3	32,7	19,5	28,3	25,3	11,5	19,3	9,2	12,6	18,2
	victim only	27,3	51,3	26,3	21,8	21,1	12,4	19,1	4,7	6,2	9,8
	bully only	40,4	53,3	22,0	23,4	14,7	6,5	11,9	4,7	11,0	12,1
	bully-victim	48,2	69,3	24,3	18,9	13,3	5,6	9,4	2,3	4,8	3,9

Distribution of the frequencies of IM and SNS use among the four groups of involvement.

The questionnaire asked the respondents to state the frequency of occurrence, during the previous six month, of eight cyberbullying behaviours. Respondents had to indicate if they have been victim and if they had carried out such behaviours. In both cases, the frequencies indicated by secondary school students and university students significantly differ, with secondary school students indicating a higher level of involvement.

As introduced at the beginning of this chapter, the frequency of the single items are added up to create two indicator, one called "Victim global level" and the other called "Bully global level", and allowing to see for each subject, who may have been involved in different kind of cyberbullying behaviours, the overall figures. Also in this case the difference between secondary school students and university students is significant for both the victims (Kendall's tau c = -,305; p<,001) and the bullies (Kendall's tau c = -,339; p<,001).

Overall, the 46% of the respondents have been victim of at least one prank calls, the 32% of the diffusion of an online gossip, the 29% of an unpleasant comment on a Social Network page, the 25% of the publication of a private message, and again the 25% received a mean, aggressive or threatening email, the 19% had an embarrassing photo or video published online without prior consent, the 14% suffered of online ID theft and finally 10% was excluded from an online forum.
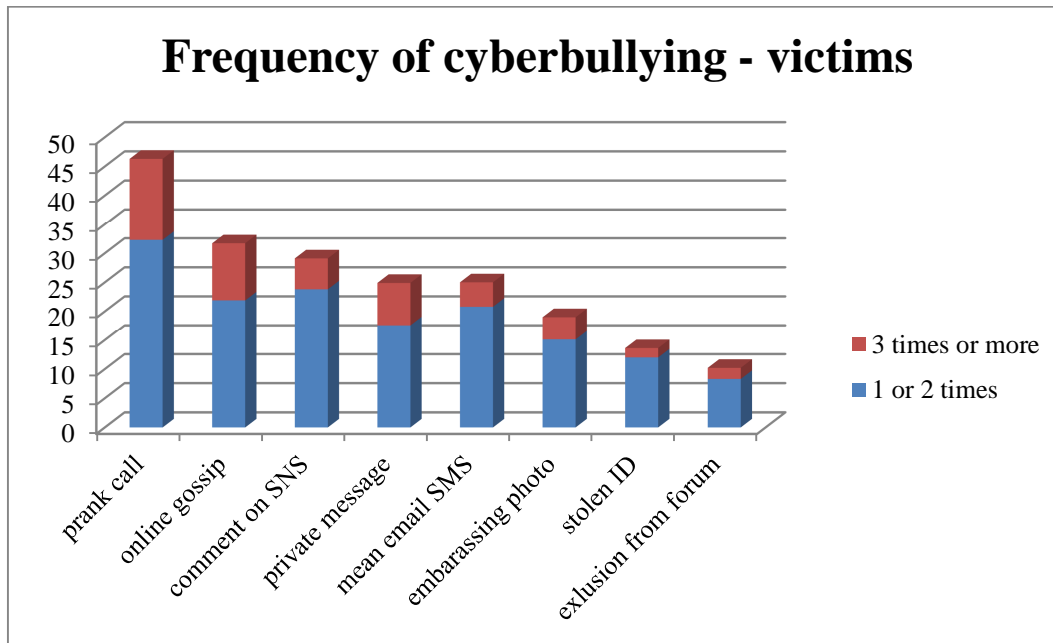
Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Percentages of respondents who have been victims of cyberbullying in the six months preceding the investigation

When assessing the frequency of bullying behaviours carried out, the 43% of the respondents state to have done at least one prank call during the previous six months, 27% left an unpleasant comment on someone's Social Network profile and again 27% of the respondents diffused some gossip online, 26% published or shared with friends someone's private message, 17% sent a mean or threatening email or text message, 13% excluded someone from an online forum and 9% stole someone's online identity. It is important to remember that in both cases the frequency are based on self-reported assessment, and that although the questionnaires were anonymous, most of the behaviours listed are not only considered to be "bad", but may as well break national laws.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
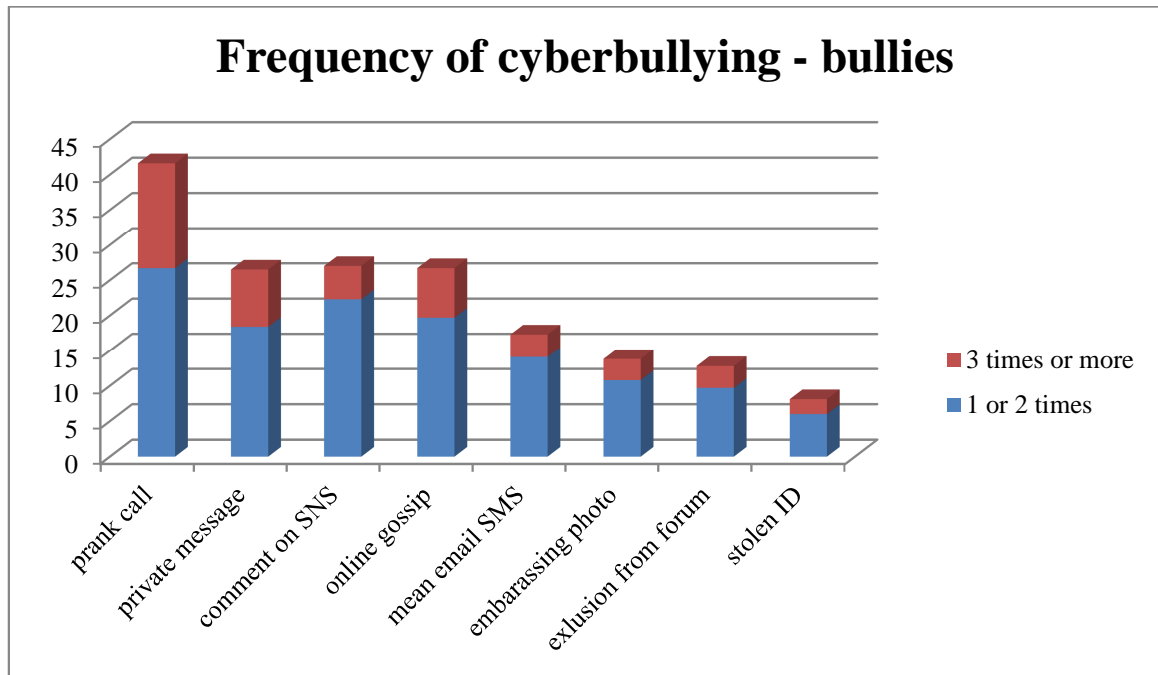
Percentages of respondents who have carried out cyberbullying actions in the six months preceding the investigation.

The level of global victimization and global bullying are strongly correlated (Kendall's tau b = ,514; p<,001). The online activities significantly correlated with the level of victimization and bullying are primary the use of social network (Kendall's tau b = -,261; p<,001 and Kendall's tau b = -,278; p<,001) and instant messaging (Kendall's tau b = -,199; p<,001 and Kendall's tau b = -,234; p<,001); followed by the download or streaming of music and movies (Kendall's tau b = -,161; p<,001 and Kendall's tau b = -,182; p<,001) and the (not so diffused anymore) chat in forum (Kendall's tau b = -,140; p<,001 and Kendall's tau b = -,163; p<,001). The level of mobile use do not correlate significantly with any of the variable, while the internet use correlate only very weak with the global level of bullying. In all the listed cases, higher level of reported victimization and bullying correlate with higher level of frequency of the online activities.

Correlations

Kendall's tau_b		Victim global level	Bully global level
Victim global level	Correlation Coefficient	1,000	,514**
	Sig. (2-tailed)	.	,000
	N	1299	1265
Bully global level	Correlation Coefficient	,514**	1,000
	Sig. (2-tailed)	,000	.
	N	1265	1279
Internet use frequency	Correlation Coefficient	,034	,076**
	Sig. (2-tailed)	,140	,001
	N	1292	1272
Instant Messaging	Correlation Coefficient	-,199**	-,234**
	Sig. (2-tailed)	,000	,000
	N	1285	1266

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

chat in forum	Correlation Coefficient	-,140[**]	-,163[**]
	Sig. (2-tailed)	,000	,000
	N	1278	1259
social networks	Correlation Coefficient	-,261[**]	-,278[**]
	Sig. (2-tailed)	,000	,000
	N	1286	1266
download music/movies	Correlation Coefficient	-,161[**]	-,182[**]
	Sig. (2-tailed)	,000	,000
	N	1291	1271

Nonparametric correlations between the global levels of victimization and bullying and the frequencies of ICT use.

When confronting the opinion expressed by the respondents on ICT as media for interpersonal relationships, significant correlations are found between the level of reported victimization and bullying and five of the listed item. The respondents reporting higher level of victimization and bullying are also more prone to agree with the statements "with Internet and mobile phones it's easier to make peace" (Kendall's tau b = -,121; p<,001 and Kendall's tau b = -,132; p<,001); "on the internet I can say nice things to people I wouldn't say face to face" (Kendall's tau b = -,119; p<,001 and Kendall's tau b = -,127; p<,001); "my relationship with my friends has improved since I had a mobile phone" (Kendall's tau b = -,116; p<,001 and Kendall's tau b = -,121; p<,001); "on the internet I can say mean things to people I wouldn't say face to face" (Kendall's tau b = -,097; p<,001 and Kendall's tau b = -,123; p<,001) and "with a text sms I can say to other boys/girls what I really think" (Kendall's tau b = -,076; p<,001 and Kendall's tau b = -,108; p<,001).

Correlations

Kendall's tau_b		Victim global level	Bully global level
with a text I can say what I really think	Correlation Coefficient	,076[**]	,108[**]
	Sig. (2-tailed)	,001	,000
	N	1292	1272
with Internet and mobiles it's easier to make peace	Correlation Coefficient	,121[**]	,132[**]
	Sig. (2-tailed)	,000	,000
	N	1285	1265
my friendships are better since I have a mobile	Correlation Coefficient	,116[**]	,121[**]
	Sig. (2-tailed)	,000	,000
	N	1281	1262
with Internet I say more nice things	Correlation Coefficient	,119[**]	,127[**]
	Sig. (2-tailed)	,000	,000
	N	1286	1267
with Internet I say more mean things	Correlation Coefficient	,097[**]	,123[**]
	Sig. (2-tailed)	,000	,000
	N	1291	1272

Nonparametric correlations between the global levels of victimization and bullying and ICT representation.

The global level of bullying show higher level of correlation than the global level of victimization with both the set of variables assessing ICT use and the one assessing ICT representation.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

5.4   Are you concerned?

One of the issues related to cyberbullying is the level of awareness that adolescents have of the negative implications of these kind of behaviour. The questionnaire presented two different sections devoted to the collection of data on the representation of cyberbullying among the respondents. One set of questions simply asked the students to evaluate how acceptable they considered a list of online misbehaviours, assessing a more abstract kind of representation. Two more set of questions followed the scenario's depicting different cyberbullying episodes, that students had to evaluate assessing the relative gravity of the episodes, and indicating who they would held responsible for the problem arisen. The questionnaires were constructed in order to be slightly different in the victim characterization. The protagonist of the second scenario was presented as less likeable, with the aim of differentiating the empathic response and eventually the judgment of the situation between the two scenarios.

The eight items addressing the evaluation of each behavior form the Cyberbullying evaluation scale (Cronbach's Alpha = ,806), and the sample can be divided into three groups, of light, moderate and high rejection. Once again the distribution is quite different between secondary school and university, with secondary school respondents showing a more favorable approach to this kind of behavior.
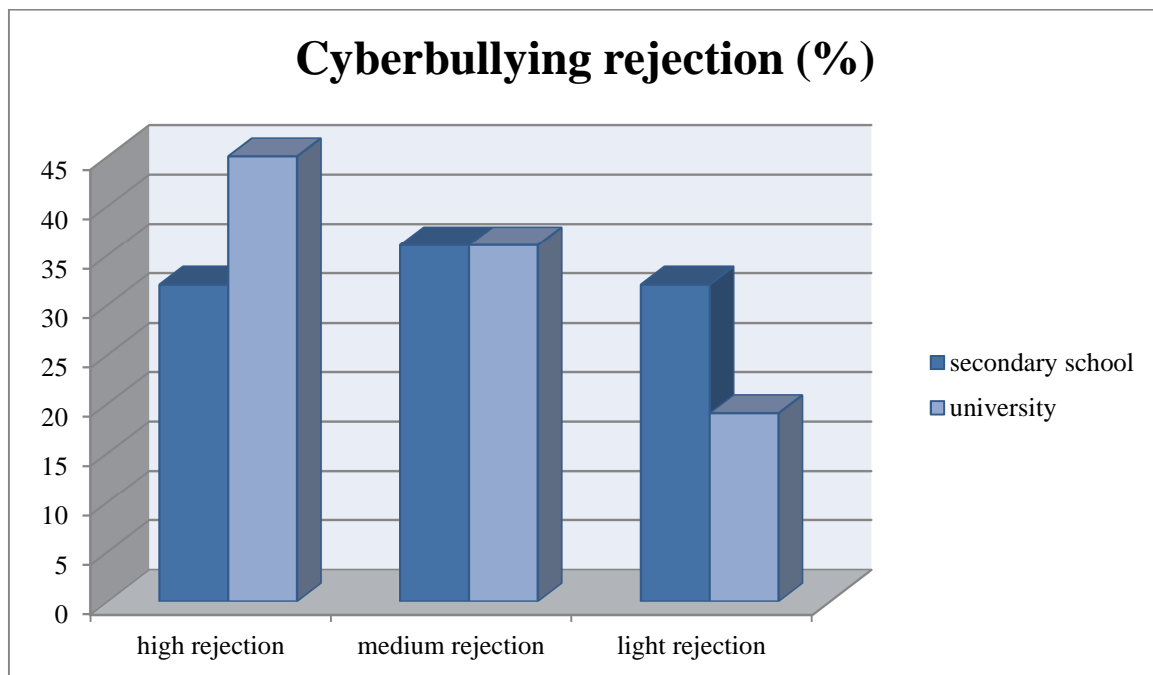
Distribution among the three groups of cyberbullying rejection in secondary school and university respondents.

Cluster analysis on the Webpage scenario

In this scenario the story involved the creation of a "hate-page" on a popular social network, addressed to a girl by some jealous schoolmates.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The sample is divided between respondents evaluating as more severe the submitted scenario, and more prone to see the bully and the whole community as culpable, and those who see the scenario as not very worrisome, and tend to distribute the responsibility between all the subjects involved, victim included.

Web scenario's evaluation

	Cluster	
	Concerned	Unconcerned
webpage very funny	4,78	3,62
webpage just a joke	4,46	3,50
webpage bad thing	1,33	2,50
webpage I don't know	4,37	3,29
webpage is bully's fault	1,76	2,49
webpage is victim's fault	4,34	3,42
webpage is shared fault	1,87	2,65
webpage is Internet fault	2,05	2,65

Mean scores of concerned and unconcerned respondents on the variables defining the groups

The 64% of the sample belong to the concerned group, (n= 860) and the remaining 36% to the "unconcerned" one (n = 487).

The proportion of concerned and unconcerned is fairly distributed between secondary school and university students, and no correlation is found between the school level and the concernment expressed.
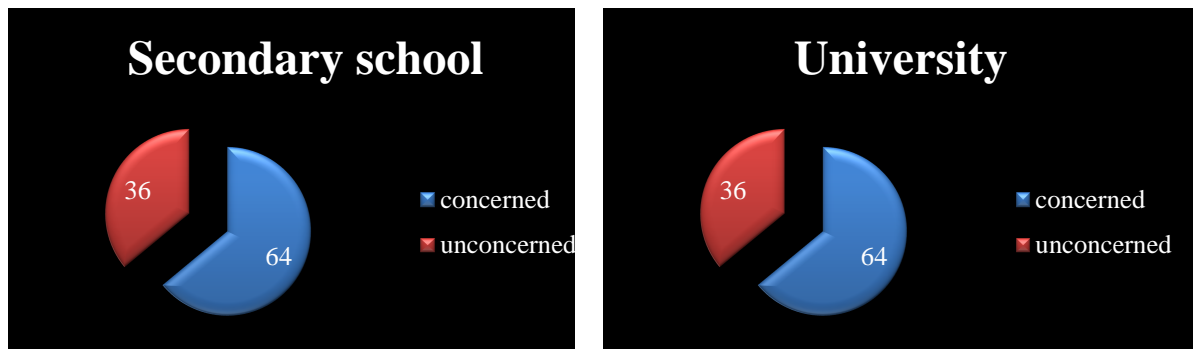
Factor analysis on the text message scenario

In this scenario a student refuses to pass the results of a test to a schoolmate, and as revenge his mobile number is sent to class mates and school mates along with a derogatory message. The student then starts receiving very unpleasant messages and phone calls.

Also in this case the sample is divided between concerned and unconcerned respondents, on the bases of the answers given to the sets of questions assessing the evaluation of the gravity of the episode and the assignation of responsibilities. As it

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

happened with the previous scenario, the concerned group is composed of respondents evaluating the situation more severely, and holding responsible mostly the bully and the rest of the involved adolescents. The unconcerned respondents evaluate the whole situation as less severe and funnier, and tend to distribute the fault more evenly among the four possibilities, considering more often also the victim as one of the responsible parts.

Text scenario's evaluation

	Cluster	
	Concerned	Unconcerned
text story is funny	4,78	3,66
text story is just a joke	4,50	3,37
text story is bad	1,41	2,79
text story I don't know	4,31	3,41
text story is victim's fault	4,30	3,15
text story is bully's fault	1,97	2,66
text story is shared fault	1,69	2,38
text story is mobile phone's fault	2,54	3,06

Mean scores of concerned and unconcerned respondents on the variables defining the groups

The 62% of the respondents belongs to the group of "concerned" students (n = 839), while the remaining 38% falls into the "unconcerned" group (n = 508). The proportion of unconcerned students in this case is a bit higher if compared with the previous scenario. As already anticipated, the text message scenario has a weaker characterization. In this scenario the victim is more easily seen as culpable of the joke he is victim of, and this makes the distinction between concerned and unconcerned more subtle.

Although the position of the respondents in the two groups between one scenario and the other shows a strong correlation (phi=,341, p < ,001) the distribution of concerned and unconcerned respondents in this case correlate with the school level, as university students express a significantly higher level of concern when compared with the younger respondents (Kendall's tau b =-,134; p<,001).
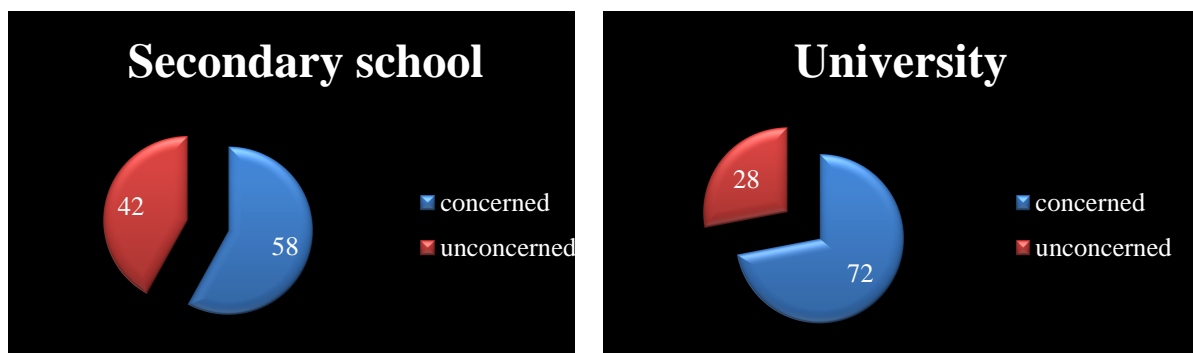
Representations and actual behaviours (say what you think and do as you say)

The opinion expressed when evaluating abstract behaviours or a hypothetical situation do not necessarily predict actual behaviours. In this case it was possible to confront the

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

differences in the opinion expressed by the respondents on the basis of their belonging to one of the four categories of involvement.

First, the correlation between group of involvement and evaluation category is calculated. The correlation is moderate (Cramer's V = ,303; p<,001) while the prediction of group of involvement on the bases of the opinion expressed only show a weak correlation (Lambda = ,231; p<,001). The respondents evaluating cyberbullying in a less serious way are also more likely to belong to an involved category, mostly to the bully-victim one, while high level of rejection is expressed by the members of the victim only group.
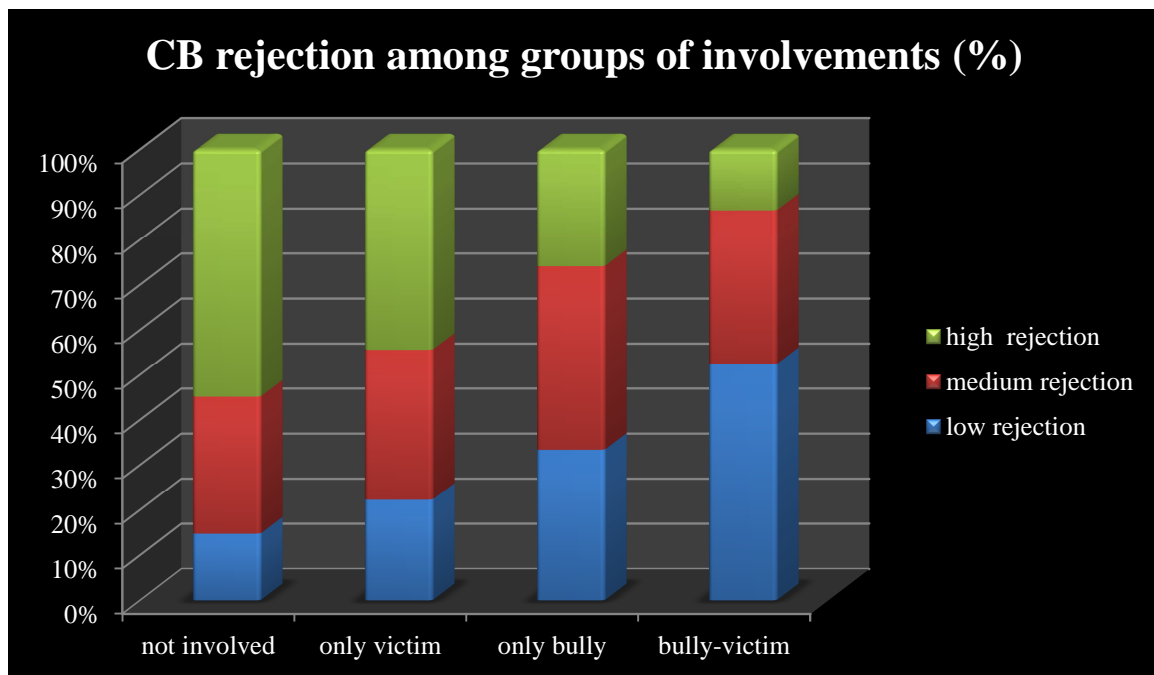
Percentages of distribution in CB rejection among the four groups of involvement.

The same analysis is then applied to the division between concerned and unconcerned operated on both scenarios. The respondents showing deeper concern about the "hate-page" scenario are equally spread among the four categories of involvement, with no significant correlation found. The evaluation of the situation as more unacceptable in this scenario doesn't associate with a weaker propensity to carry out cyberbullying actions.
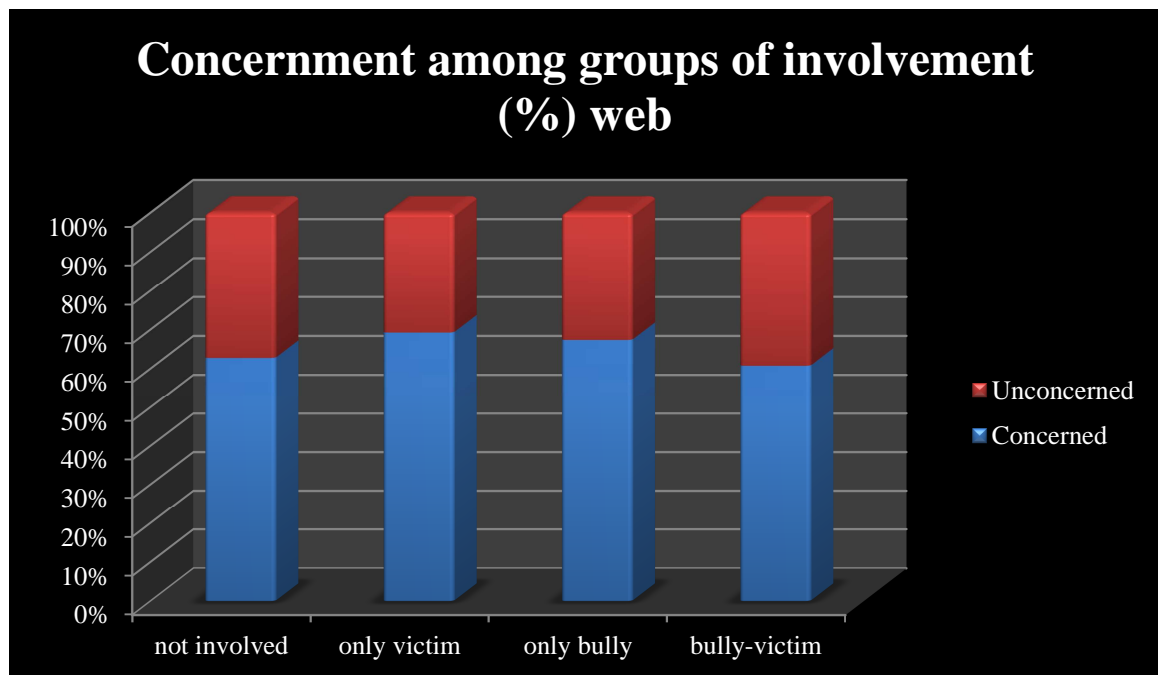
Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Distribution of concerned and unconcerned respondents among the four groups of involvement

When repeating the same analysis on the categories based on the second, "weaker" scenario, the association between the level of concern and the group of involvement becomes significant, still remaining very weak (Cramer's V = ,158; p<,001).

Once again the real shift of positions is between the "uninvolved" vs. "bully-victim" groups. The second scenario seems to be less easy to identify as a wrong situation, and the respondents belonging to the bully-victim group are more prone in this scenario to show unconcerned evaluations than they were with the previous one. This would support the idea of bully-victim as mostly careless offenders, motivated more by lack of concern than desire to hurt.
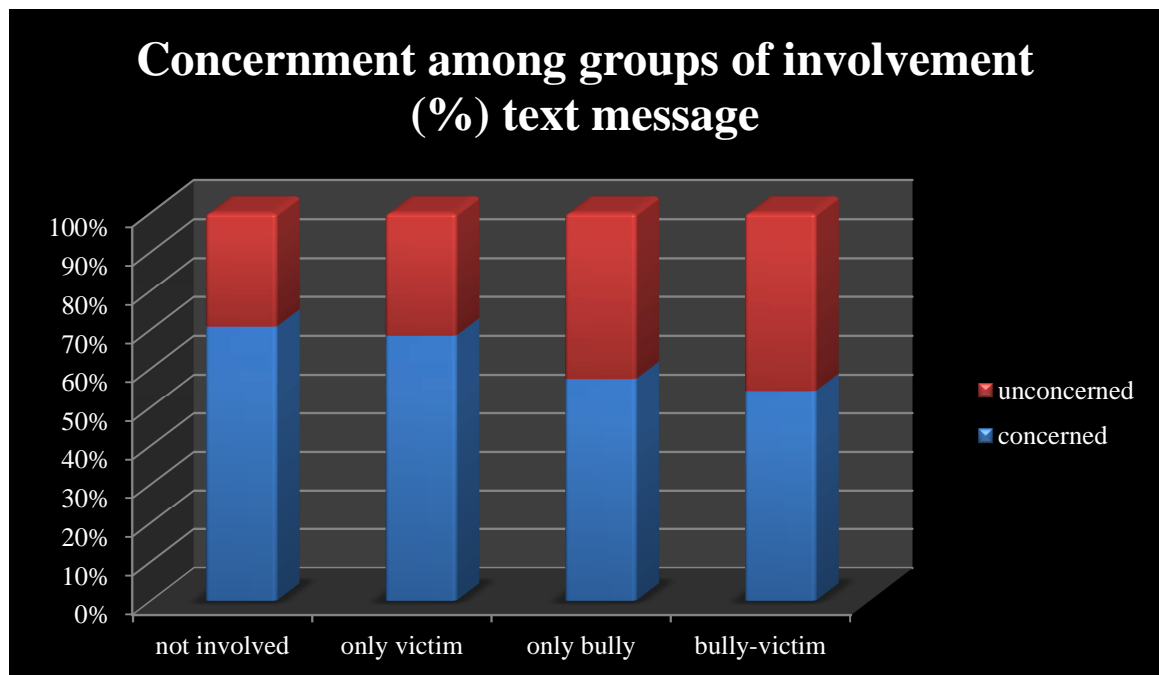
Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Concernment among groups of involvement (%) text message

Distribution of concerned and unconcerned respondents among the four groups of involvement

Confirming the difficulty of maintaining coherence between abstract values, opinions on concrete situations and actual behavior, the correlation between being concerned in both scenario and evaluating the singles acts of cyberbullying as more or less acceptable is a fairly weak one: The correlation is higher between the evaluation and the concernment expressed in the text message scenario, as it was expected given the more subtle connotation of the scenario in discriminating the attitude of cyberbullying condemnations.

Correlations

	Cramer's V	Approx. Sig
Web scenario*Evaluation category	,165	,000
Text scenario*Evaluation category	,239	,000

Correlation between cyberbullying evaluation and concernment expressed in both scenarios.

Analyzing in a closer way the relation between the concern expressed and the personal experiences of cyberbullying, is possible to see that the concern showed on the web scenario doesn't correlate significantly either with the overall level of reported victimization or the overall level of reported bullying, while the classification based on the second scenario shows significant levels of correlation with both variables, as it does the cyberbullying evaluation index.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Correlations

	Kendall's tau c	Approx. Sig.
Victim Global level*Web concern	,015	,541
Bully Global level * Web Concern	,045	,070
Victim Global level*Text concern	,087	,000
Bully Global level * Text Concern	,170	,000
Victim Global level* CB evaluation index	-,285	,000
Bully Global level* CB evaluation index	-,389	,000

Correlation between the global level of victimization and bullying and different indicators of CB evaluation

The tables show the number of episodes signaled from the respondents both as victims and bully. The distribution is based on the within group percentages, giving the distribution of level of harassment for each group. The trend is similar in both cases, but more evident when applied to the bullies' behaviours: concerned respondents have higher percentage on low level of cyberbullying, while the unconcerned ones gain the predominance on the higher scores.
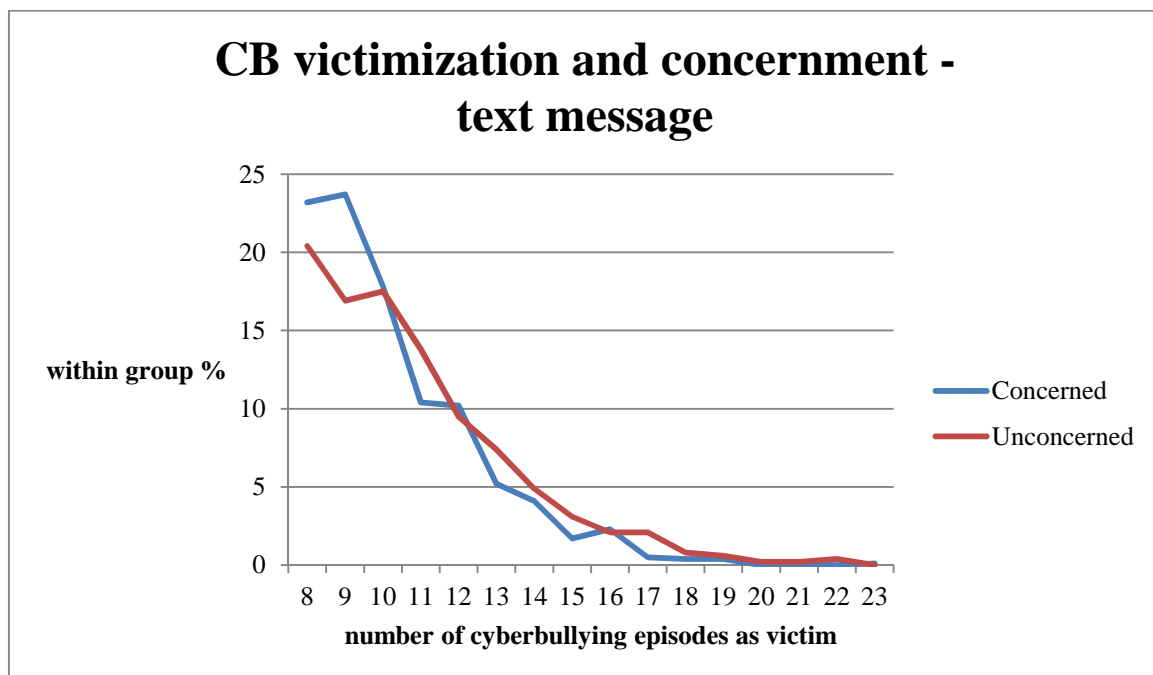
Concerned and unconcerned respondents' cyberbullying level of victimization.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

CB bullying and concernment - text message
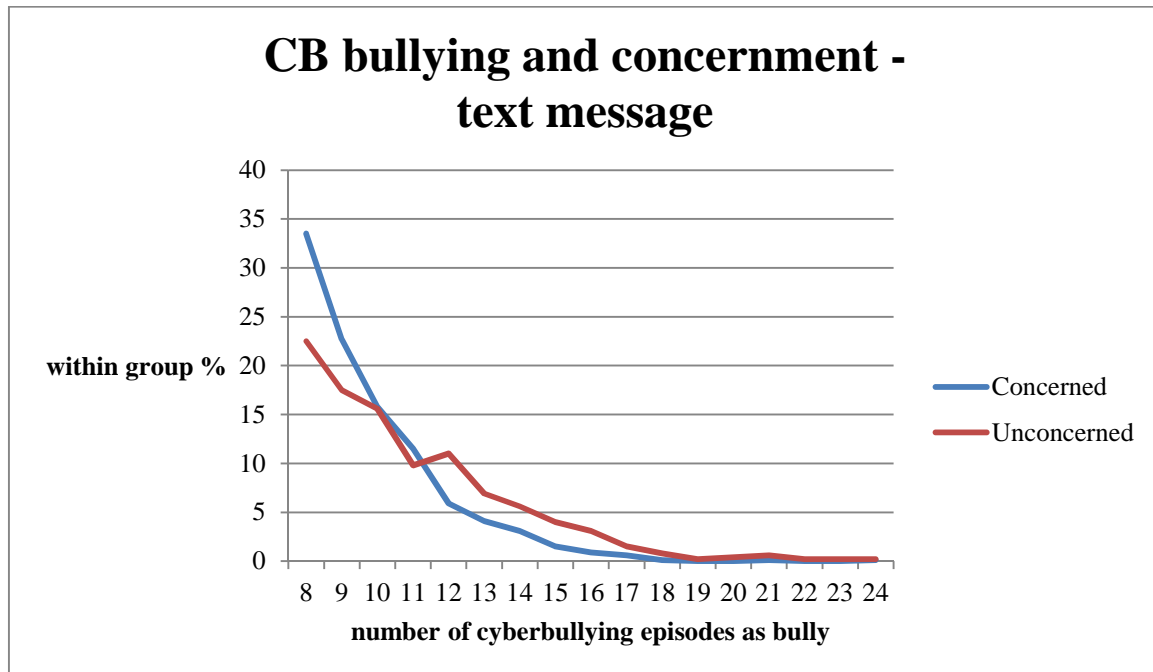
Concerned and unconcerned respondents' cyberbullying level of bullying.

From the evaluation of cyberbullying in itself, as a more or less serious problem, is possible to move to the impression that being involved in some act of cyberbullying in first person left on the respondents.

The evaluation of cyberbullying with light, medium or high rejection correlate only weakly with the evaluation given by the respondents as victims (Cramer's V = ,188; p<,001) and that given by the respondents as bullies (Cramer's V = ,215; p<,001). It is then interesting to try and understand who report higher level of distress when confronted with cyberbullying experiences.

5.5   The hurt part

"Most survivors of constant attacks by classmates are quiet about that fact as adults. Yet such survival exacts a price; four to six years in Hell cannot easily be forgotten. Some survivors are left with physical scars. All are scarred psychologically. Schools should truly be safe for all their students. Someday perhaps they will be. But as long as they are not, there need to be places where current and former outsiders can gather, for support in dealing with the status quo, and for help in changing it. That is why Raven Days was created."

www.ravendays.org

Internet is the main place where cyberbullying is happening. It is at the same time one of the first places where persons involved in such episodes look to, seeking more information, help, suggestions or useful contacts. While only the most tragic cases may make it to the news, in Internet also less extreme experiences find a space where they can

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

be shared. The Raven Days website, for instance, is a website devoted to bullying and cyberbullying prevention and victim's support, features an impressive number of first person stories of bullying experiences, all told by the victims, a constantly updated page with links to articles reporting teen' suicides connected with bullying and many other useful information. One of such examples is the article reporting the death of Megan Gillian for the overdose of painkillers "after classmates used the social networking website Bebo in a bullying campaign against her" (The telegraph, 30 July 2009)58 or that of Alexis Skye Pilkington, victim of a still ongoing (March 2011) Facebook hate campaign59.

Attention on bullying prevention has been heightened also by the link found between many cases of school shooting and previous experiences of victimization in the shooters, who decided, in this way, to "fight back" (Shariff 2009, Dedman 2000). Most of the school shooting episodes occurred in US, (one of the most notorious example is the Columbine High School massacre, where 12 students and one teacher died, killed by a pair of students), but recently similar cases happened in Europe as well. The Jokela School shooting in November 2007, in which nine people including the gunman were killed, and the Kauhajoki School shooting in September 2008, in which eleven people including the gunman were killed are two more example of school shooting by former bullying victims. Moreover, in these cases ICT seems to have played a relevant role in the months before the massacre, when both the students used their Youtube and social network accounts to gather information on the Columbine massacre and publicize their intentions[60]. The role played by bystanders such as other internet users who had been able to watch the declarations of the future killers but did nothing to prevent the episodes is further investigated in a report by the Chicago newspaper Sun-Times (2000), realized in collaboration with the US secret service. Among the major findings[61] of this study is the fact that many of the shooters saw the killing as a way to solve a problem, such as to stop bullying. The report include an interview with Evan Ramsey, who at the age of sixteen shot and killed his school principal and another student in 1997 in Bethel, Alaska He had been bullied by other boys and had tried to get the school administrators to put a stop to it, but when the solution didn't arrive decided to take action:

Q. "Why the school?"

58The news report of the case is available at http://www.telegraph.co.uk/technology/social-media/5933925/Schoolgirl-took-overdose-after-Bebo-bullying-inquest-hears.html

59 The news report of the case is available at http://law.rightpundits.com/?p=1370

[60] More information on both cases can be found at the following links:
http://en.wikipedia.org/wiki/Jokela_school_shooting and
http://en.wikipedia.org/wiki/Kauhajoki_school_shooting.

[61] Another very relevant conclusion emerging by the report is that there is no profile of a typical child who kills. The shooters come from many types of families, from all incomes, from all races, from all academic backgrounds. No easy explanations—mental illness, drugs, video games—explain their actions. No profile rules anyone in or out. The solution is indicate in actions such as listening to children, dealing fairly with grievances such as bullying and improving the climate of communication in schools. The same observations and principles are usually applied also when dealing with cyberbullying and bullying, phenomena that occur among kids of very different background.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

A. "That's where most of my pain and suffering was. I figured since the principal and the dean weren't doing anything that was making any impression, that I was gonna have to do something, or else I was gonna keep on getting picked on."

Searching the international news, reports of teen suicides or trials connected with cyberbullying are nowadays easily found. Sometimes their analysis reveals the difficulties still connected with identifying what kind of behavior should be considered cyberbullying, and how direct the relation is to the most tragic outcomes. First person reports of cyberbullying victims who decided to share their experiences, or sought assistance online, tell stories of deep suffering. The following lines are extracted from a Myspace page on cyberbullying created by the no profit organization Childline, and report the first person experience of a girl who was victim of cyberbullying. She decided to report what was happening to her and thus becoming actively involved in cyberbullying prevention.

"I'm only 14 but I still think about hurting myself all the time. The reason you will never know my real name is because you can't. They can't. I can never let them find me again. It all started off simple enough. Bullying at primary school. Not nice, but I could deal with it - or so I hoped. I was just about to go to secondary school and I knew that the older brother and sisters of my bullies we waiting for me there. I was scared. I started getting threatening mobile phone calls in the early hours of the morning. Sometimes, my phone would ring, and there would just be silence or sniggering at the other end. Then I started getting prank calls from older kids who had been given my number. They were awful. When I moved school, I was cornered by a group of older kids, who attacked me, pulled down my tracksuit bottoms and photographed me, and then they put the pictures of me all around the school. I had to move to a new school out of the area to give me a fresh start. That's why you'll never know my name. I can't help but wonder, if the bullies hadn't been encouraged - if people hadn't laughed at the photos and phone calls, would it have got that bad? I know it's pretty much impossible to stand up against bullies. I'm not asking you to do that. I just want you to think about whether you're making the problem worse. "

http://www.myspace.com/cyberbullying

The following two messages were left on a Facebook page, created by the organization beatbullying.org and dedicated to cyberbullying prevention. The first lines add another typical feature to the picture drawn by the victims: very often cyberbullied kids won't tell their parents what is happening; they are scared that as a consequence they will be deprived of their "digital privileges".

J.H.: I am cyber bullied everyday with insults and lies on the internet. It hurts so bad that I get stomach aches. I'm afraid to tell me parents. It might blow over but it hurts. What should i do?

On the other hand, the same website hosts a mother request for help: she is quite exasperated and at loss for answers to the cyberbullying that is happening to her daughter. Not only many parents may still not be very familiar with the ICT tools their kids use, but the lack of defined legislation and consolidated practices of prevention and intervention may make it very hard for them to effectively intervene.

C.H.: I have called police because my daughter has been bullied, I have contacted the parents and now the same girls are using the internet to bully my daughter. Where does it end? I know who they are. They go to her school and live in our neighbourhood. I don't have the energy to continuously fight this. These girls are like a nightmare that continues to be outside the realms of legal punishment.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

They are however barred from my daughters Facebook page but like I said, I have already called the police, and they are continuously finding new ways to bully. What would you do if you had a daughter in my shoes? Whether it is cyber bullying or bullying in person, there is no escape from the constant harassment of these girls. I see your point. Don't children have email, a Facebook page, or even a cell phone but at the same time, do you honestly think this is going to prevent this? She goes to school and gets bullied; she goes to our neighbourhood park and gets bullied. She is afraid to go everywhere and can't seem to get away from it. How much of her life should she spend not living because of them? Please. You obviously have no idea.

Not all cases of cyberbullying have such deep effects on the persons involved. The following lines were posted by a girl who seems to be able to cope quite well with a typical example of "mild" cyberbullying, at the same time pointing out the unavoidable negative effect that such an experience has on those who fall victim to it.

P.R.: I recently deleted some comments on Youtube from people saying I was fat and ugly. The picture I had up did not show my body and I am far from ugly. These things did hurt however. If I didn't have self-esteem these things could really affect my life. Why don't people think before they speak?[62]

This kind of answer to cyberbullying attacks seems to be quite widespread, and previous researchers have found that:

- being cyberbullied had no negative effect for over half (55%) of the respondents. Attitudes of dismissal are particularly common in cases of online harassment rather than cyberbullying. From the narrative responses, it is clear that many girls who experience name-calling, gossiping, and other common forms of adolescent harassment perpetrated online exhibit healthy resilience to this behaviour. (BurgessProctor, A., Patchin, J. W., and Hinduja, S. 2010).
- The majority of online harassment incidents were not distressing to targets. Unfortunately, our data did not yield much information about characteristics associated with distress over online harassment by known peers, once high Internet use was controlled for (Janis Wolak, J.D., Kimberly J. Mitchell, Ph.D., and David Finkelhor 2007)
- Although different kind of evaluation denote, for instance, that the students who reported being cyber victim indicated lower self-esteem and higher level of depressive symptoms (Hinduja, Patchin 2009, Erdur Tanrkulu 2010)

The following analyses try to assess the impact that cyberbullying had on the respondents to our questionnaire, both as victims and bullies.

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[62] All of these statements have been retrieved the 27 march 2011 on the Facebook page http://www.facebook.com/#!/EndCyberbullying, a web page that intend to promote information exchange on cyberbullying.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The crossing of the data reveal incongruence between the identities of the subjects who reported being involved in cyberbullying and that of the students who reported having been emotionally affected by it.

As the reason for this incongruence in the answers cannot be defined, the following analyses are conducted creating a subsample including only the respondents who reported being involved in at least one episode of cyberbullying.

The following tables reports the percentage of distribution of the two items asking the respondents to evaluate their experience of cyberbullying, both as victims or as bullies, on a five point scale going from "Extremely upsetting" to " Extremely funny". The data are divided between secondary school and university respondents.

Overall, as victims, the respondents tend to evaluate the experience of cyberbullying as mainly irrelevant (53.4%), quite upsetting (25.9%) and extremely upsetting (9.6%). The tendency to evaluate negatively the experience is more relevant among university students.

As bullies, once again looking at the whole sample, the respondents show an overall opposite trend. While the percentage of respondents evaluating the experience as irrelevant (49.5%) is still considerable, the proportion of respondents rating it as quite funny (26%) and extremely funny (7.7%) is specular to the ones given as victims.
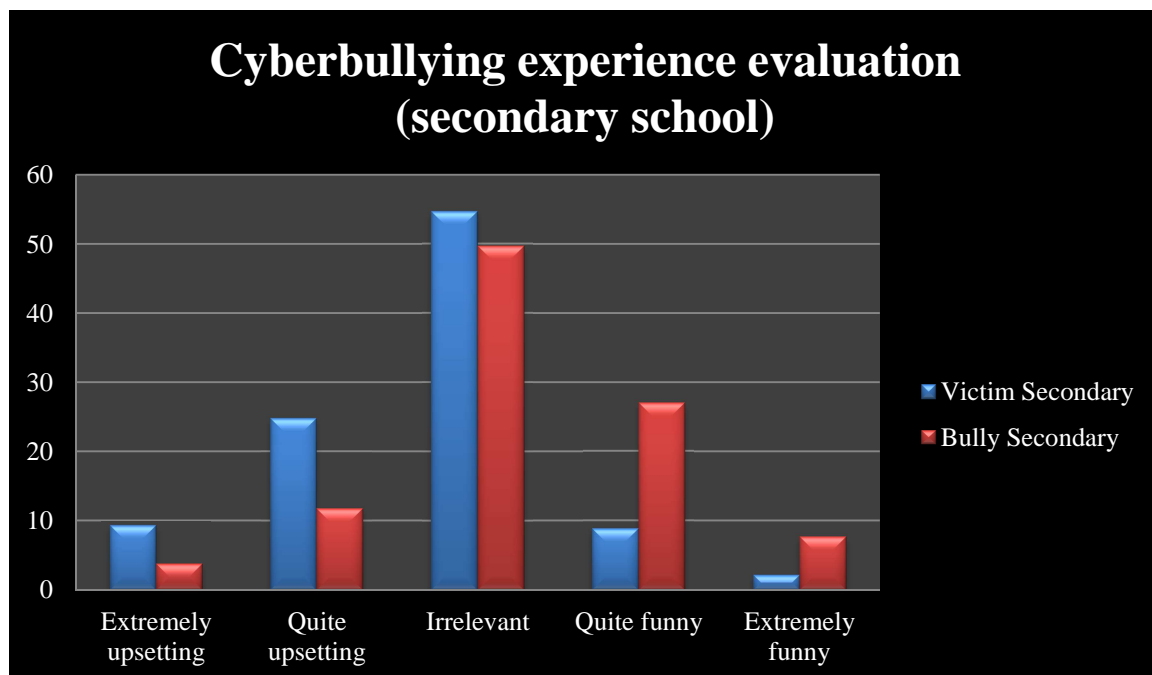
Evaluation of the experience of being target and perpetrator of cyberbullying among secondary school respondents.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
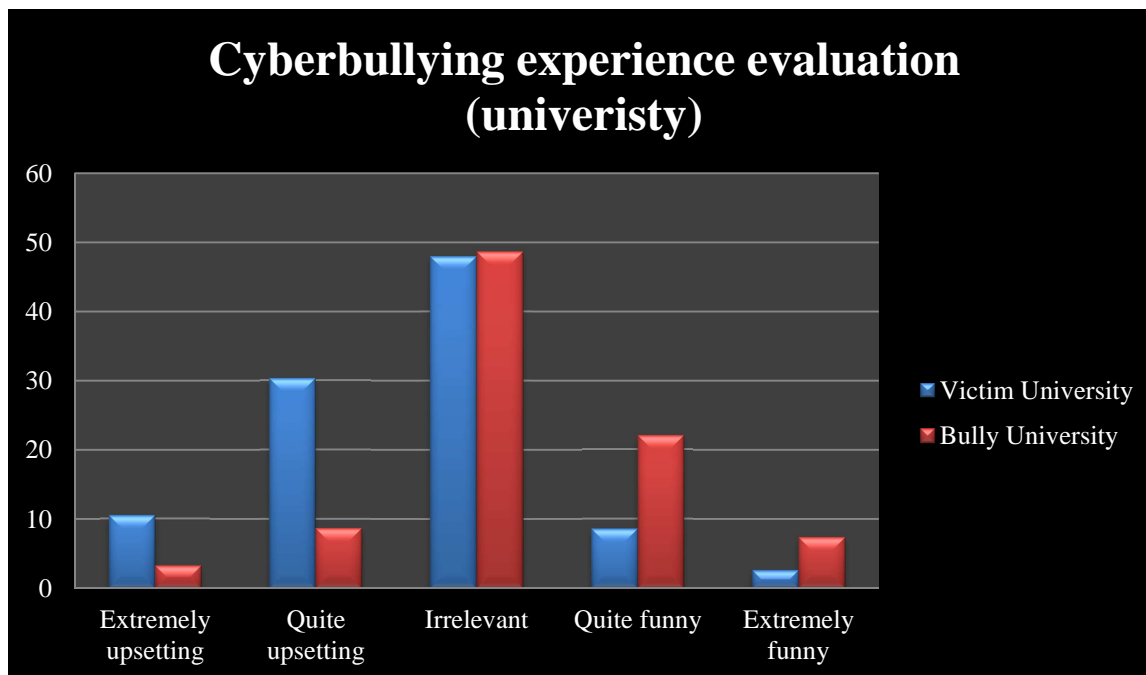
Evaluation of the experience of being target and perpetrator of cyberbullying among secondary school respondents.

The data just presented seem to highlight a gap in the transition of a negative evaluation elaborated from the experience as victim to a similar evaluation of the experience as bully. A good part of the respondents are likely to evaluate being target of cyberbullying as an unpleasant experience, but to do the same to someone else as a funny one.

The correlations between the global level of victimization and the victim evaluation of the experience is a very weak one (Kendall's tau-c = -,095; Sig.< ,000), and it becomes only slightly higher between the global level of bullying and the bully's evaluation of the experience (Kendall's tau-c = -,167; Sig.< ,000). These findings seem to support the hypothesis that, in this specific area, "size doesn't matter", and the impact of the jokes is not closely related to their frequency.

However the correlation between victim and bully evaluation of the experiences of cyberbullying (Kendall's tau-b =,391; Sig.< ,000) is quite high. Therefore we can imagine that the sample is composed of a part of students deeply affected by the experience, and partly of others less involved and affected by it, and that this feeling is not directly correlated with the frequency of involvement in cyberbullying episodes.

For the following analysis, the subsample is divided in two groups, composed of the upset and not upset respondents for both the variables of cyberbullying personal evaluation. When evaluating the experiences as victims, 38,5% of the sample is upset by them, while only 17% report being upset by their experiences as bullies. While most of the respondents who report being upset by the cyberbullying experience as bullies are upset also in the role of victims, the opposite thing is not verified, and most of the upset victims are not upset by the experiences as bullies (63%).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Cross tabulation

		Bully		
		not upset	upset	Total
Victim	not upset	60%	4%	64%
	upset	23%	13%	36%
Total		83%	17%	100%

Overall percentages of respondents' distribution between upset and not upset group as victims and as bullies.

Who are the upset respondents?

There is a weak but reliable correlation between sex and victim's evaluation, as girls tend to be upset more often than boys (Phi = ,204; Approx. Sig. = ,000). The same trend is verified with the bully's evaluation, although the association is very weak (Phi = ,111; Approx. Sig. = ,000).

Upset respondents tend to be slightly older, but also in this case the correlations are weak, and their distribution is quite even between secondary school and university (as victims Phi = ,106; p<,001 and as bullies Phi =,079; p<,001) .

No relevant correlation is found between the dichotomized variables "upset" "not upset" and the frequency of use of mobile phone and Internet, as much as with the different Internet activities listed.

When confronting the two group on their opinion related to ICT and interpersonal relationships, significant difference is found on "In Internet is easier to misunderstand each other" (Upset victim has Gamma = ,240; p<,001. Upset Bully has Gamma = ,199; p <,01): this opinion is more supported by the upset part of the respondents. The item "On the internet I can say nice things to people I wouldn't say face to face" show a significant but very weak correlation (Gamma = ,116; p<,05).between being upset as a victim and agreeing with the statement. Overall, the impression is that the representation of ICT and the role they play in interpersonal relationship do not differ significantly between respondents who are affected by the episodes of cyberbullying and those who find them irrelevant or funny.

In order to verify the eventual difference in the impact of the various kind of cyberbullying listed in the questionnaire, another set of analysis is run.

The victim evaluation of the experience as unpleasant is significantly correlated with the frequency of victimization by mean email or text message (Cramer's V = ,217; Approx. Sig. = ,000); mean comment on a social network page (Cramer's V = ,145; Approx. Sig. = ,000); online gossiping (Cramer's V = ,129; Approx. Sig. = ,001); online ID theft (Cramer's V = ,122; Approx. Sig. = ,003). The following table reports the relative percentage of frequency of the most significant items for the two groups, allowing a better understanding of the direction of the relationships. Among the respondents who suffered of at least one cyber-attack, those who report the experience as unpleasant are significantly more often target of a mean or threatening email or sms, mean comment on a social network page, online gossiping and, in a lesser way, online ID thief, while the frequencies of the other items do not differ significantly between the two groups.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
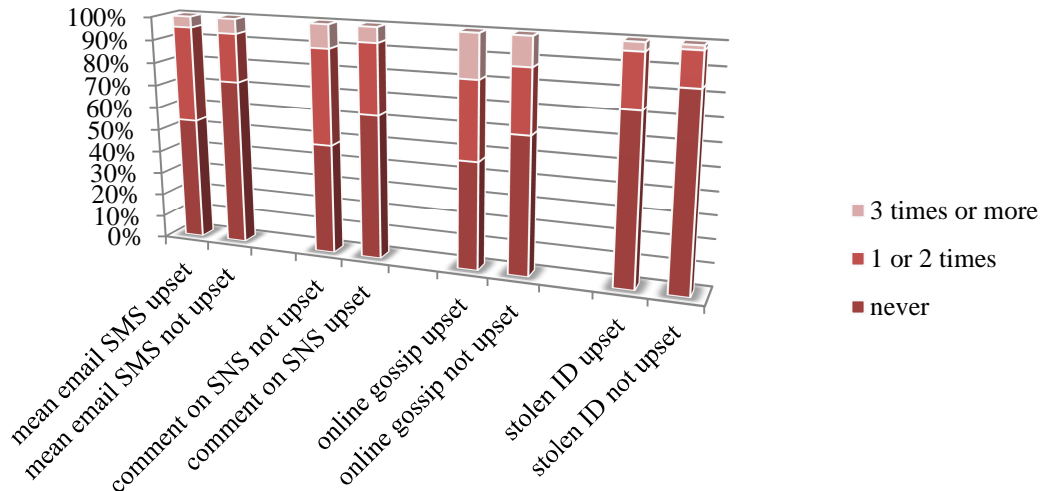
Differences in the item frequency among upset and not upset respondents

Observing the distribution of the answers to the item related to the feeling as a victim, it is necessary once more to rule out of the analysis part of the respondents. Some of the respondents belonging to the bully only group gave their answer also to this question, It's possible to imagine that these respondents were evaluating experiences they did not report in the previous questions, but as their reasons are once more not explicable, it appear more significant to compare the only the opinions expressed by the respondents belonging to the victim only and bully-victim groups. The two variable significantly differ, (Cramer's V= ,200, p<,001), and while most of the victim only respondents express a negative opinion on the experience, the bully-victim respondents mainly evaluate the experience as irrelevant.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Evaluation as victims
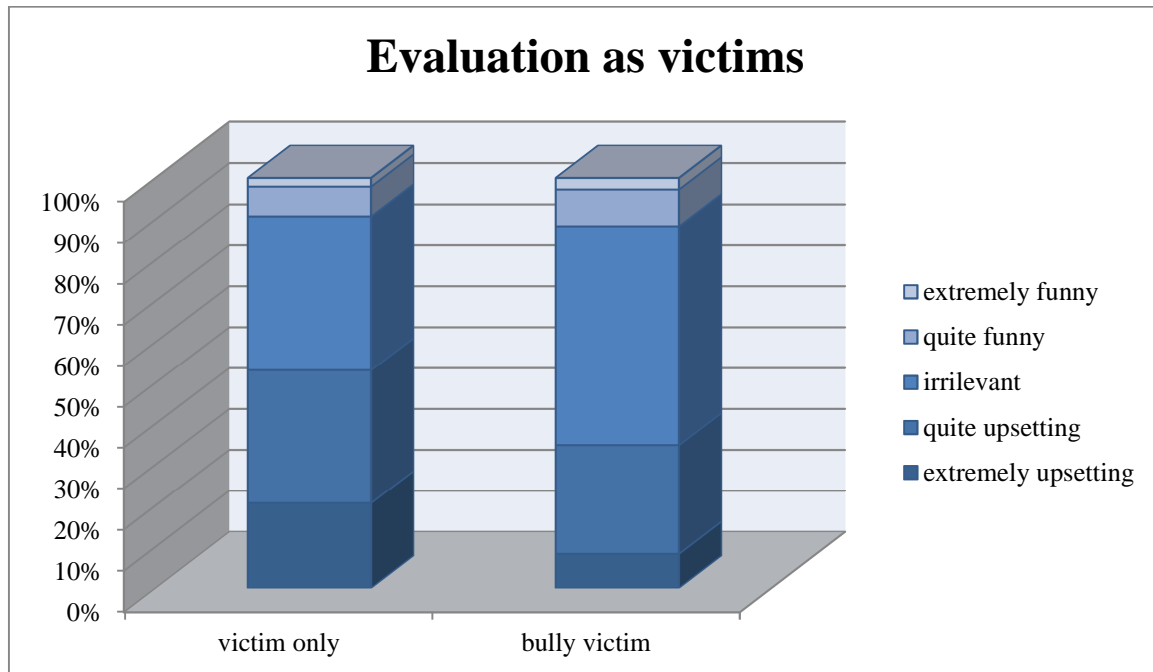
Difference in the evaluation of the CB experience as victims between respondents belonging to the victim only and bully-victim group.

If it is easy to imagine that the victim of a cyber-aggression may feel hurt, the following analysis tries to explore if the same can happen also to the bully. Previous literature (Ybarra and Mitchell 2004) and first person reports signal that unpleasant feelings can accompany also the act of cyberbullying someone, and this case is verified in the present sample. As previously noted, the correlation between being upset as a victim and as a bully is significant and quite high and is possible to see that a respondent upset as a bully will probably be upset as victim (Lambda= ,262; p<,000). The item showing the bigger difference of distribution between upset and not upset bullies are sending mean or threatening emails (Cramer's V= ,138; Approx. Sig. = ,001) and doing prank calls (Cramer's V= ,185; Approx. Sig. = ,000). In this case, while sender of mean or threatening emails and text messages are more common among the upset group, prank calls are much more frequent among not upset bullies. The nature and relative frequencies of the two items could suggest, along with the consideration that respondents who report being upset by the acts of cyberbullying carried out are also most often those upset as victims, the profile of a hurt part of the sample taking the cyberbullying on a deeper, more personal level, and a less involved one, more prone to goliardic actions.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
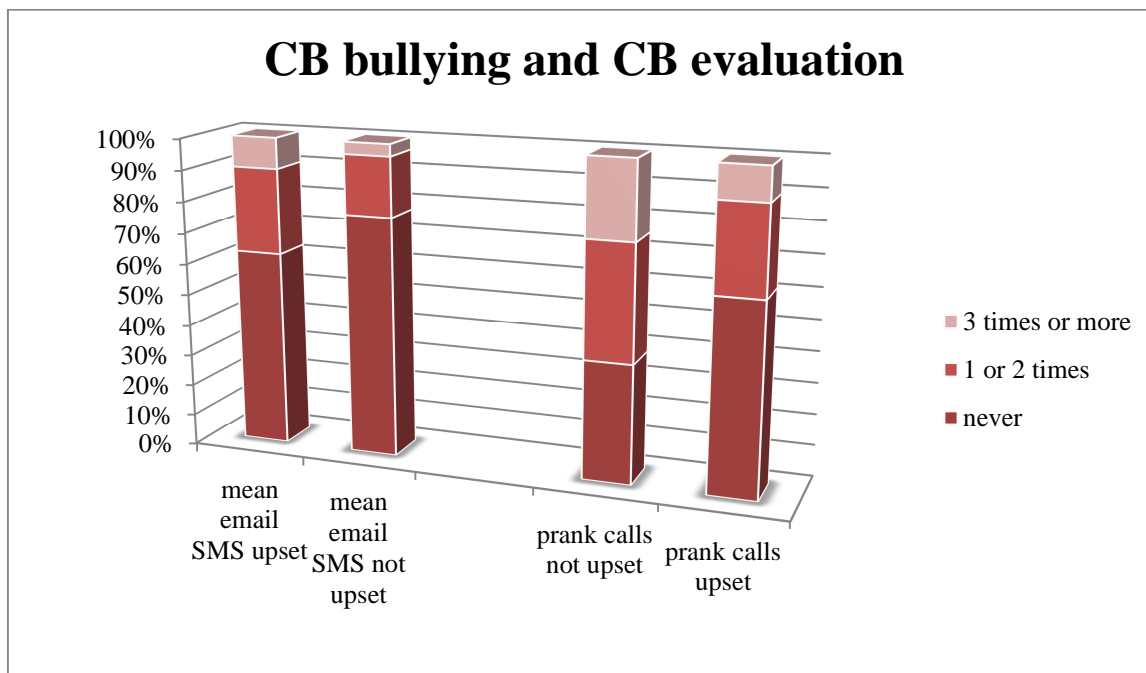
Differences in the item frequency among upset and not upset respondents

As already seen, also the evaluation of one own actions is indicated by respondents who did not previously report any cyberbullying behaviour. In this case however, the two groups do not significantly differ, and a large part of them evaluate the experience as irrelevant or funny.

Cross tabulation
% within Group of involvement

		bully evaluation					
		extremely upsetting	quite upsetting	irrelevant	quite funny	extremely funny	Total
Group of involvement	bully only	5,6%	10,3%	43,9%	29,9%	10,3%	100,0%
	bully-victim	3,5%	12,5%	46,5%	28,0%	9,4%	100,0%
Total		3,9%	12,2%	46,0%	28,4%	9,6%	100,0%

Association between bully only and bully-victim evaluation of their experiences as bullies.

5.6 The situation nation by nation:

A first set of descriptive analysis was conducted in order to obtain a picture of the situation in each one of the participating nations

5.6.1 Brazil

All the Brazilian respondents come from private secondary school, and answered a version of the questionnaire translated in Portuguese during school time. At the end of the questionnaire students received a short briefing on cyberbullying, as part of the English lesson, and were invited to discuss the topic with the researcher.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

ICT diffusion

About 70% of the Brazilian respondents use a mobile phone at least once a day, and the same figure is indicated for the access to the Internet.

The following table reports the percentage of frequency for a list of online activities. The use of Social Network Sites and Instant Messaging are the most frequently activities reported, followed by the access to music and films and the exchange of emails. Internet seems to be mostly used to communicate, probably with peers.
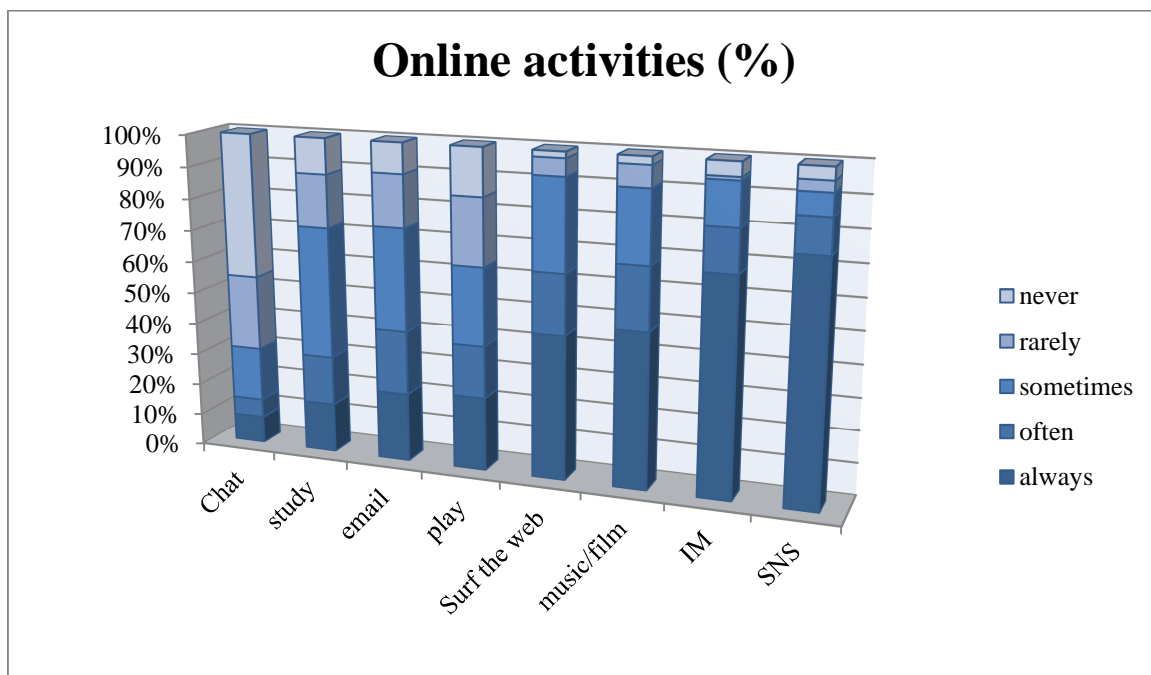
Frequency of engagement in the listed online activities.

Cyberbullying diffusion

Overall, 62% of the sample repost being victim of at least two episodes of cyberbullying in the previous six month, and 57% report having carried out at least two acts of cyberbullying in the same span of time.

The item by item analysis show that 52% of the respondents received prank calls, 42% had some hurtful comment posted on a Social Network page, 35% was victim of online gossip, 35% had a private message published online without prior permission, 23% received at least one mean or threatening email, 20% had the online ID stolen, 15% had an embarrassing photo published without previous consent and 8% was excluded from an online forum. The high rate of ID theft is a peculiarity of this sample.

The following table reports the overall percentage of respondents having been victim of each episode.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of cyberbullying (%) - victims
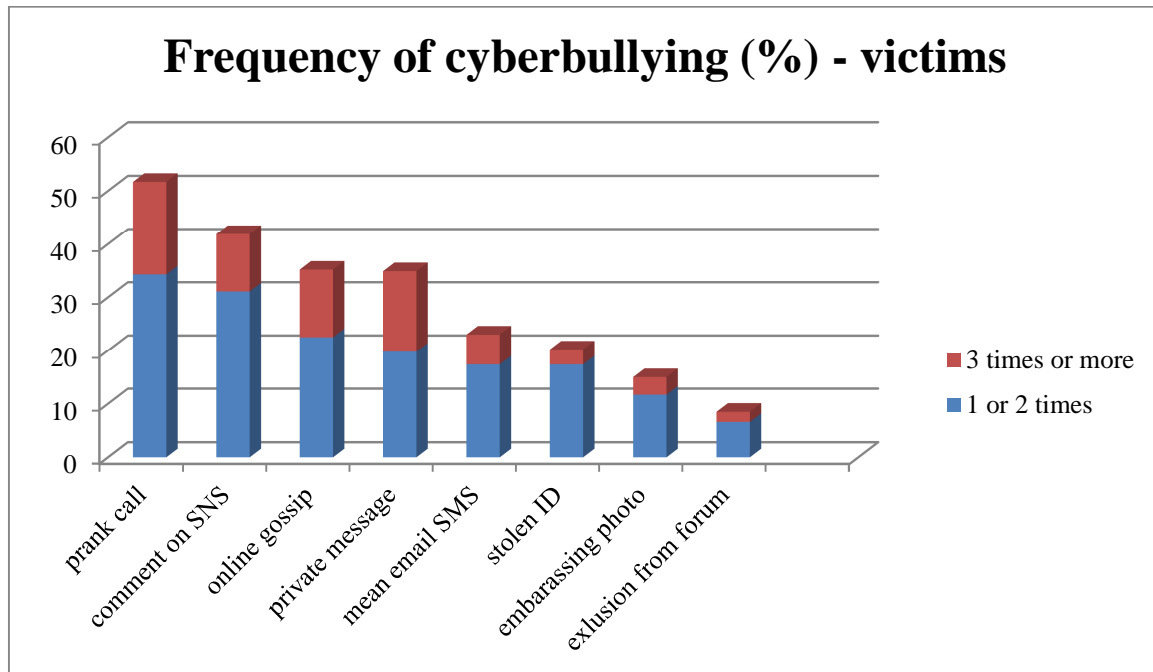
Percentages of respondents who have been victims of cyberbullying in the six months preceding the investigation

The sample can then be divided into a first group of uninvolved respondents, composed of all of the students reporting zero or one episode, 38%, and a second group of respondents who reported at least two episodes as victims, 62%. Another 37% of the sample reported between two and four episodes, while the rest of the sample reported more than four episodes within the last six month.

When asked to report how frequently they engaged in the cyberbullying behaviors listed, the percentage of students involved are as follow: 44% did prank calls, 41% published some else private message without prior consent, 36% left mean comment on some else Social Network page, 27% spread online gossip, 13% sent mean or threatening emails or text messages, 12% published an embarrassing photo of a friend without prior consent, 12% stole someone online ID and 8% excluded someone from an online forum.

The following table reports the overall percentage of respondents reporting acting as bullies for each submitted item.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of cyberbullying (%) - bullies
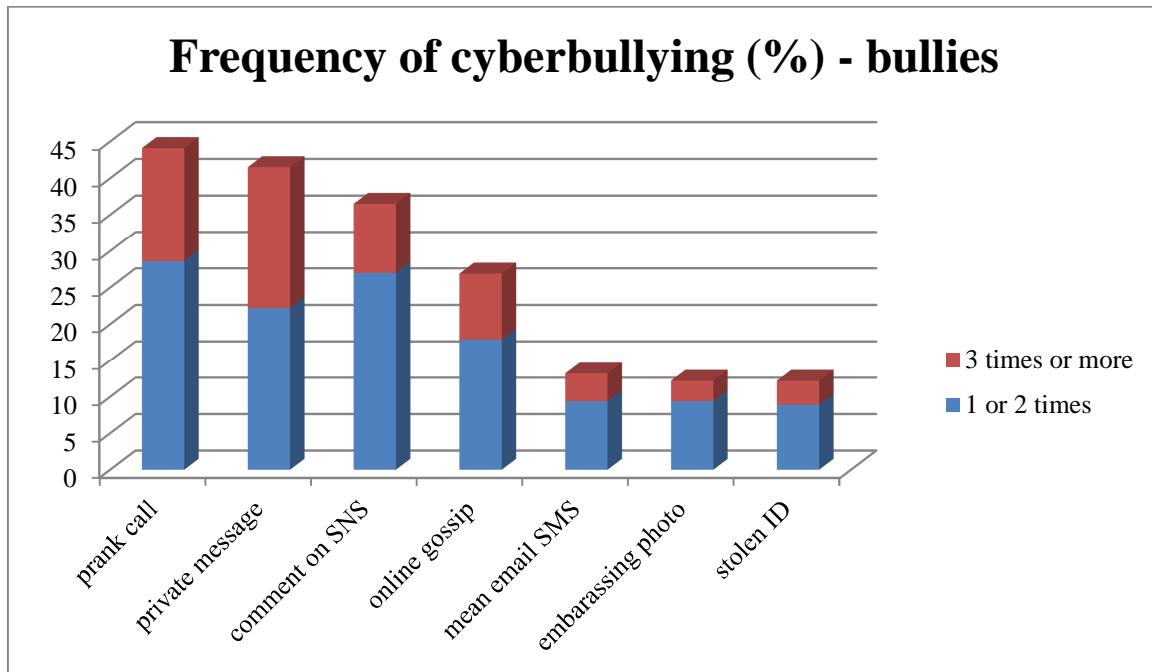
Percentages of respondents who have been cyberbullying someone in the six months preceding the investigation.

As seen previously with the level of victimization, also the number of act of cyberbullying signaled has been added into a bullying global level indicator. Among the Brazilian respondents, the 43% has not been involved in cyberbullying as a bully, while the 57% report having acted at least two of the behaviors listed within the last six month. About 38% of the sample report acting between two and four cyberbullying behaviors, the remaining sample four or more.

Cyberbullying evaluation

Among the most accepted cyberbullying behaviors the Brazilian students include prank calls, publication of private messages and leaving mean comments on Social Network pages, while stealing someone online ID and publishing an embarrassing photo of someone are seen as the least acceptable acts.

The following table reports in percentage the distribution of the sample for each item.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
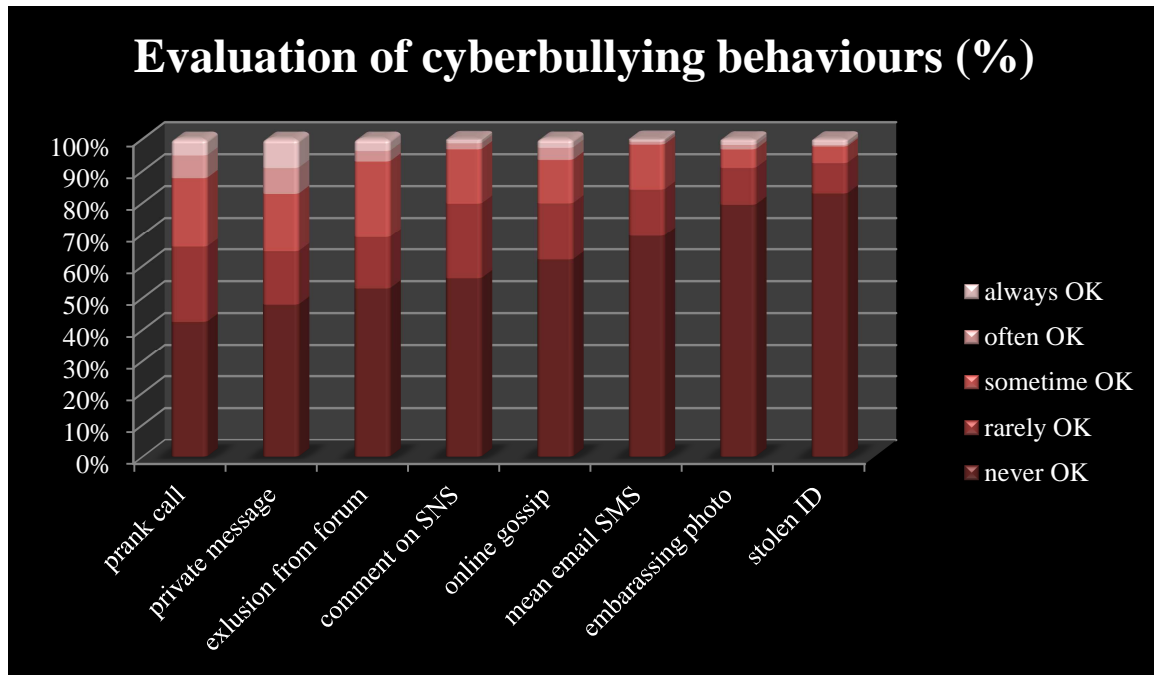
Item by item evaluation of the acceptability of different kind of cyberbullying

The association between the group of involvement and the group of cyberbullying rejection, based on the evaluation given by the respondent for each cyberbullying behavior, is strong (Cramer's V = ,319; Approx. Sig = ,000). The rejection is very high for uninvolved and victim only respondents, while bully only are more evenly distributed. Bully-victims are the respondents more prone to evaluate cyberbullying behaviors as acceptable.

Cross tabulation
% within Group of involvement

		CB evaluation categories			
		low rejection	medium rejection	high rejection	Total
Group of involvement	uninvolved	16,0%	14,0%	70,0%	100,0%
	victim only	9,7%	25,8%	64,5%	100,0%
	bully only	20,0%	35,0%	45,0%	100,0%
	bully-victim	48,4%	26,9%	24,7%	100,0%
Total		30,9%	24,2%	44,8%	100,0%

Differences in the level of cyberbullying rejection among the four groups of involvement

The non-parametric analysis show a very strong correlation of the cyberbullying evaluation index with both victim's and bully's global level, the variables that summarize the overall number of episodes in which each respondent have been involved in the six months previous the questionnaire. The negative correlation is especially strong between the level of cyberbullying rejection and the number of cyberbullying episodes carried out.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Correlation

		Victim global level	Bully global level
CB Evaluation Index	Kendall's tau_b	-,313[**]	-,426[**]
	Sig. (2-tailed)	,000	,000
	N	198	196

Nonparametric correlation between the level of cyberbullying rejection and the involvement in cyberbullying episodes
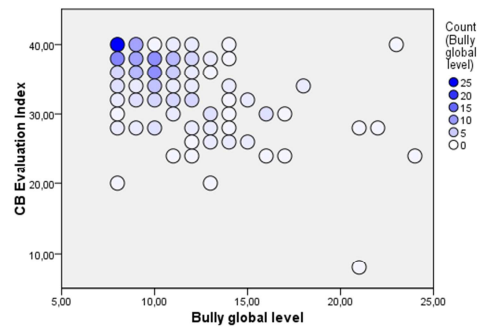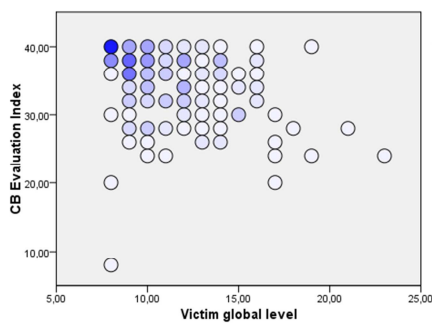
The evaluation of the scenarios

When evaluating the two scenarios, the Brazilian students show a very compact and defined attitude. The acts are seen as bad, definitely not funny and not even to be taken lightly. The trend is very similar for both scenario, but is still possible to observe a slightly lower level of condemnation for the second scenario, the one where the victim is somehow seen as more "deserving" of the joke.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Confronting the scenarios' evaluation
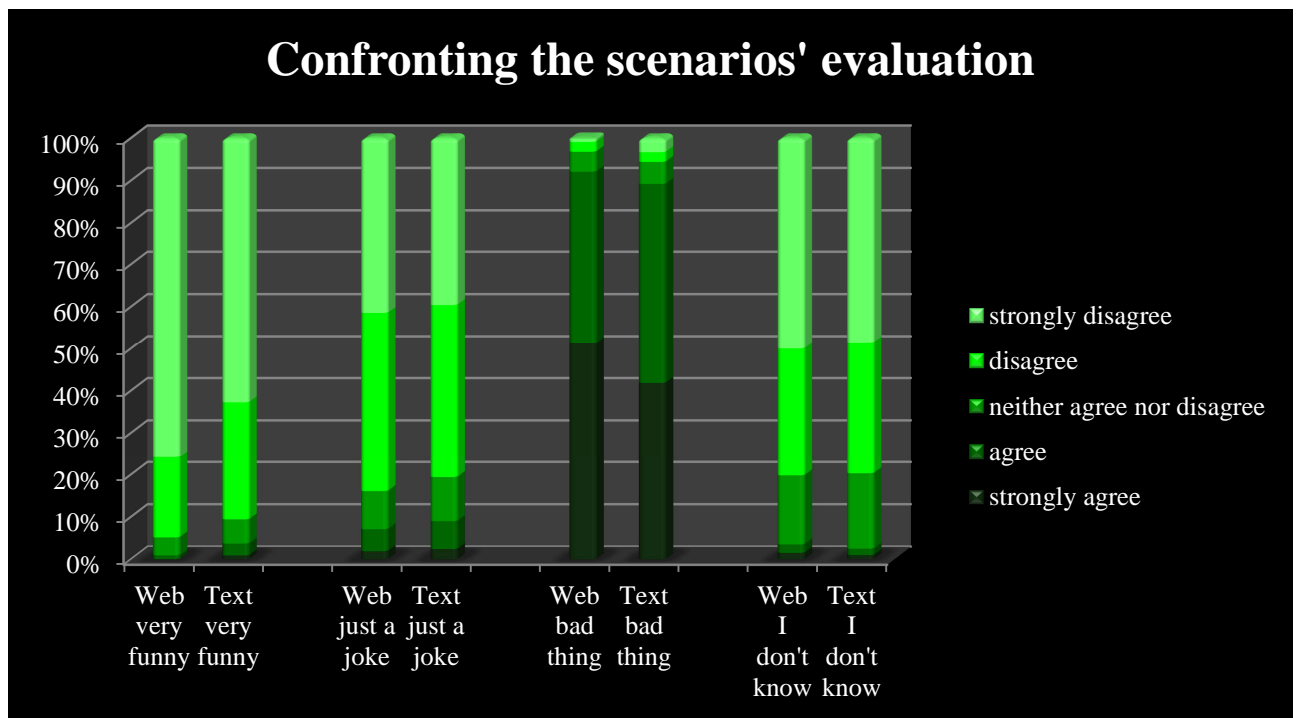
Confront of the evaluation of the scenarios' gravity expressed by the respondents

This uniformity of representation is confirmed when comparing the distribution of the respondents between the concerned and unconcerned group in the first and second scenario (Phi = ,358 Approx. Sig. = ,000). More than half of the sample fall into the concerned category in both scenarios, and only 12% fall in the unconcerned group in both cases.

Cross tabulation

		Text message scenario		
		Concerned	Unconcerned	Total
Web page scenario	Concerned	64%	15%	79%
	Unconcerned	8%	13%	21%
Total		72%	28%	100%

Concordance and discordance in the concernment expressed in the two scenarios

Crosstab show no correlation between the group of involvement and the belonging to the concerned or unconcerned group in the hate page scenario (Cramer's V = ,161; p = ,145) and a very weak one between the group of involvement and the belonging to the concerned or unconcerned group in text message scenario (Cramer's V = ,209; p<,05).

How do Brazilian respondents see cyberbullies?

When questioned about their opinion on the intentionality of the damage done by the cyberbullies described in the scenarios, Brazilian students leave a little space to the doubt. While 83% believe that the hate page was created with the intention of hurting the victim,

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

13% state that the bully probably did not intend to hurt the victim. The proportion of those imagining the bully as unaware of the negative impact of his joke decreases to 9% in the text message scenario, while 88% think he wanted to hurt his victim.

A little more than one third of the sample believe the creator of the hate page unaware of the length and wideness that the joke could have, and this data is confirmed also in the text message scenario, where also the proportion of respondents choosing "I don't know" is quite large, 7,6% of the sample. The 61% of respondents to the question in the first questionnaire and 60% in the second believe the bullies fully aware of the potential extent of their action.

How strong is the appeal of anonymity for the cyberbullies, in the representation of the Brazilian students? Not very strong, apparently as only 31% of the respondents to the first scenario imagine that the bully hoped to remain anonymous, while 45% think so in text message scenario. The intention of hurting the victim seems to be much more recognized by the respondents, than the desire to do it anonymously.

Once again the sample expresses a quite uniform opinion with regards to the difference in power balance between bully and victim. Respectively 87% and 86% of the sample imagine the bullies felt stronger than their victims when carrying out their jokes.

The opinions expressed in these sets of questions do not correlate with either the level of victimization and bullying expressed by the respondents.

When assessing the responsibilities for the described scenarios, the Brazilian students seem especially receptive towards the idea of a shared fault, involving all of the participants to the joke. A quite relevant difference appears on the assessment of the media's responsibility, as the Web is evaluated as more "dangerous" and somehow responsible for the cyberbullying episode than the mobile phone. Even if very light, it is still possible to observe a tendency to hold the victim more responsible of the episode, and the bully less responsible, in the text message scenario.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
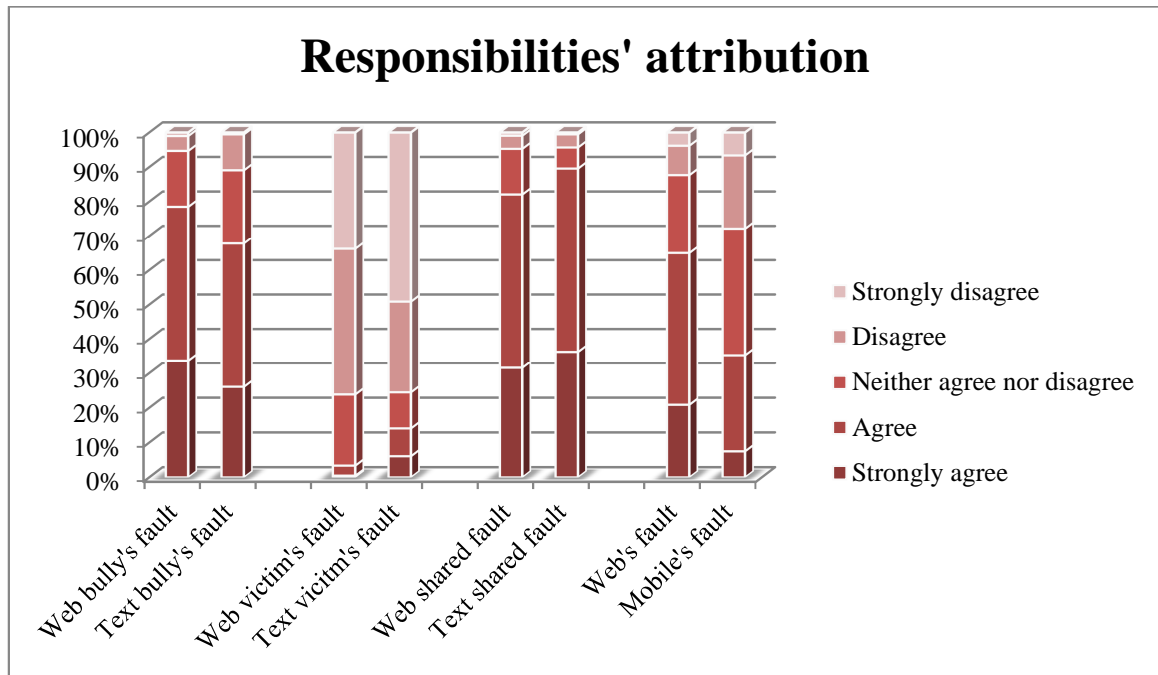
Confront of the responsibilities' attribution in the two scenarios

5.6.2   Colombia

All respondents from Colombia are students of secondary school, part coming from public and part from private school.

ICT diffusion

Among the Colombian respondents, 75% uses the mobile phone at least once a day, and 80% uses Internet with the same frequency. The access to Social Network Site is the one reported as most frequent, followed by the use of chat and Instant Messaging. Surfing the web, watching films or listening to the music and studying re reported as quite frequent activities, while the less signaled are sending emails and playing online.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
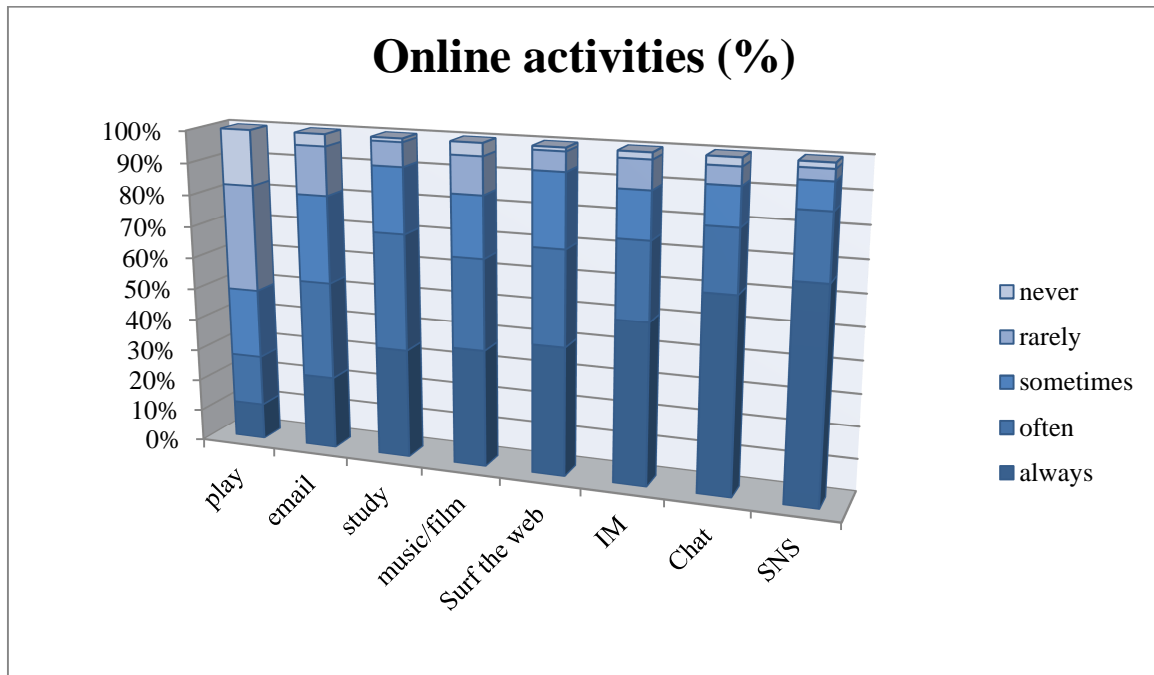
Frequency of engagement in the listed online activities.

Cyberbullying diffusion

When asked to evaluate the frequency of involvement in acts of cyberbullying, 69% of the sample declares to have been victim of at least two episodes of cyberbullying in the previous six month, and 62% state to have carried out at least two act of cyberbullying.

Looking at the item by item frequency, is possible to see that 45% received prank calls, 40% a mean comment on a social network site, 37% was victim of online gossip, 31% received a mean or threatening email, 30% a private message published without permission, 26% had an embarrassing photo published without permission, 19% had their online ID stolen, 14% have been excluded from a forum online.

The following table reports the overall percentage of respondents having been victim of each episode.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of cyberbullying (%) - victims
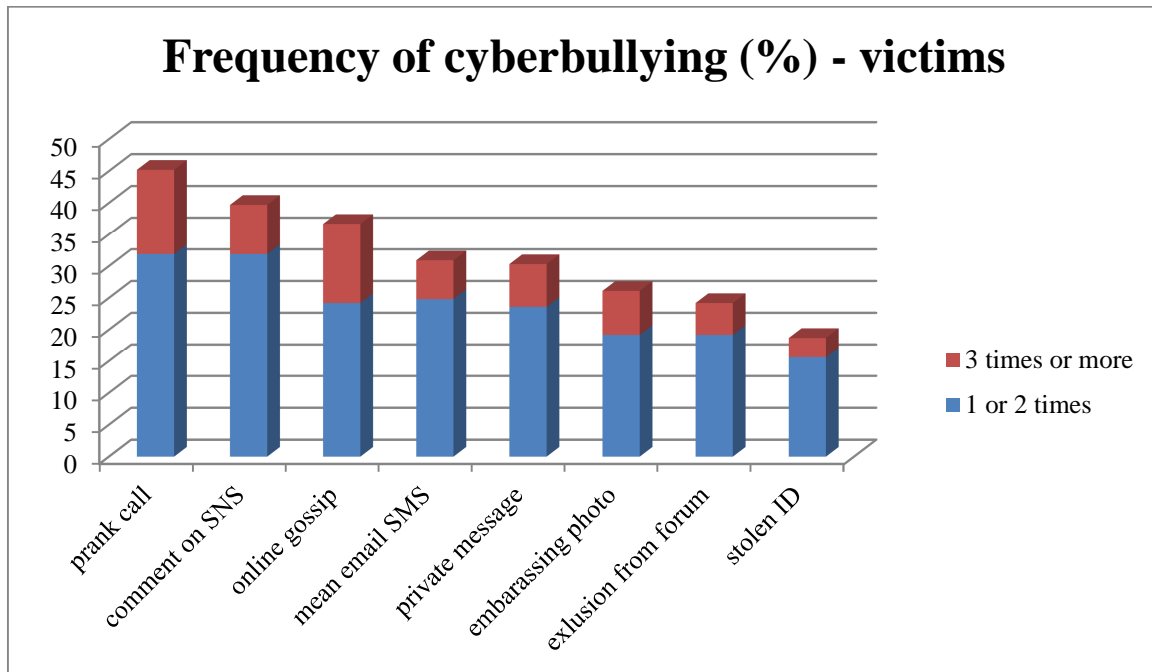
Percentages of respondents who have been victims of cyberbullying in the six months preceding the investigation

Among the Colombian respondents, 31% belongs to the uninvolved group, and 69% to the involved group, and the global level of victimization indicator show that about 44% of the sample is distributed between two and four episodes reported.

When asked to report the frequency with which they engaged in acts of cyberbullying, 17% of the respondents state to have sent at least one threatening email in the previous six months, 37% left a mean comment on someone's social network page, 35%exluded someone from an online forum, 26% spread an online gossip, 18% published someone photo without permission, 26% published someone private message without permission, 48% made prank calls, 13% stole someone ID.

The following table reports the overall percentage of respondents reporting acting as bullies for each submitted item.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of cyberbullying (%) - bullies
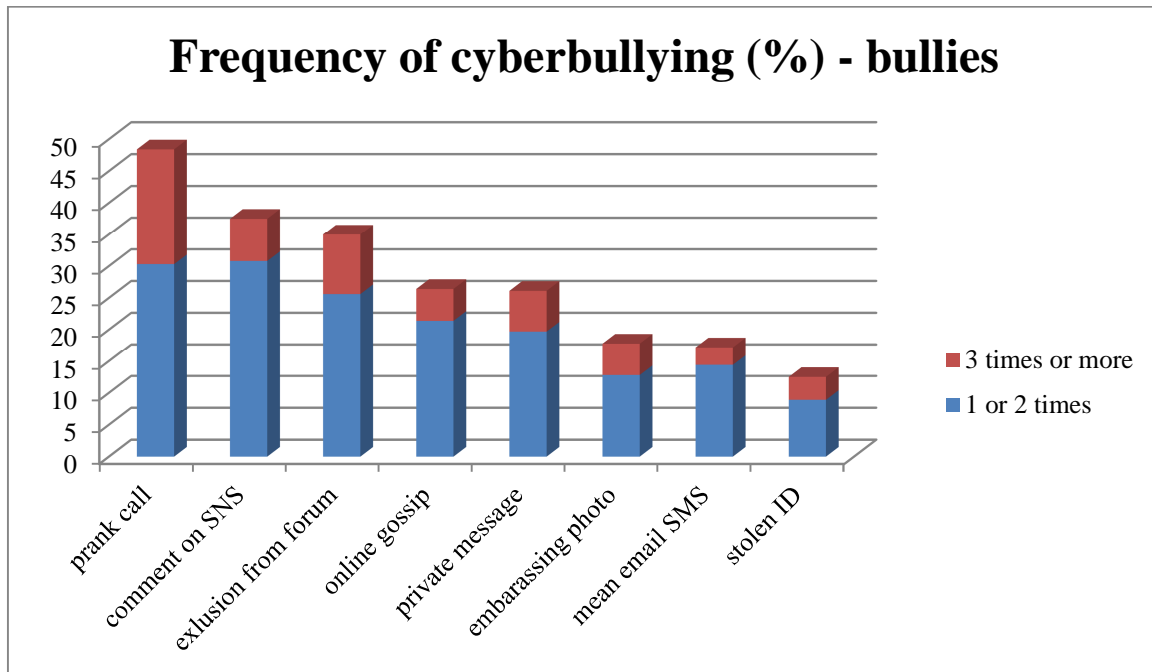
Percentages of respondents who have been cyberbullying someone in the six months preceding the investigation.

The respondents belonging to the uninvolved group are the 38% of the sample, and 62% report having acted at least two cyberbullying behaviours in the previous six months. About 40% of the sample acted between two and four cyberbullying behaviours in the previous six months, as indicated by the indicator of global level of bullying.

Cyberbullying evaluation

The following table shows the item by item evaluation of the acceptability of each cyberbullying behavior among the sample. The order gravity only partially matches the frequency of episodes signaled by the respondents as victims and bullies. What is relevant to notice is that the "window" of acceptability is open for quite a large part of the sample even for behaviours that imply a break into other people's privacy and in many cases may constitute a criminal offence.
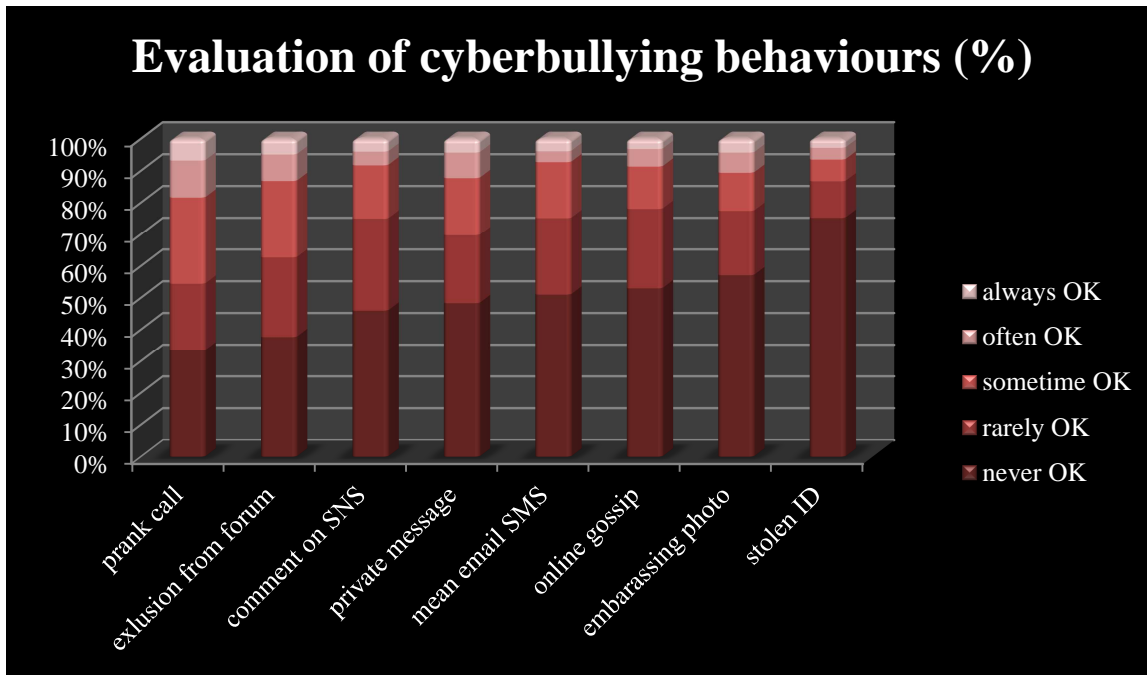
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A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Item by item evaluation of the acceptability of different kind of cyberbullying

The correlation between group of involvement and cyberbullying evaluation category is moderately strong (Cramer's V = ,302; Approx. Sig = ,000). While uninvolved and victim only seems to share a similar pattern of high rejection, bully only are evenly distributed among the rejection categories, and bully-victims are the part of the sample showing less concern toward cyberbullying behaviors.

Cross tabulation
% within Group of involvement

		CB evaluation categories			
		low rejection	medium rejection	high rejection	Total
Group of involvement	uninvolved	19,4%	22,2%	58,3%	100,0%
	victim only	28,6%	12,2%	59,2%	100,0%
	bully only	33,3%	40,0%	26,7%	100,0%
	bully-victim	56,6%	24,1%	19,3%	100,0%
Total		41,6%	23,3%	35,0%	100,0%

Differences in the level of cyberbullying rejection among the four groups of involvement

As is possible to see checking the non-parametric correlation between the global index of victimization and bullying and the global index of cyberbullying rejection, the correlation is much stronger between the evaluation and the bullying global index than the victim one.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Correlation

		Victim global level	Bully global level
CB Evaluation Index	Kendall's tau_b	-,213**	-,346**
	Sig. (2-tailed)	,000	,000
	N	317	318

Nonparametric correlation between the level of cyberbullying rejection and the involvement in cyberbullying episodes
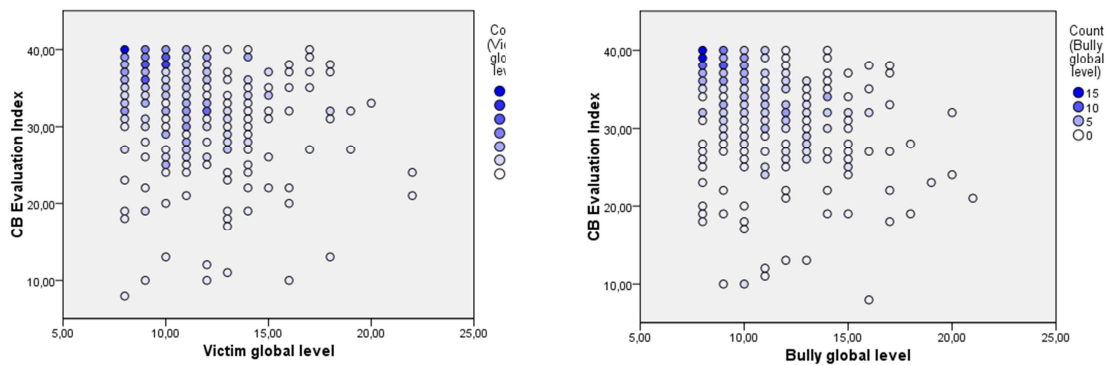
The evaluation of the scenarios

In the evaluation of the gravity of the two submitted scenarios show a discreet level of acceptance of the cyberbullying behaviours, especially for the answers on the second one. A quite relevant part of the sample doesn't know how to evaluate the presented situations, 24% for the hate page story and 17% for the text story.
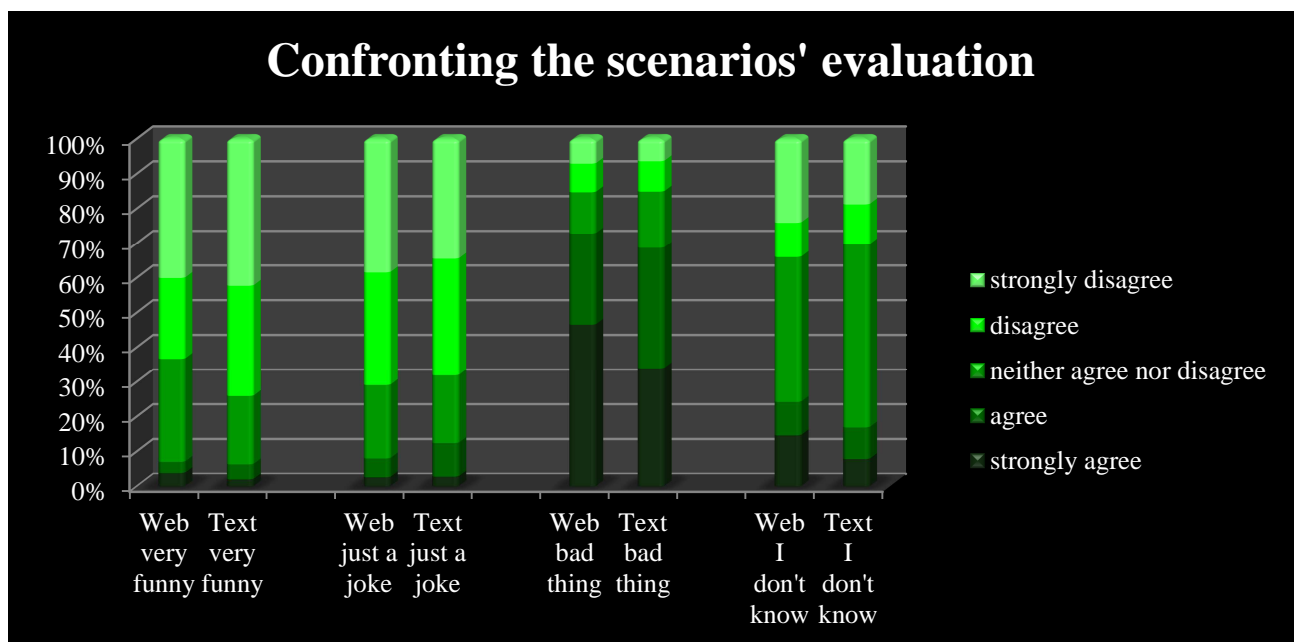
Confront of the evaluation of the scenarios' gravity expressed by the respondents

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The association between concern in the first scenario and in the second is a moderately strong one (Phi = 0,282, Approx. Sig = ,000), and in accord with what expected, the percentage of concerned respondents is higher for the hate page scenario.

Cross tabulation

		Text message scenario		
		Concerned	Unconcerned	Total
Web page scenario	Concerned	27%	19%	46%
	Unconcerned	16%	38%	54%
Total		43%	57%	100%

Concordance and discordance in the concernment expressed in the two scenarios

Crosstab show a weak correlation between the group of involvement and the belonging to the concerned or unconcerned group in the hate page scenario (Cramer's V = ,181; Approx. Sig. = ,000) and none between the group of involvement and the belonging to the concerned or unconcerned group in the text message scenario (Cramer's V = ,075; Approx. Sig. = ,567).

How do Colombian respondents see cyberbullies?

When asked to evaluate the intentionality of the acts of cyberbullying described in the scenarios, the Colombian sample is quite compact in expressing the opinion that the bully meant to hurt his/her victim (90% of the sample in the Hate-page scenario and 87% of the sample in the text scenario).

If the sample seems quite positive that the bullies intended to hurt their victims, the opinion is much more differentiated when it comes to evaluate the bullies' awareness on the possible magnitude that their acts could have. In the hate-page scenario this tendency is stronger, and 35% of the sample declares that in their opinion the bully was not aware of the diffusion that their joke could have. In the text scenario the percentage is slightly lower, 30%, but till relevant.

Also the anonymity allowed by the ICT attack doesn't seems to be evaluated as essential in the bully's motivation, for the Colombian sample. The 48% in the first scenario and 41% in the second imagine that the bully did not want to remain anonymous.

The disparity of strength, one of the essential characteristics necessary to define an act as bullying, returns to be acknowledged in the bullies' representation of the sample. 64% of the sample in the hate-page scenario and 73% of the text story scenario imagine the bully to feel stronger than his victim.

The opinions expressed by the sample on these matters do not show any correlation with the personal involvement of the respondents, both as bullies and victims.

In both scenario is possible to see two different tendency in the attribution of fault, with part of the respondents more prone to held the bully responsible for its actions and while the other have a more diffused idea of the responsibility attribution, that take into account

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

all the involved parts, victim included. But there is a shift of positions from the hate-page to the text scenario. While in the first one a higher proportion of respondents see the bully as only responsible, in the second scenario the responsibility is seen as much more shared among all the participants. As expected, the text scenario has more respondents indicating the victim as partly responsible for the joke.
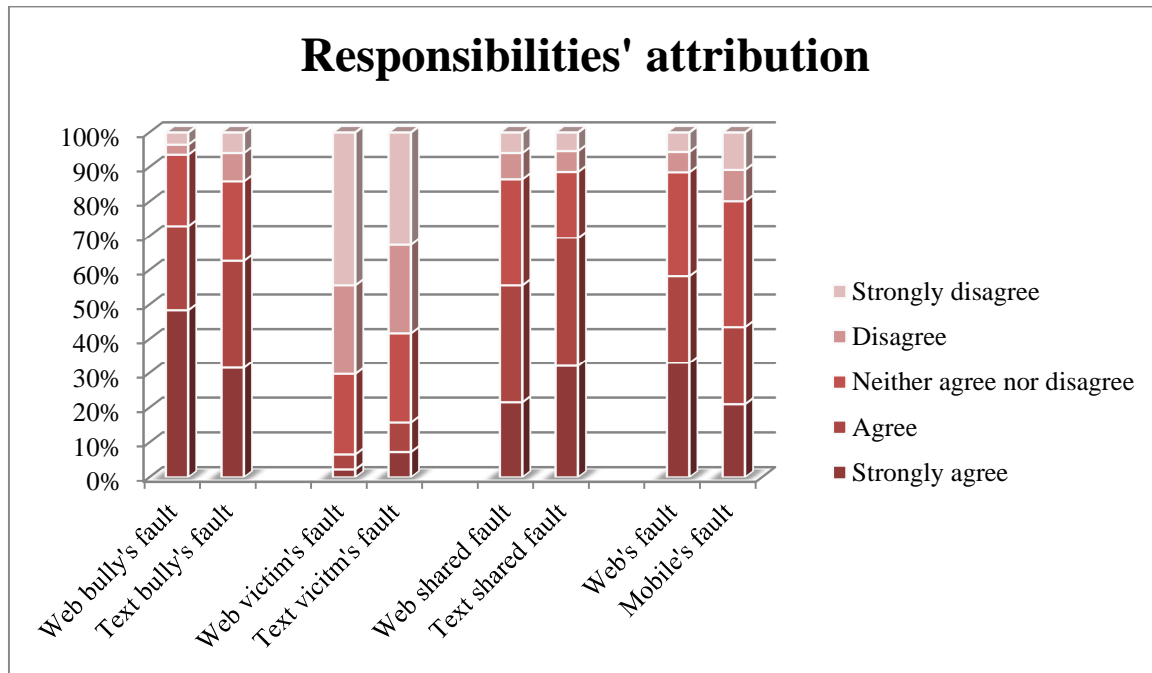
Confront of the responsibilities' attribution in the two scenarios

5.6.3   India

Although the Indian sample consist in only fifty students of a singular private school in Bangalore, the data are still relevant as they represent one of the very first surveys on this topic conducted in India. It seems relevant to point out that Bangalore is known worldwide as the *Silicon Valley of India* because of the large number of information technology companies located in the city. This preliminary data collection intends to highlight the emergence of cyberbullying episodes also in this country, and encourage further, deeper studies.

ICT diffusion

The students of the Indian sample report using their mobile phone at least once a day in the 88% of the cases, and connecting to the Internet at least once a day in the 59% of the cases. Although the sample is very small, the use of Social Network Site is confirmed as the most popular online activity, followed by the fruition of music and films. The use of forum to chat is not diffused (the data confirms the findings in the other countries, as chat in forum is already an activity belonging to a "past era" of Internet use). The use of Internet to study, surf the web and send email is signaled with intermediate frequency.
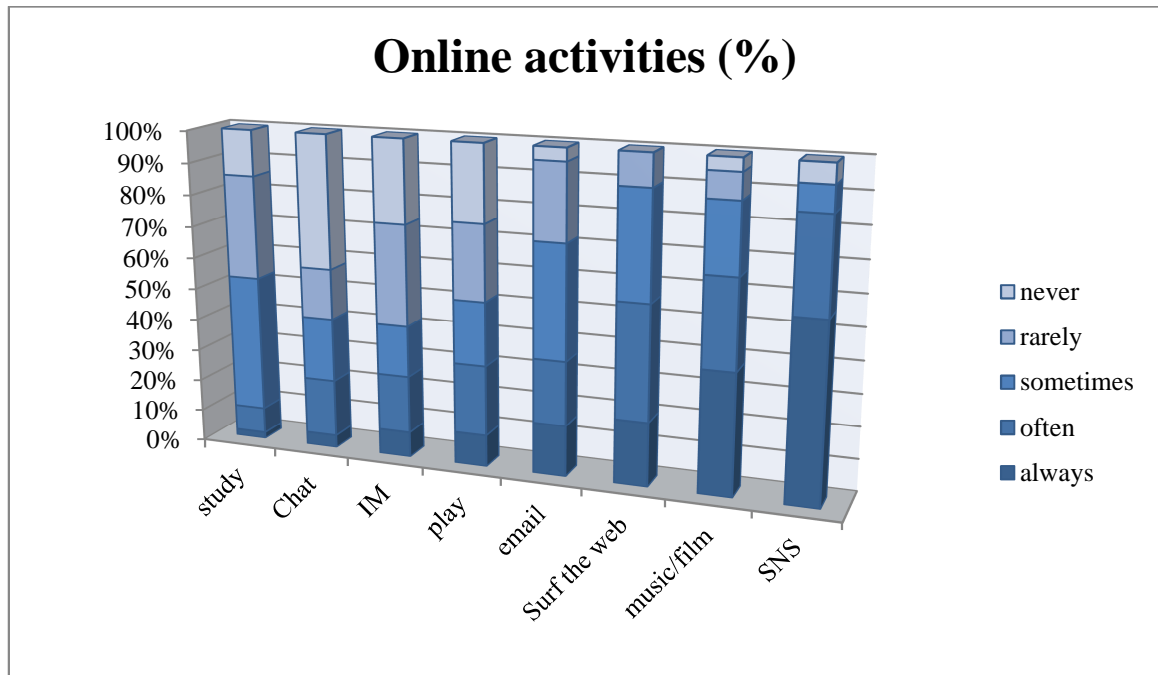
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A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of engagement in the listed online activities.

Cyberbullying diffusion

Among the students interviewed, 69% report being victim of at least two episodes of cyberbullying in the previous six months, and 58% report being involved as bullies.

As for the item by item frequency of the episodes, 74% of the respondents received at least one prank call in the previous six months, 44% had a private message published online without prior consent, 42% was victim of mean comments on a Social Network page, 34% received a mean or threatening email or text message, 22% was victim of online gossip, 12% had an embarrassing photo published without prior consent, 8% had his/her online ID stolen and 6% was excluded from an online forum.

The following table reports the overall percentage of respondents having been victim of each episode.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of cyberbullying (%) - victims
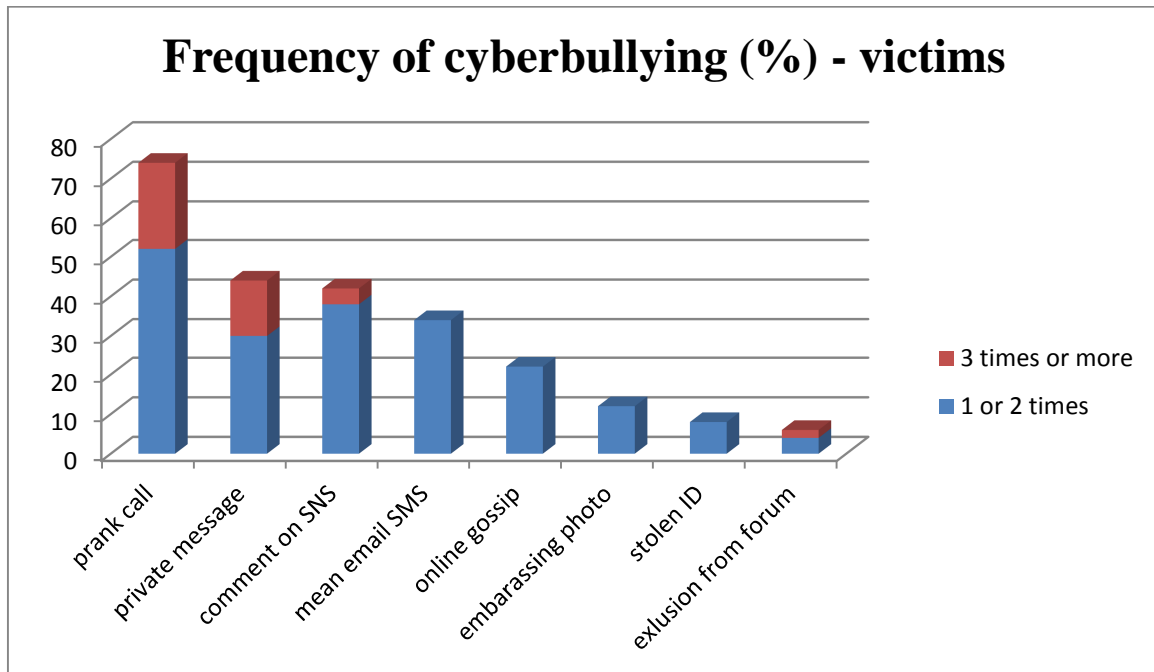
Percentages of respondents who have been victims of cyberbullying in the six months preceding the investigation

The Indian students are uninvolved as victim of cyberbullying in the 31% or the cases, while another 30% report between two and three episodes, with a total of involved in at least two episodes of 69% of the respondents.

When asked to state how often, in the previous six months, they engaged in cyberbullying actions, 54% of respondents report to have done at least one prank call, 47% published someone else private message without prior consent, 33% left some nasty comment on some else Social Network page, 26% sent a mean or threatening email, 18% spread online gossip, 12% published some else embarrassing photo without prior consent, 6% stole someone's online ID, 2% excluded someone from an online forum.

The following table reports the overall percentage of respondents reporting acting as bullies for each submitted item.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of cyberbullying (%) - bullies

Legend:
- 3 times or more
- 1 or 2 times

X-axis categories: prank call, private message, comment on SNS, mean email SMS, online gossip, embarassing photo, stolen ID, exlusion from forum
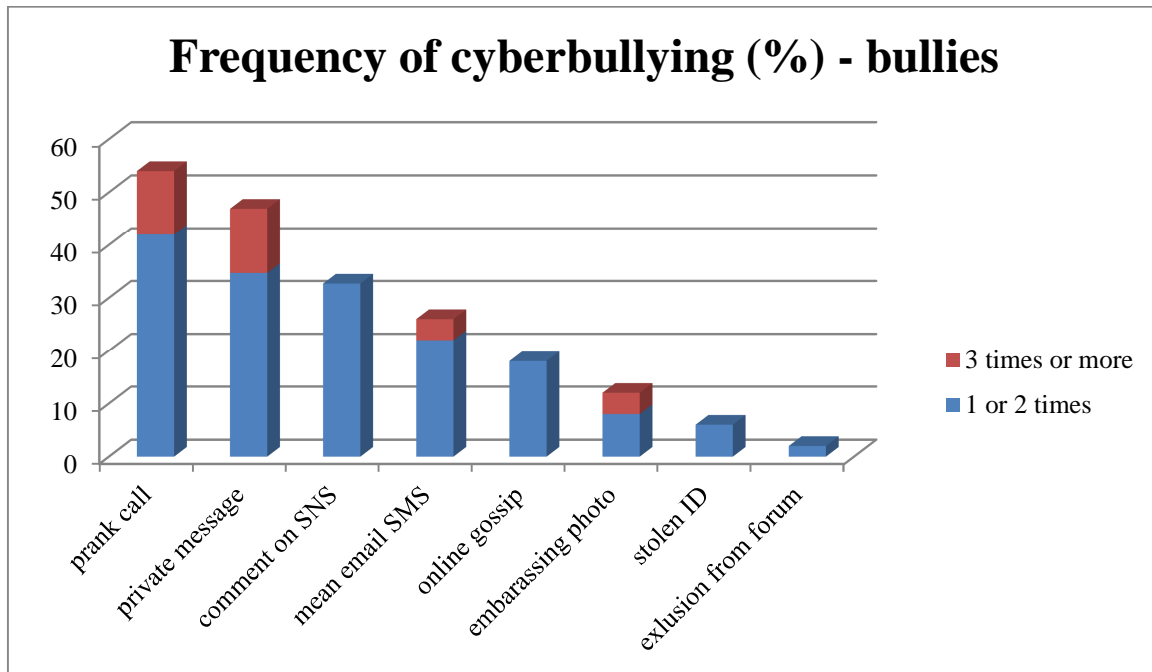
Percentages of respondents who have been cyberbullying someone in the six months preceding the investigation.

The uninvolved group gather 42% of the sample, 58% are the respondents involved in at least two episodes, with 31% of the respondents reporting between two and three cyberbullying behaviors as indicated by the bullying global level indicator.

Cyberbullying evaluation

The following table reports the evaluation given by the Indian students on the acceptability of each of the cyberbullying behavior listed. With the exception of the first three behaviors (but one of them, the exclusion from forum, is not commonly actuated) the Indian sample show a very tight evaluation on the acceptability of cyberbullying, with most of the items strongly rejected by a large part of the respondents. The matching between the frequency with which the respondents engaged in cyberbullying behaviors and how acceptable they consider them is very high, with the exception, as already noted, of the exclusion from online forum.
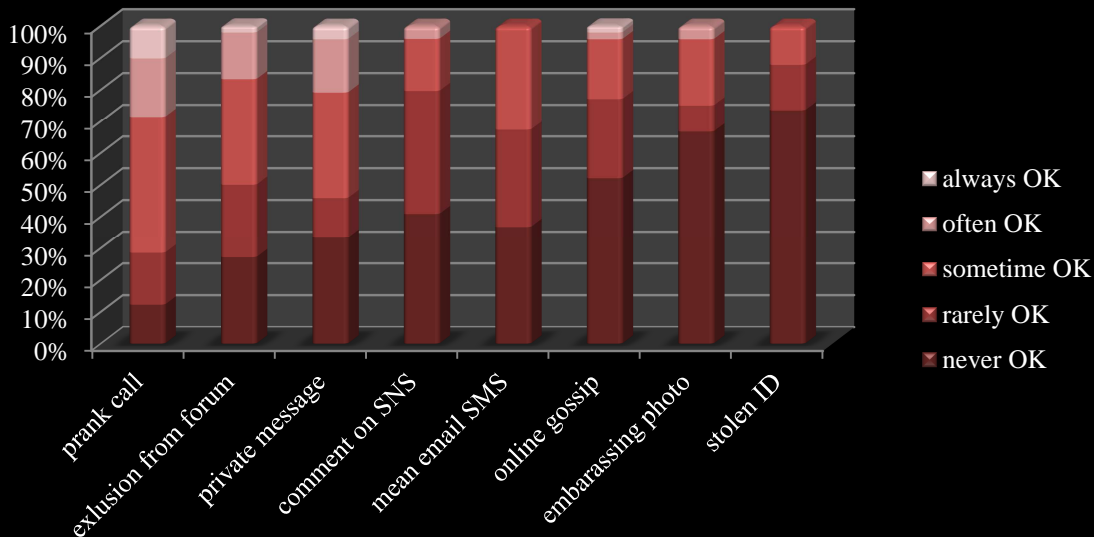
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A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Item by item evaluation of the acceptability of different kind of cyberbullying

The correlation between the group of cyberbullying evaluation (low, medium and high rejection) and the group of cyberbullying involvement (uninvolved, victim only, bully only, bully-victim) is very strong (Cramer's V = ,381) but the significance level is almost but not reached (Approx. Sig. = ,052). This could be accounted to the small size of the sample.

This interpretation can be supported by the negative correlations found between the number of cyberbullying actions carried out or experienced as victim and the level of cyberbullying rejection. The correlation between the variables Cyberbullying Evaluation Index and Victim global level is Kendall's tau_b = -,233, Sig = ,037, and between the Cyberbullying Evaluation Index and Bully global level is Kendall's tau_b = -,316, Sig = ,006. In this subsample, the correlation between the variables Victim global level and Bully global level is Kendall's tau_b = ,644, Sig. = ,000.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
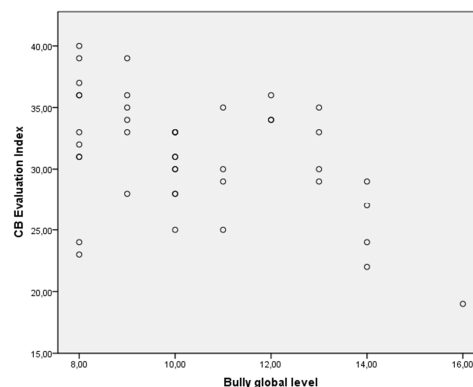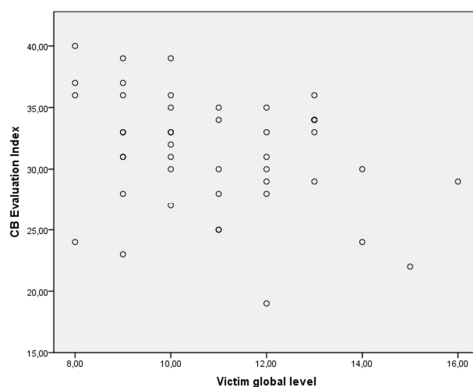
The evaluation of the scenario's

In addition to the abstract evaluation on the previous items, respondents were asked to report their opinion on two cases of cyberbullying. The condemnation of the two episodes is quite widespread, still, especially for the second scenario; there is a percentage of respondents that consider them as funny, or not extremely grave.
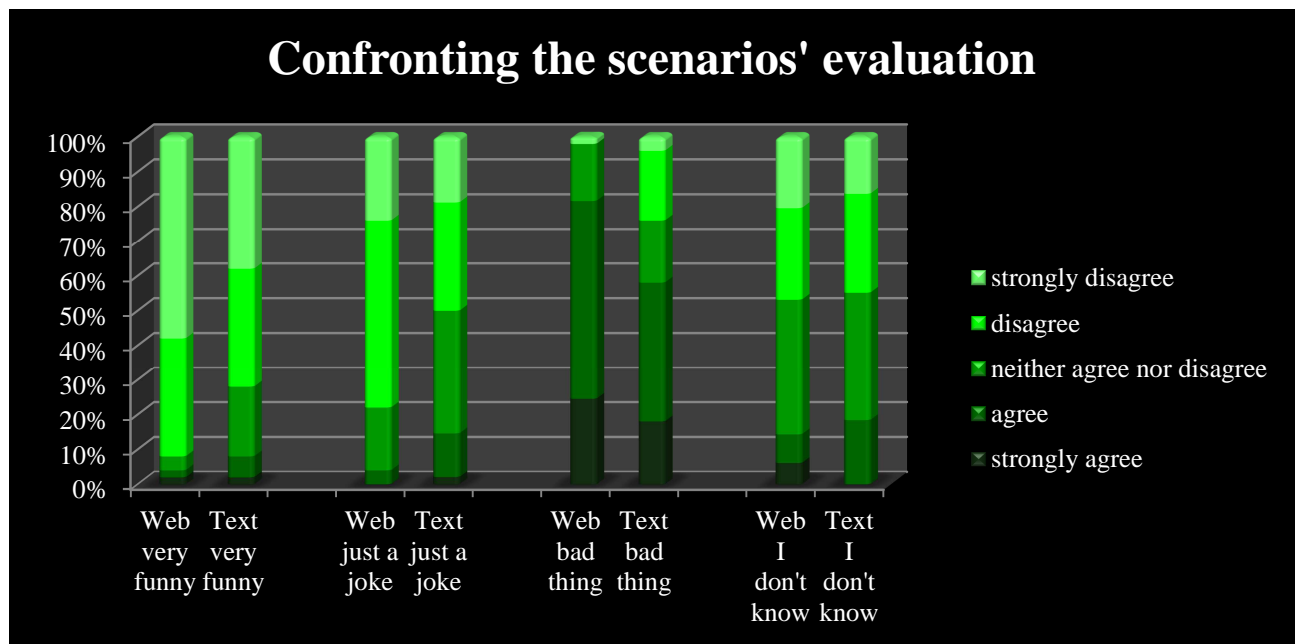
Confront of the evaluation of the scenarios' gravity expressed by the respondents

The association between the belonging to the concerned or unconcerned group in the first and second scenario is very strong, with Phi = ,393; Approx. Sig. = ,005. As anticipated by the frequencies, the proportion of concerned respondent is slightly higher for the webpage scenario.

Cross tabulation

		Text message scenario		
		Concerned	Unconcerned	Total
Web page scenario	Concerned	28%	18%	46%
	Unconcerned	12%	42%	54%
Total		40%	60%	100%

Concordance and discordance in the concernment expressed in the two scenarios

Crosstab show no significant correlation between the concern displayed in the evaluation of the scenario and the group of involvement belonging. This result is in line with the hypnotized distance between abstract representation of cyberbullying acts and actual behaviours.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

How do Indian respondents see cyberbullies?

When asked if, in their opinion, the bullies of the two scenarios intended to hurt their victims, the respondents of the Indian sample are quite consistent in assessing that both the webpage (78% of the sample) and the text message (again 78% of the sample) were meant to hurt.

The opinion of the respondents is less compact when it comes to evaluate the awareness of the bullies on the length and extent that the joke could have.26% of the respondents believe the bully of the first scenario to be unaware of this problem, and the same opinion is stated by the 36% of the sample for the second scenario. The percentage of respondents who thinks the bullies aware of the extent of the damage they would create is 48% in the first scenario and 42% in the second scenario.

The relative uniformity of opinion between the two scenario stop on the subject of anonymity. In the first scenario the 48% of the respondents imagine the bully not interested in remaining anonymous, while the percentage drop to 36% in the text scenario. The anonymity was sought by the bully in the text message scenario for 44% of the respondents, but only for 14% of the respondents in the webpage scenario.

As for the problem of power unbalance between bully and victim, 54% of the respondents imagine that the bully felt stronger than his victim in the webpage scenario, and so do the same percentage of respondents in the text scenario.

Of all of this items, the only one showing correlation with the cyberbullying group of involvement is the opinion expressed on the bully's awareness on the length and extent that the joke could have (Cramer's V = ,396; Approx. Sig. =,036). This is the only case and the only country where a significant correlation is found.

When assessing the responsibilities for the episodes narrated in the scenarios, the Indian respondents express opinions that do not seem to differ significantly from those of their foreigner colleagues. The fault is mainly attributed to the bully, although the Indian students held equally responsible also all the other persons involved in the joke as well as the technologies, while a small part of the respondents attribute part of the fault to the victims themselves. This tendency is more accentuated in the text message scenario, where the percentage of those thinking that the victim is culpable for what happened to her reach the 18%.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
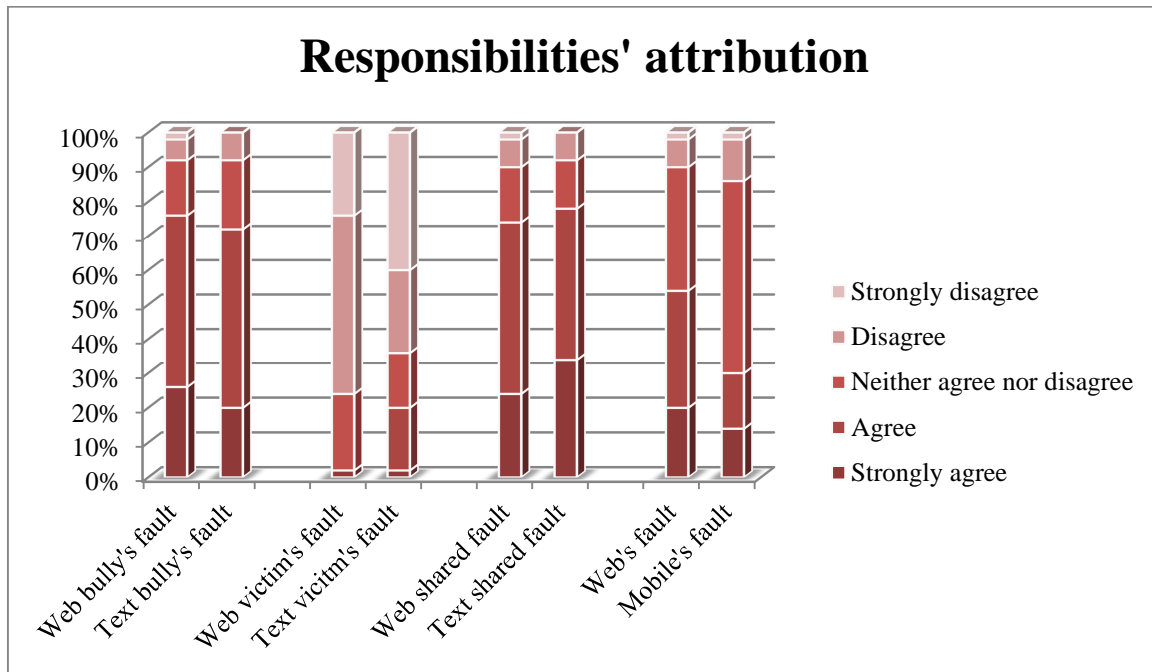
Confront of the responsibilities' attribution in the two scenarios

5.6.4 Italy

The Italian sample is the only one composed both of secondary school students and university students. All the respondents come from public schools, but from different courses of studies.

ICT diffusion

Among the respondents, 92% reports using the mobile phone at least once a day and 83% connecting to the Internet at least once a day.

In this case the data are presented in two separate tables, because the differences in Internet use between secondary school respondents and University students are significant, especially for the use of Social Network Site, more popular among teenagers (Kendall's Tau c =,275; p < ,001), just like the fruition of music and movies (Kendall's Tau c =,360; p < ,001), while the exchange of emails is signaled more frequently by the University students (Kendall's Tau c =-,381; p < ,001),

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
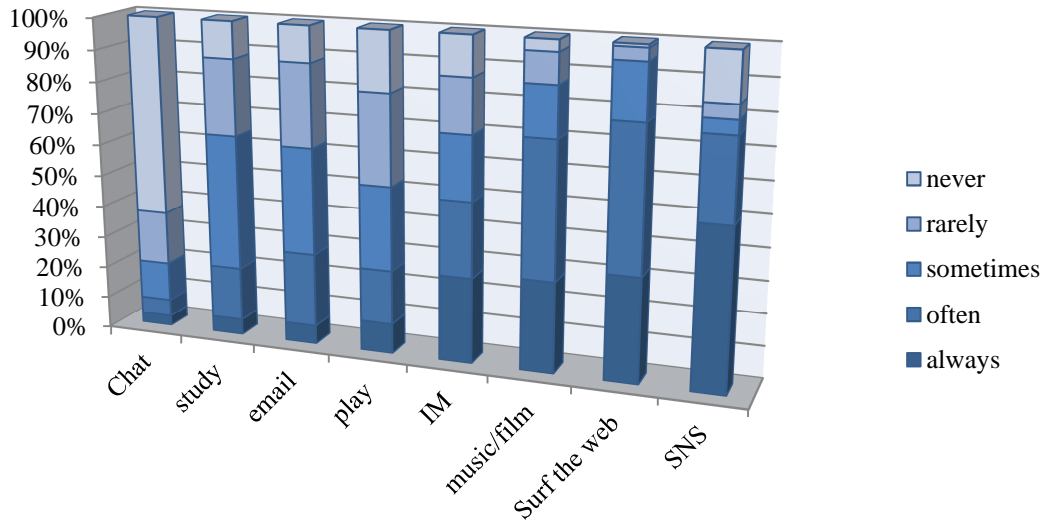
Frequency of engagement in the listed online activities.

The Italian secondary school students, similarly to what they peers of the other considered countries reported, indicate the access to Social Network Sites as the most frequent online activity, followed by surfing the web and watching movies or listening to music. The use of Instant messages is not quite so popular, especially if compared with other countries, while chat in forum and playing online are among the least popular activities.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
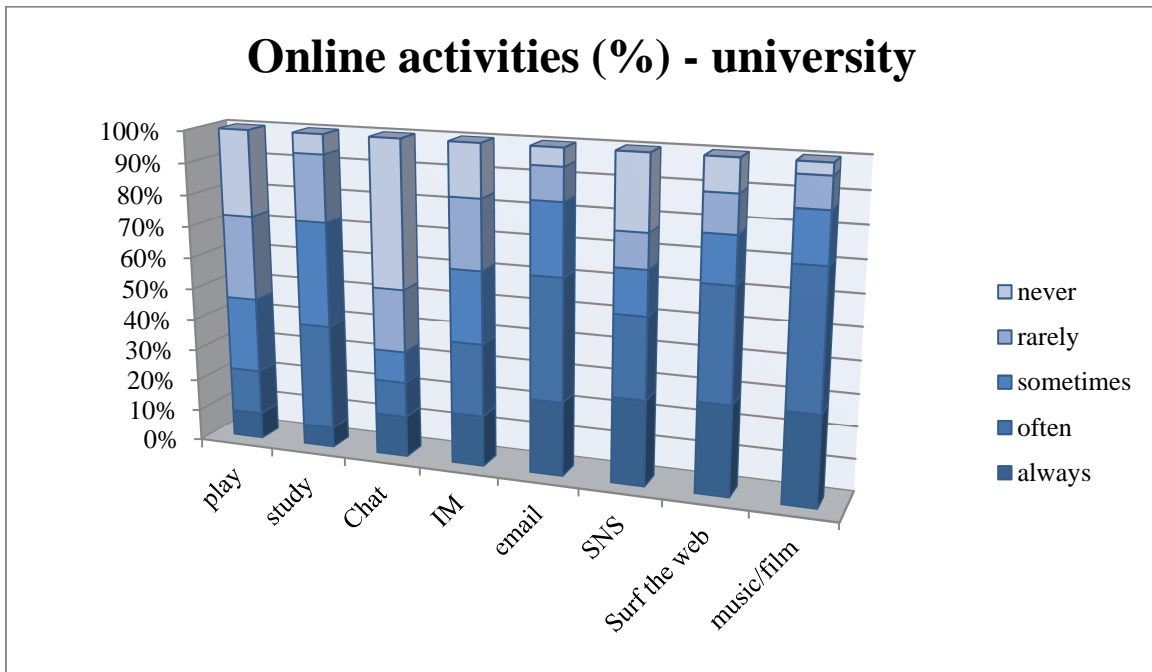
Frequency of engagement in the listed online activities.

The distribution of preferences for online activities among the University students differ from the one encountered so far. In this case the fruition of music and films, along with surfing the web and writing emails occupy the higher places in the frequency distribution, while the use of Social Network Site and Instant Messaging occupy an intermediate position. Once again chatting in forum and playing online are the least favorite activities. We find, in this sub-sample, a different approach to the use of Internet, more focalized on individual activities and bending less on the uses in network.

Cyberbullying diffusion

The percentage of respondent involved as victims in episodes of cyberbullying changes drastically between secondary school and university. The distribution among the secondary school students is of 39% uninvolved and 61% involved, while for University respondents the percentage are 62% uninvolved and 38% involved. Among secondary school students, the 42% report having been victim of two to four episodes within the previous six months.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
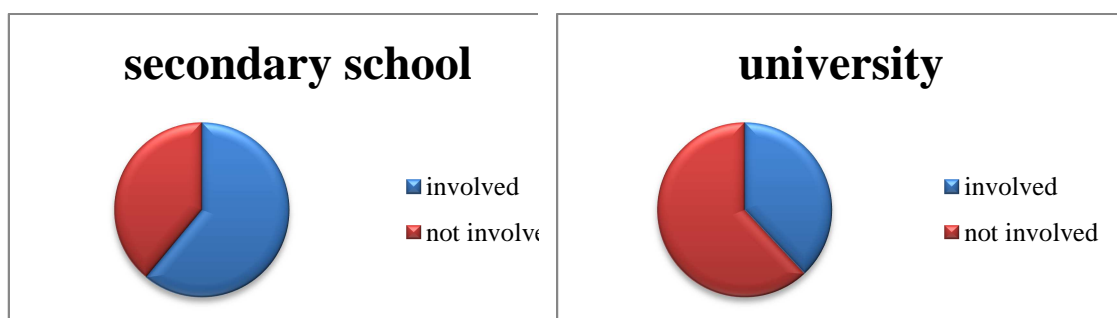
More specifically, the 35% (secondary school) and 30% (university) were victims of online gossip, 28% and 12% a mean comment on a Social Network page, 26% and 16% of the respondents received a mean or threatening email or text message, 4% and 3% were excluded from an online forum, 22% and 15% had an embarrassing photo published online, 21% and 12% had a private message published online, 53% and 25% received prank calls, 12% and 5% had their online identity stolen.

The following table reports the overall percentage of respondents reporting being victimized for each submitted item.
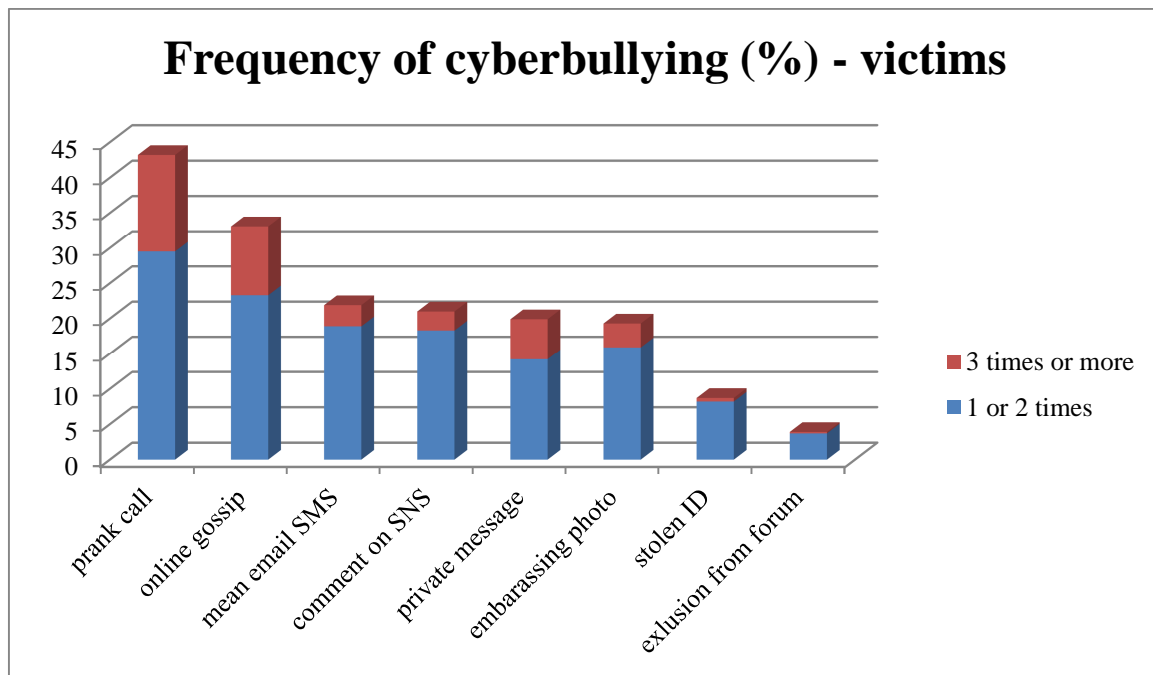
Percentages of respondents who have been victims of cyberbullying in the six months preceding the investigation

Also when asked about their involvement as bullies in acts of cyberbullying the distribution of involvement between secondary school and University show opposite trends. While among the secondary school respondents 43% report not having carried out bullying behavior and the 57% being involved in at least two of them in the previous six months, among university students 69% belong to the uninvolved group and 31% to the involved group.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

secondary school

- involved
- not invol

university

- involved
- not involved
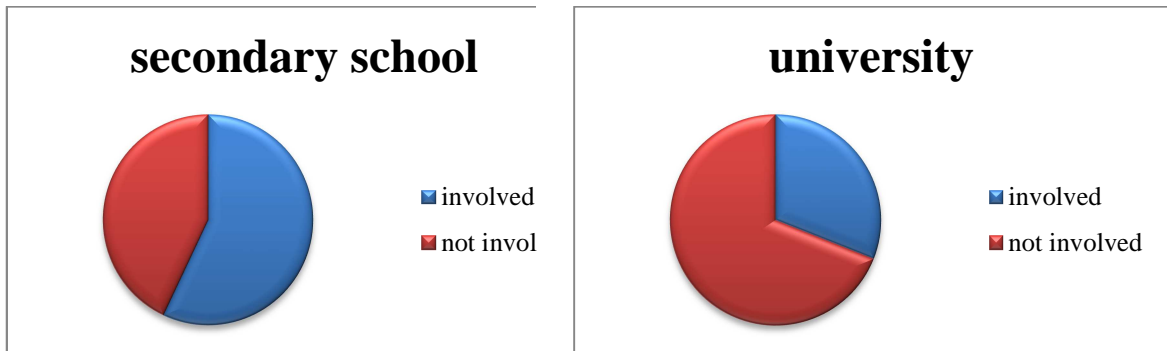
More specifically 22% of the secondary school students and 14% of the university students sent a mean or threatening email or text message, 27% and 12% left a mean comment on a Social Network page, 5% and 2% excluded someone from an online forum, 36% and 27% spread gossip online, 18% and 9% published the embarrassing photo of someone without asking permission, 26% and 20% published a private message, 57% and 16% made prank calls, 8% and 5% stole someone's online ID.

The following table reports the overall percentage of respondents reporting acting as bullies for each submitted item.
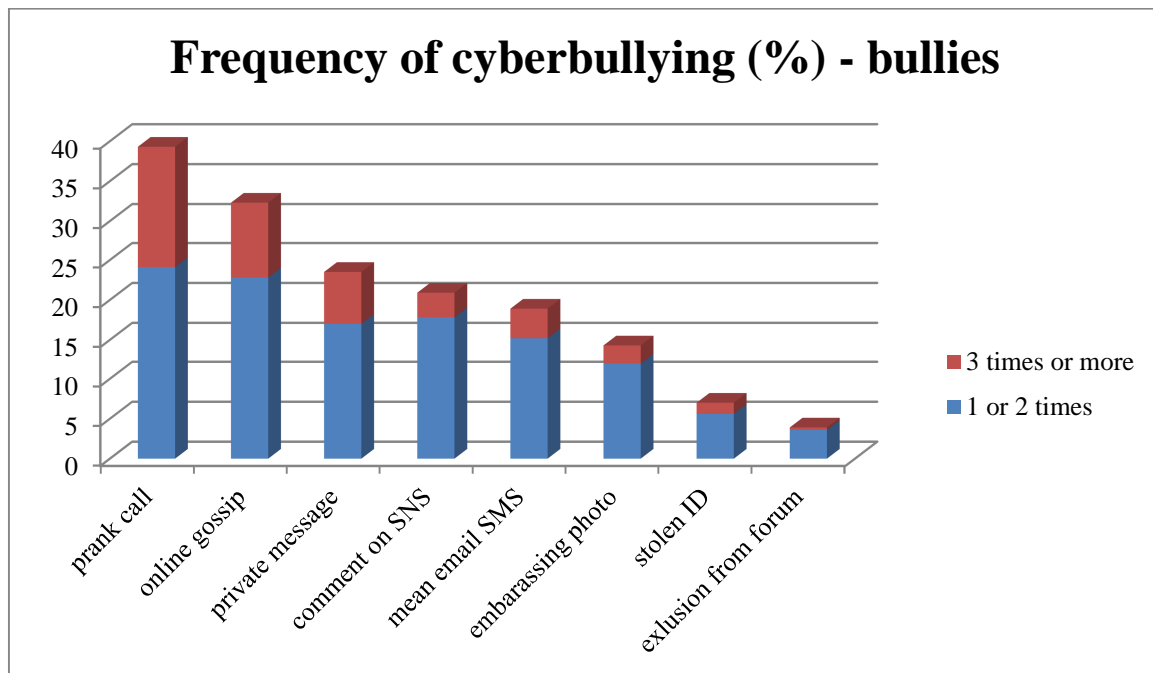
Percentages of respondents who have been cyberbullying someone in the six months preceding the investigation.

Cyberbullying evaluation

The item by item evaluation of the acceptability of the cyberbullying behavior show, among the Italian sample, a high level of accordance between the grade of rejection of

135

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

cyberbullying behavior and the frequency with which those behavior are signaled as victims and bullies. The most frequent acts are also those evaluated as less serious. Only exception is the exclusion form forum, as this activity is very infrequent among the sample.
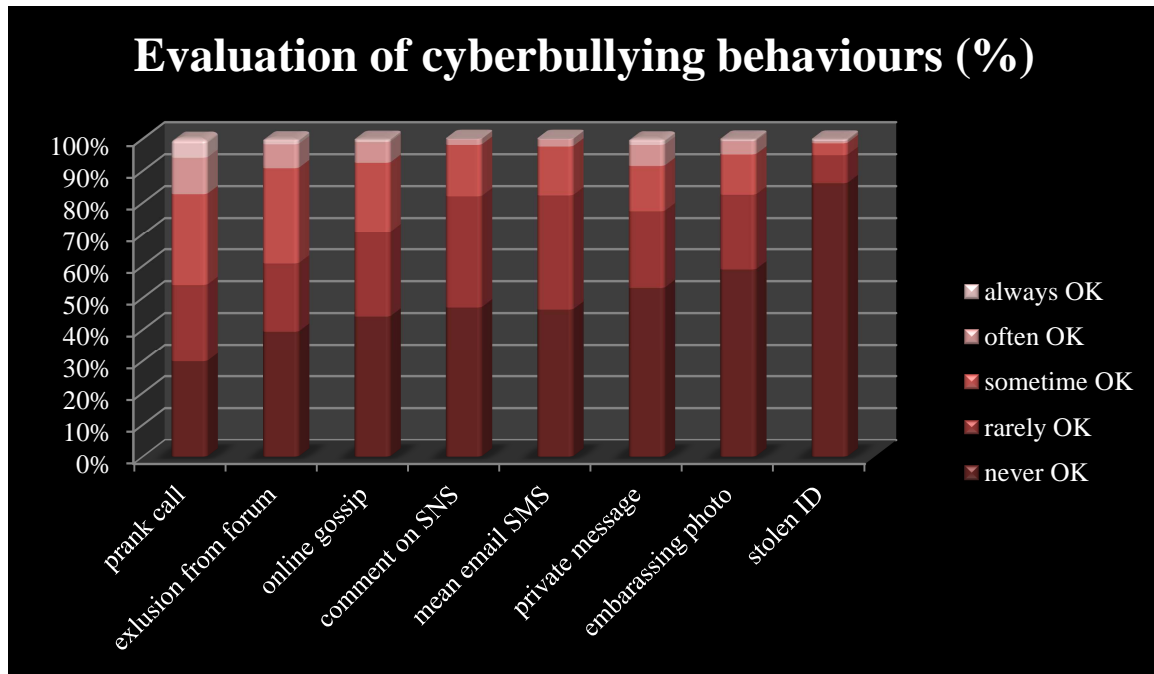
Item by item evaluation of the acceptability of different kind of cyberbullying

While on most of the items there is no difference between secondary school students and university students' evaluation, the following are evaluated as more acceptable by secondary school students:

- Prank calls: Kendall's tau c = ,381; p<,001
- Publication of embarrassing photos without permission: Kendall's tau c =,140; p<,001
- ID thief: Kendall's tau –c = ,087; p<,001

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
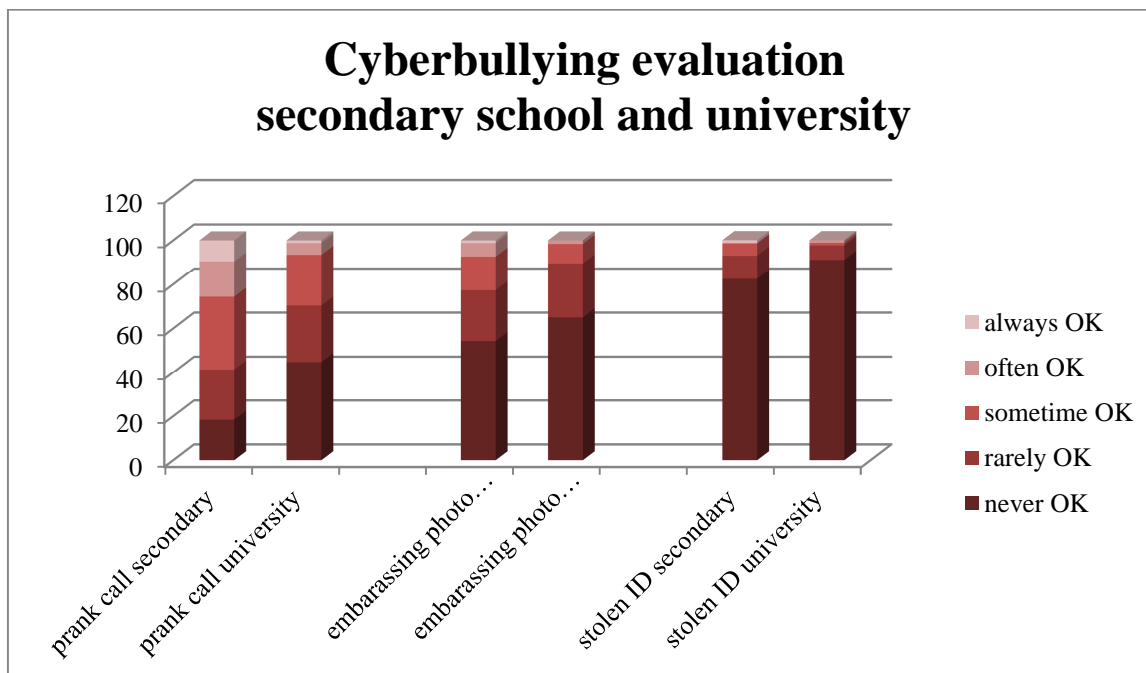
Differences in the evaluation of cyberbullying behaviours between secondary school and university respondents

The association between the group of involvement and the group of cyberbullying rejection is strong (Cramer's V = ,313; p<,001). The rejection is very high for the uninvolved respondents, and very low for the bully-victim respondents, while victim only and bully only respondents seem to share an average level of rejection.

Cross tabulation
% within Group of involvement

		CB evaluation categories			
		light rejection	medium rejection	high rejection	Total
Group of involvement	uninvolved	13,4%	40,2%	46,4%	100,0%
	victim only	23,2%	52,2%	24,6%	100,0%
	bully only	27,1%	52,1%	20,8%	100,0%
	bully-victim	49,4%	42,2%	8,3%	100,0%
Total		28,9%	43,7%	27,5%	100,0%

Differences in the level of cyberbullying rejection among the four groups of involvement

The non-parametric analysis show a very strong correlation of the cyberbullying evaluation index with both victims' and bullies' global level. The negative correlation is especially strong between the level of cyberbullying rejection and the number of cyberbullying episodes carried out, showing that the higher is the score on the cyberbullying rejection variable the lower is in the number of episodes reported.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Correlation

		Victim global level	Bully global level
CB Evaluation Index	Kendall's tau_b	-,311[**]	-,380[**]
	Sig. (2-tailed)	,000	,000
	N	527	515

Nonparametric correlation between the level of cyberbullying rejection and the involvement in cyberbullying episodes

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
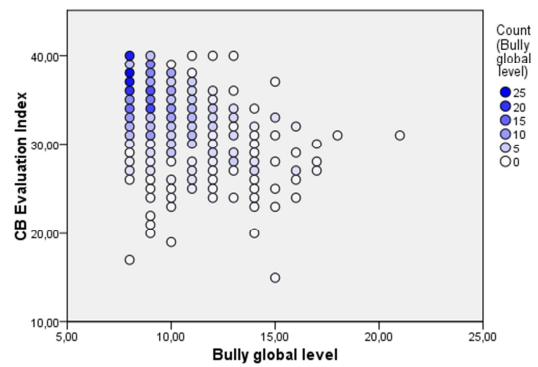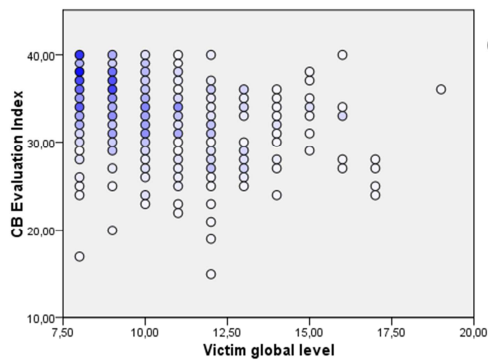
The evaluation of the scenarios

The two scenarios describe different episodes of cyberbullying, in which the difference in the characterization of the victim may have an impact on the evaluation of the gravity of the act by the respondents. Overall, both scenarios are evaluated as unacceptable, serious situations, but the condemnation is less extreme for the text message scenario.
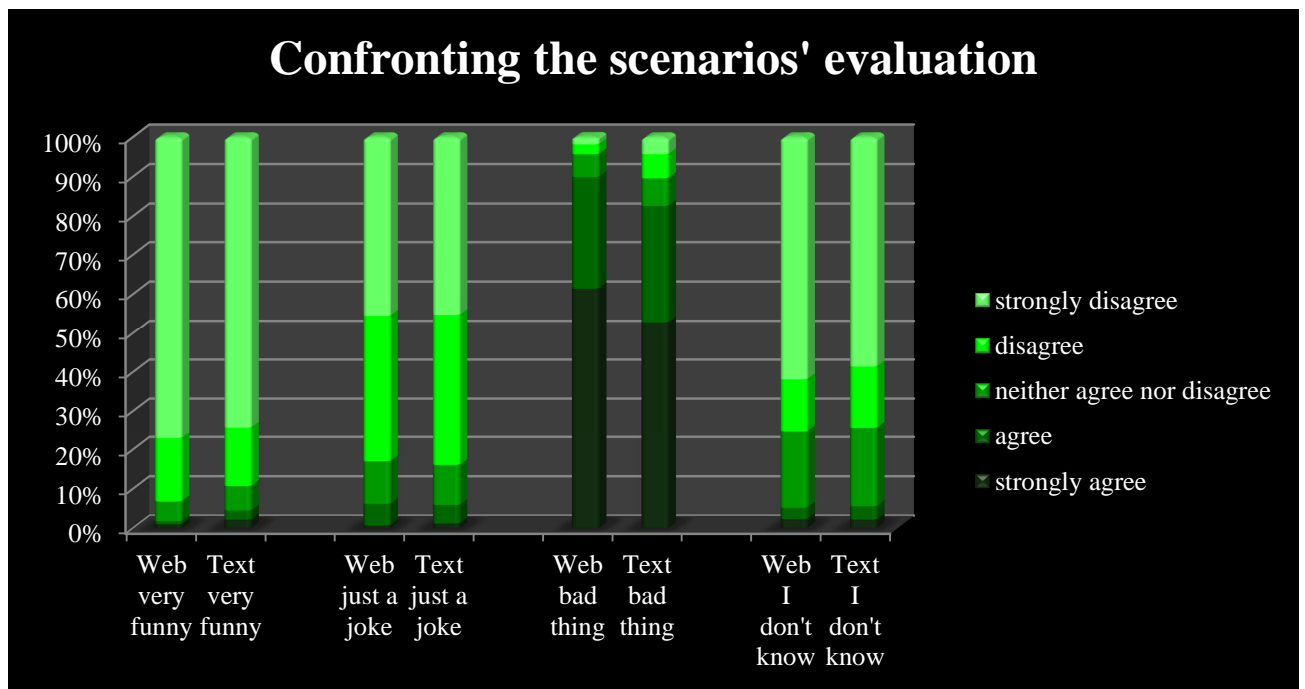
Confront of the evaluation of the scenarios' gravity expressed by the respondents

The distribution of the respondents between the concerned and unconcerned groups in the two scenario hold a strong correlation (Phi = ,304; p<,001). More than half of the sample fall into the concerned category in both scenarios, and only 13% fall in the unconcerned group in both cases.

Cross tabulation

		Text message scenario		
		Concerned	Unconcerned	Total
Web page scenario	Concerned	59%	17%	76%
	Unconcerned	11%	13%	24%
Total		70%	30%	100%

Concordance and discordance in the concernment expressed in the two scenarios

Crosstab show no correlation between the group of involvement and the belonging to the concerned or unconcerned group in the web scenario (Cramer's V = ,057; p= ,622) and a very weak one between the group of involvement and the belonging to the concerned or unconcerned group in text message scenario (Cramer's V = ,121; p<,05).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

How do Italian respondents see cyberbullies?

The vision of the motivations and characteristics of the bullies in both scenarios are quite close between secondary school and university respondents.

More than 86% of the respondents evaluate the two situations as intentionally hurtful, while only 6,8% in the web scenario and 7,5% in the text scenario imagine that the bullies did not intend to harm their victims.

Did the bullies realize the length and width of reach of the jokes they were playing? On this subject Italian respondents are less compact. Among secondary school respondents, the 37% for the web scenario and 33% for the text scenario thinks that bullies were not aware of the potential magnitude of the situation, while 41% and 44% thinks they were. Among university respondents the vision of the bullies is slightly less severe. In this case 47% (web scenario) and 44% (text scenario) imagine the bullies not aware of the length and width of reach of the jokes, while 33% and 35% state the opposite. Undecided are about 20% in all cases.

In the answers to the web scenario only 23% of secondary school respondents and 25% of university respondents imagine the bullies as wishing to remain anonymous, while 50% of secondary school and 51% of university respondents believe them not looking for anonymity. In the text scenario the distributions are even closer between secondary school and university, and while 37% consider the bullies not looking for anonymity, 37% imagine they were. In the second scenario then, anonymity is perceived as more relevant, still not an essential feature for the cyber-bullies.

The evaluation of the power unbalance between the bullies and their victims see again a differentiation in the answers of secondary school and university respondents. Among the younger respondents, the idea that the bullies felt stronger than their victims is shared by the 55% (web scenario) and 72% (text scenario) of the respondents while 32% (web scenario) and 11% (text scenario) do not agree with it. Among the university respondents, 41% (web scenario) and 64% (text scenario) agree with the idea that the bullies felt stronger than their victims, while 43% (web scenario) and 21% think the opposite. In this case then, secondary school students seem to express an opinion closer to the one of the experts, while the idea of a "weak" bully is more supported by the university respondents.

The opinions expressed in these set of questions do not correlate with either the level of victimization and bullying expressed by the respondents.

Significant difference is found in the assessment of the fault of the victim, for both scenarios (web scenario Kendall's tau c = -,119; p<,001 and text scenario Kendall's tau c = ,126; p<,001). In the web page scenario 77% of the secondary school and 71% of the university respondents disagree with the attribution of fault to the victims, while 9% and 10% believe the victims responsible for what happened to them. In the text story scenario 16% of secondary school respondents and 11% of the university indicate the victim as responsible for what happened, while 61% of the secondary school and 75% of the university respondents disagree with this statement. In the other three variables no significant difference is found. In the web scenario the actual bully and the participant to the joke are seen as responsible from the higher part of the respondents (about 78%) and

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
   A. A. 2010/11
   Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

this figure is closely followed by the 63% of respondents holding the web responsible for the episode. In the text scenario the responsibility of all of the participants is the one collecting the higher proportion of consent (85% of the respondents), followed by the bully responsibility (73% of the respondents). Only 45% indicate the mobile phone as responsible, while on this specific variable a quite high part of the respondents has no opinion (34% of the respondents).

Confront of the responsibilities' attribution in the two scenarios
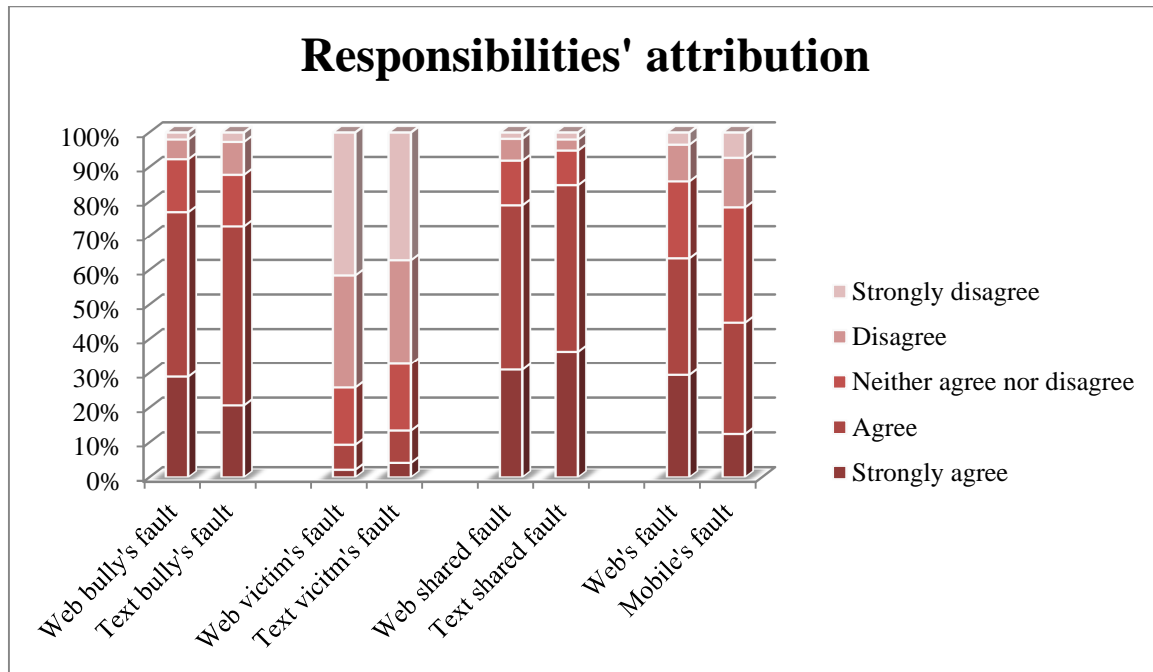
Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

5.6.5   Turkey

The 123 respondents of the Turkish sample come from a public university, rated among the best ones in Turkey.

ICT diffusion

Among the respondents, the 96% uses the mobile phone at least once a day, and the 90% connect to the Internet at least once a day. Similarly to what observed in the Italian sample of University students, also in this case the respondents express preferences for activities more connected to personal interests, such as sending emails, surfing the web and studying. These activities are followed by listening to music or watching movies and finally using Social Network Sites, signalled with moderate frequency, as is also the use of Instant Messaging. Once again chatting in forum and playing online are the least frequently reported activities.
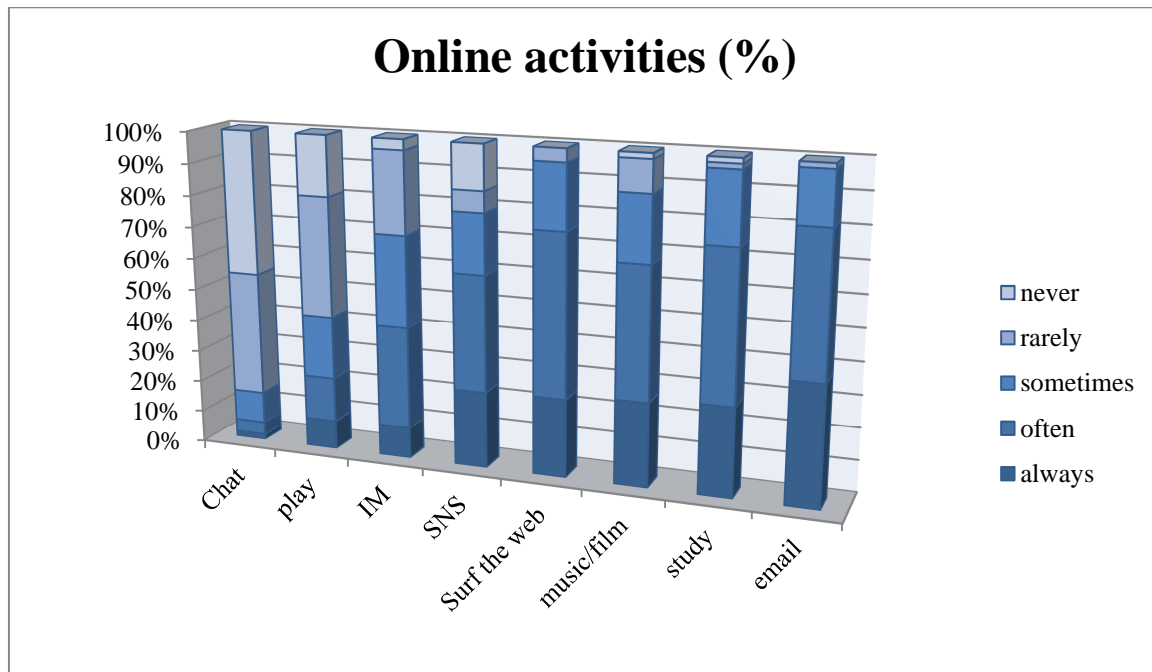
Frequency of engagement in the listed online activities.

Cyberbullying diffusion

Among the interviewed, 32% of the students were victim of at least two episodes of cyberbullying within the previous six months, and 14% attacked someone via ICT at least twice in the previous six months. These percentages are much smaller than those detected in other countries, where the respondents came from secondary schools.

The frequency of the episodes reported as victims show that, among the sample, 43% received a prank call, 22% received at least one mean or threatening email or text message, 13% had their online ID stolen, 9% received a mean comment on a Social Network page,

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

7% was victim of online gossip, 6% had an embarrassing photo published without previous consent, 5% was excluded from an online forum.

The relative position of ID thief compared with the frequency of the other kind of cyberbullying is unusually high, as this specific behavior holds the third position, just after prank calls and mean or threatening email and text messages, while in the other countries it's usually positioned well after other, more common practice of cyberbullying.

The following table displays the percentage of frequency of each item among the respondents.
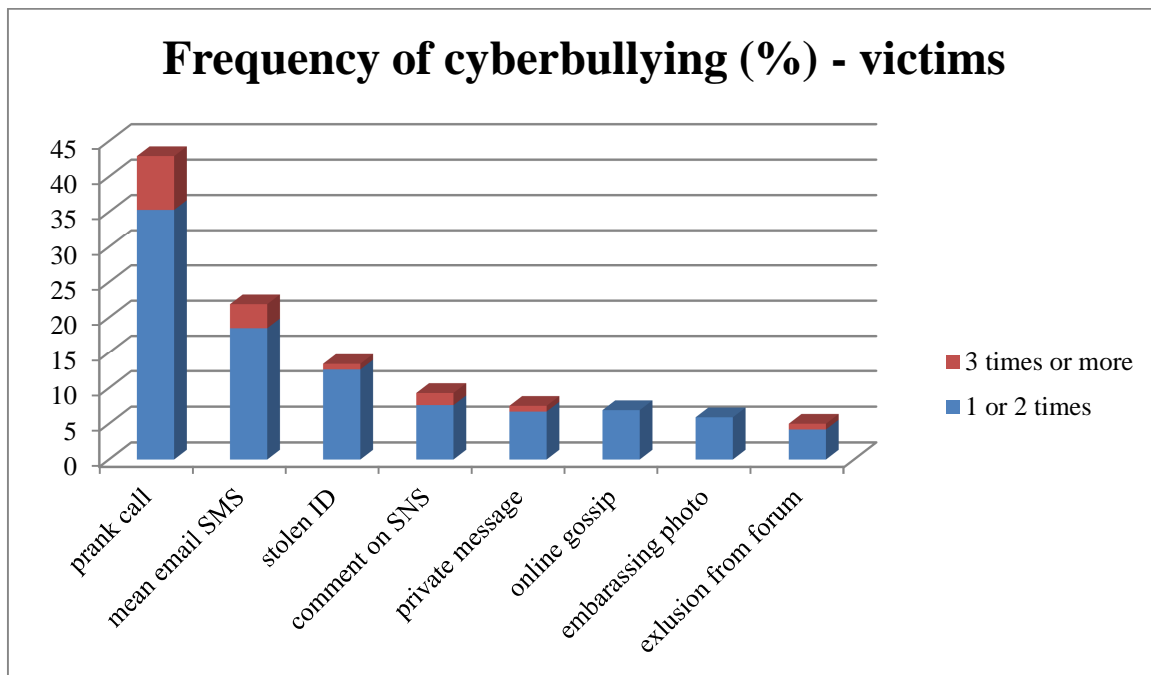
Percentages of respondents who have been victims of cyberbullying in the six months preceding the investigation

The percentage of students involved in this sub-sample is closer to those collected among the Italian university students than with any other subsample, with 68% of the respondents uninvolved and 31% involved in at least two episodes in the previous six months. These are the only two cases in which the proportion of uninvolved is higher than the one of involved respondents.

The frequency of the episodes reported by the respondents as bullies show that, within the previous six month, 22% made at least one prank call, 14% sent a mean or threatening email or text message, 7,7% published someone else private message without prior consent, 6% left a mean comment on someone else Social Network page, 3,4% published an embarrassing photo of someone else without prior consent, 3,4% stile someone online ID, 2,6% spread an online gossip and 1,7% excluded someone from an online forum.

The following table reports the percentage of frequency for each item. This table show even more clearly the small proportion of respondents reporting having acted as cyberbullying, with most of the items being indicated only in the "one or two times" value.
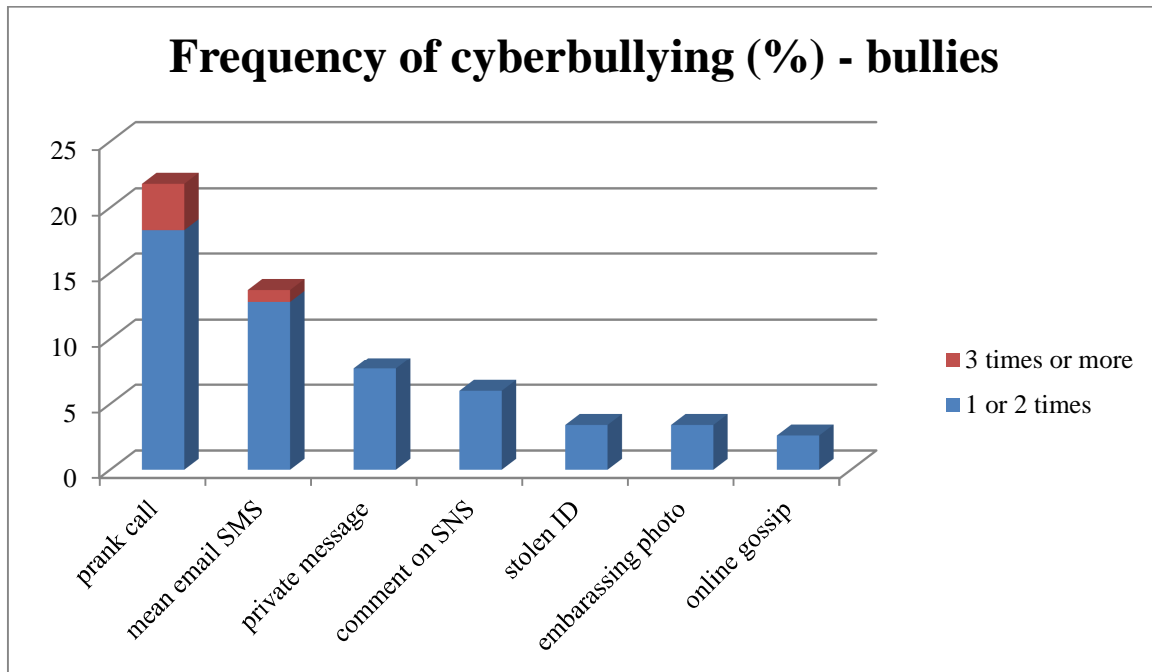
Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Frequency of cyberbullying (%) - bullies

Percentages of respondents who have been cyberbullying someone in the six months preceding the investigation.

The characteristics observed in the victim report are even more evident when observing the distribution of the bullies' involvement: 86% uninvolved and 14% involved. Once again the respondents behave in a way more similar to the one detected among the Italian university students than any other subsample.

Cyberbullying evaluation

After stating the frequency of occurrence of the submitted items, the responded indicated how grave they considered each one of them. The results are shown in the following table. Turkish respondents express an especially severe opinion on this subject, with an extremely high rate of complete disapproval of the listed behaviours, with the only exception of the exclusion from online forums, a practice not very diffused among the sample.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
  A. A. 2010/11
  Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
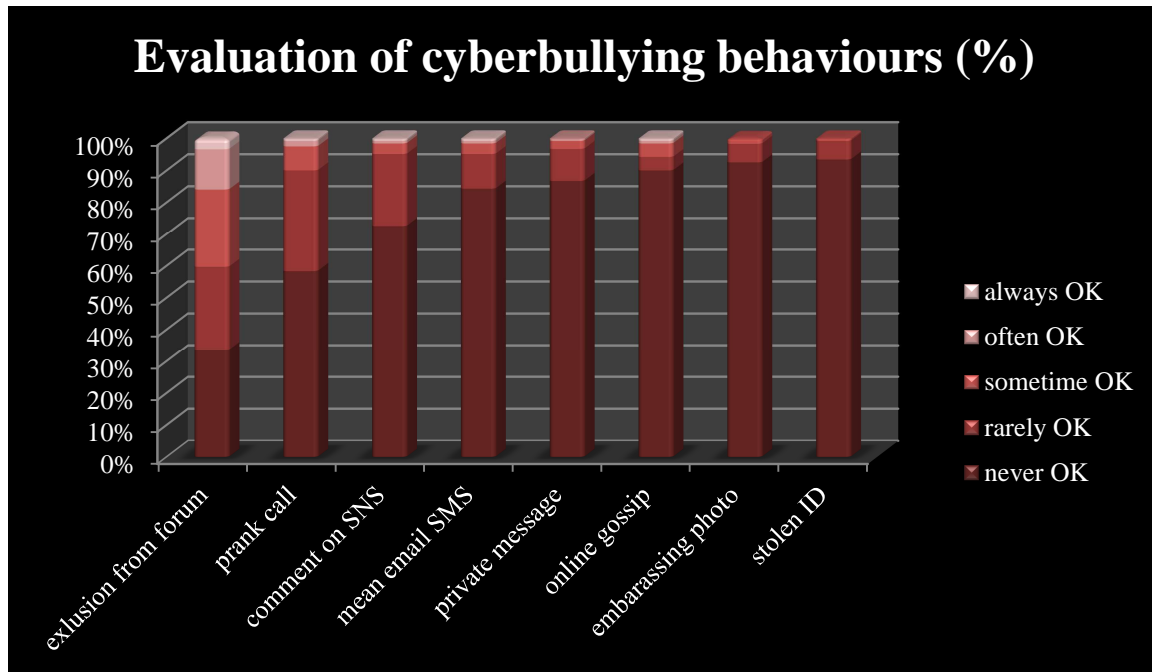
Item by item evaluation of the acceptability of different kind of cyberbullying

The answers to these items are summarized in three main cyberbullying evaluation categories, going from low to high cyberbullying rejection. The 70% of the sample belong to the high rejection category, 23% to the medium one and only 7% to the low rejection group. There is a moderately strong correlation between the evaluation given by the respondents and the group of involvement to which they belong (Cramer's V =,315; Approx. Sig. = ,002). The small size of this subsample doesn't allow a clear picture of the distribution of respondents, but it seems to support the idea of the bully-victim category as the less worried about cyberbullying, and more prone to justify eventual online misbehaviours.

Crosstabulation
% within Group of involvement

		CB evaluation categories			
		light rejection	medium rejection	high rejection	Total
Group of involvement	uninvolved	2,7%	20,5%	76,7%	100,0%
	victim only	5,0%	20,0%	75,0%	100,0%
	bully only		33,3%	66,7%	100,0%
	bully-victim	33,3%	41,7%	25,0%	100,0%
Total		6,5%	23,1%	70,4%	100,0%

Differences in the level of cyberbullying rejection among the four groups of involvement

The nonparametric correlation between the cyberbullying evaluation index, adding up the opinions expressed for each of the item of the cyberbullying list, and the two indexes of cyberbullying frequency, victim global level and bully global level, show a moderately strong correlation between the variables. It is interesting to note that once again the correlation is stronger between evaluation and bully global level.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Correlation

		Victim global level	Bully global level
CB Evaluation Index	Kendall's tau_b	-,253[**]	-,311[**]
	Sig. (2-tailed)	,000	,000
	N	113	108

Nonparametric correlation between the level of cyberbullying rejection and the involvement in cyberbullying episodes
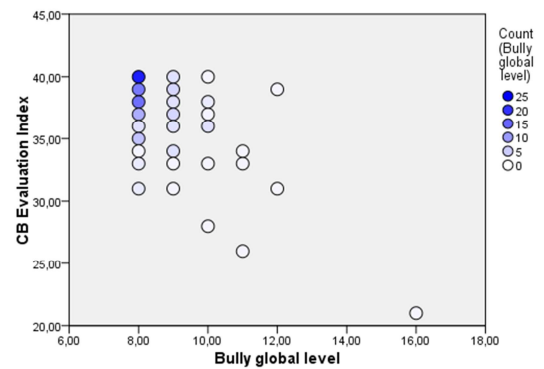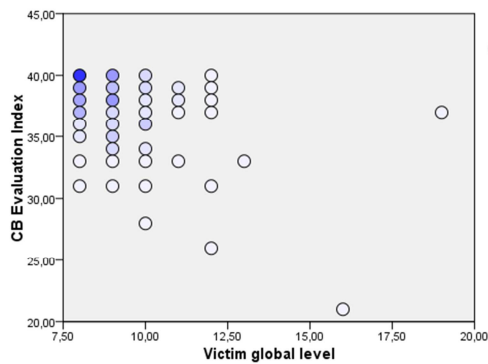
The evaluation of the scenarios

The evaluation of the scenario show a polarized situation, with most of the respondents clearly rejecting the jokes, but wiht a surprisingly relevant percentage of them indicating the situations as very funny. Quite surprisingly, again, it's the webpage scenario the one being evaluated less severely, and not, as hypothesized, the text message one. This results highlight a certain level of uncongruence of these results with the opinions expressed in the abstract evaluation of the cyberbullying behaviours.
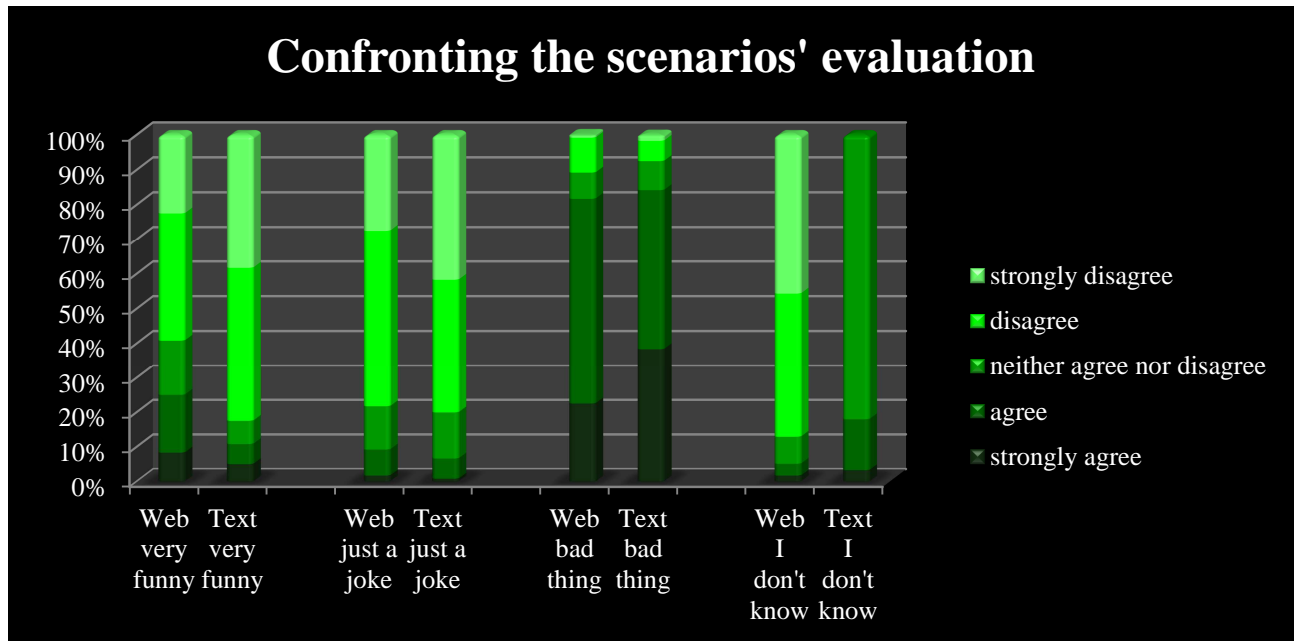
Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Confront of the evaluation of the scenarios' gravity expressed by the respondents

The association between the concerned respondents in the first and second scenario is a moderate one (Phi = ,245; p< ,05),and as indicated by the previous data, is possible to observe a shift of positions between the first and the second scenario, with the concerned and unconcerned percentages radically changing and going from 39% to 71% for the concerned group and from 61% to 29% for the unconcerned group.

Cross tabulation

		Text message scenario		
		Concerned	Unconcerned	Total
Web page scenario	Concerned	33%	6%	39%
	Unconcerned	38%	23%	61%
Total		71%	29%	100%

Concordance and discordance in the concernment expressed in the two scenarios

The concern expressed in both scenarios shows no correlation with the cyberbullying group of involvement, confirming the detachment between abstract evaluation, evaluation of a concrete situation and actual behavior.

How do Turkish respondents see cyberbullies?

Four items investigate the opinion of the respondents on relevant aspects of cyberbullying. The first one is the intentionality of the harm inflicted, and on this subject almost the totality of the respondents in the web scenario (97,5%) and the great majority in the text scenario (89%) agree in considering the bullies intentionally acting in order to hurt their victims.

For what concern the extent of the jokes, meaning with it for how long and how far they would go, the Turkish sample is prone to evaluate the bullies as quite unaware of the results of

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

their actions in the webpage scenario (19% of the sample) while 42% in the text message scenario think that the bully knew how far the joke would go.

On the anonymity issue a large part of the sample believe the bully not willing to remain anonymous in the web scenario (47,5% of the sample) while 33% imagine the bully seeking anonymity. The percentages of answer reverse in the text scenario, where 60% of the respondents indicate they believe the bully willing to remain anonymous, while 30% express the opposite opinion.

As for the difference of power between bully and victim, necessary condition to qualify an act as bullying, 57% of the respondents in the web scenario think the bully felt stronger than the victim, while only 31% express the same opinion in the text message scenario. Once again then we observe a very different representation of the bullies in the respondents' opinion, when modifying the frame of the cyberbullying episode.

The opinion expressed on these items show no correlation with the cyberbullying group of involvement.

The following step in the scenario evaluation take into account the assessing of responsibilities for what happened. The sample could be divided in two maingroups of answer, a bigger one seing as responsables for the episodes primarely the bully, then the other partecipants and the media, and the other one sharing in a more equal proportion the responsabilities among all artecipants, victims included. The 62% of respondents in the web scenario and 65% in the text scenario indicate the bullies a responsibles for the episode, while respectively 24% and 15% disagree with this statement. For what concern the victims' responsibility, in the web scenario the 14% of the respondents held the victim responsible of what happened, and the percentage decrease to 8% in the text scenario. Also the percentage of unsure is much higher in the web scenario, 24% versus the 5% of the text scenario, and the percentages of respondents thinking the victim not responsible for what happened are 62% in the web scenario and 87% in the text scenario. In the assesment of the shared responsabilities once again a higher percebtage of respondents agrees with the statement in the textscenario, 83% than in the web scenario 61%. The Internet is seen as "responsible" for the episode from the 66% of the respondents while 14% disagree with this opinion. The distribution change when the mobile phone impact is evaluated, 48% of respondents agree in recognizing the mobile tecnology as responsible, while 26% disagree with this statement.

It is peculiar to note that, unlike the respondents of the other countries, in Turkey is the webpage scenario the one eliciting a less polarized evaluation, and a less clear comdemnation of the bully.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"
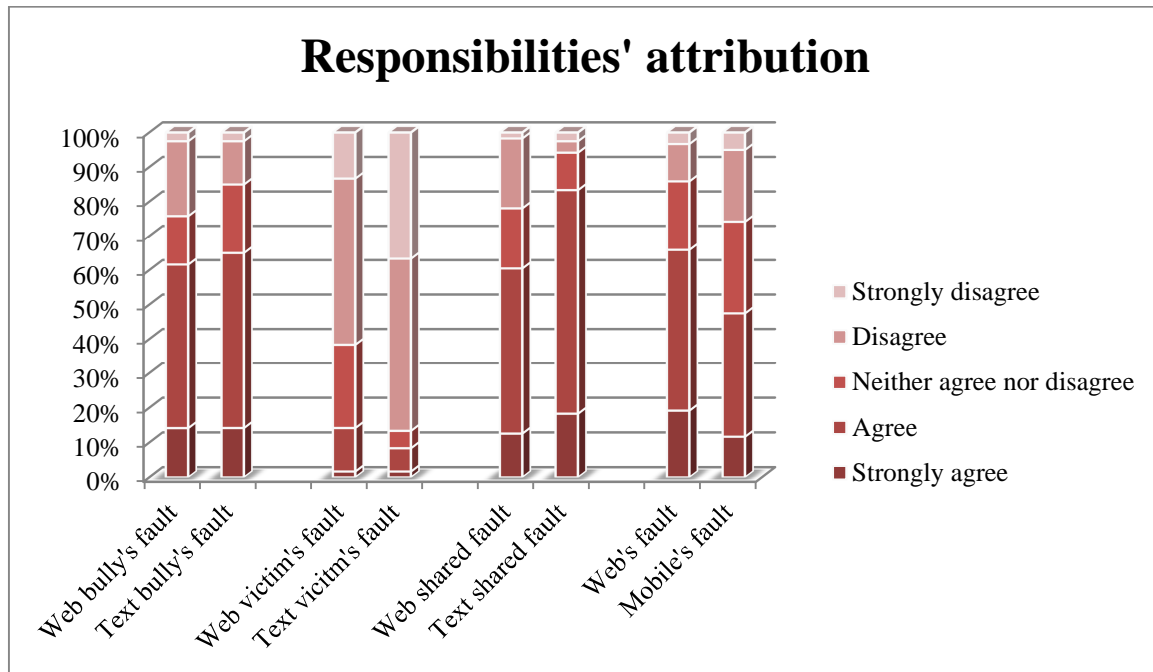
Confront of the responsibilities' attribution in the two scenarios

5.7 International predictors of cyberbullying

The multinomial logistic regression is an extension of the binomial logistic regression model that can be used when the dependent variable has more than two nominal categories, as we see in this case, and does not make any assumptions of normality, linearity, and homogeneity of variance for the independent variables.

In this case the *dependent* variable "Group of involvement" is dummy coded into multiple 1/0 variables, ending with 3 dummy variables and 1 reference variable. All but one category has its own dummy variable. Each category's dummy variable has a value of 1 for its category and a 0 for all others. The reference category, "uninvolved" doesn't need its own dummy variable, as it is uniquely identified by all the other variables being 0.

The mulitnomial logistic regression then estimates a separate binary logistic regression model for each of those dummy variables. The result is *n*-1 binary logistic regression models. Each one tells the effect of the predictors on the probability of success in that category, in comparison to the reference category "uninvolved". As the predictors can affect each category differently, each model has its own intercept and regression coefficients.

This kind of analysis allow to estimate simultaneously all the parameters, obtaining a smaller overall unexplained error than the one that would result by the estimation of a series of binary regression models

A first model is run, including all as independent variables: age, sex, school level, parent's education level, parent's occupation, country, level of mobile and Internet use, frequency of

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Social Network Site and Instant messaging use and cyberbullying evaluation. For this analysis we will follow the convention of treating ordinal level variables as metric variables.

Parent's education level, level of mobile and Internet use, frequency of Social Network Site use and cyberbullying evaluation are ordinal variables, and for this analysis we will consider them as satisfying the metric or dichotomous level of measurement requirement for independent variables.

This model support the existence of a significant relationship between the dependent variable "Group of involvement" and the independent variables **sex, school level, use of mobile phone, use of Social Network and Instant Messaging, cyberbullying evaluation**, while the variables reporting parent's level of education and parent's occupation, country and age do not appear to have a significant impact on the dependent variable. It is important to note that the variable country only become significant if the school level is not included, probably this is due to the fact that only one country (Italy) is represented in both school levels, while the other are either at secondary school level (Brazil, Colombia, India) or university level (Turkey). Another relevant fact is that although school level significantly impact on the dependent variable, age does not: within school group the distributions are not differentiated, while a significant difference is found between secondary school and university respondents.

The model presented only includes the significant variables identified in the previous analysis.

Case Processing Summary

		N	Marginal Percentage
Group of involvement	not involved	403	35,2%
	only victim	173	15,1%
	only bully	102	8,9%
	bully-victim	466	40,7%
sex	male	564	49,3%
	female	580	50,7%
School level	secondary school	813	71,1%
	university	331	28,9%
Valid		1144	100,0%
Missing		205	
Total		1349	
Subpopulation		407[a]	

The ratio of valid cases to independent variables is 190 (1144/6) therefore the requirement for a minimum ratio of cases to independent variables fixed to 20/1 is satisfied.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Model Fitting Information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only Final	1,830E3 1,395E3	434,214	18	,000

The presence of a relationship between the dependent variable and combination of independent variables is significant at <.001 level. As none of the independent variables in this analysis had a standard error larger than 2.0 we can proceed with the interpretation of the results, excluding the presence of numerical errors, such as multicollinearity.

Classification

Observed	Predicted				
	not involved	only victim	only bully	bully-victim	Percent Correct
not involved	291	0	0	112	72,2%
only victim	89	0	0	84	,0%
only bully	34	0	0	68	,0%
bully-victim	88	0	0	378	81,1%
Overall Percentage	43,9%	,0%	,0%	56,1%	58,5%

The classification accuracy rate is 58,5%, and we consider the model as useful, as it outstep the benchmark fixed at 39,7%, representing the 25% improvement over the rate of accuracy achievable by the chance alone criteria of 30,3%% (0,106+0,023+0,008+0,166= 0,303; 1,25 x 30,3= 37,9).

All the independent variables in the model significantly help to discriminate between the groups of the dependent variable.

Parameter Estimates

Group of involvement		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
only victim	Intercept	-1,591	,611	6,776	1	,009			
	UseMobile	,127	,091	1,978	1	,160	1,136	,951	1,356
	RevSNS	,147	,075	3,819	1	,051	1,159	1,000	1,343
	RevIM	,062	,077	,646	1	,421	1,064	,915	1,237
	CBevalCat	-,401	,133	9,077	1	,003	,669	,516	,869
	[sex=1,00]	-,420	,197	4,552	1	,033	,657	,447	,966
	[sex=2,00]	0[b]	.	.	0	.	.	.	.
	[SchoolLev=1,00]	,911	,217	17,703	1	,000	2,487	1,627	3,801
	[SchoolLev=2,00]	0[b]	.	.	0	.	.	.	.
only bully	Intercept	-3,375	,863	15,287	1	,000			
	UseMobile	,493	,144	11,655	1	,001	1,638	1,234	2,174
	RevSNS	,037	,095	,152	1	,697	1,038	,862	1,249
	RevIM	,132	,095	1,923	1	,166	1,141	,947	1,376
	CBevalCat	-,870	,159	29,936	1	,000	,419	,307	,572
	[sex=1,00]	,247	,241	1,046	1	,307	1,280	,798	2,053
	[sex=2,00]	0[b]	.	.	0	.	.	.	.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

	[SchoolLev=1,00]	1,481	,295	25,253	1	,000	4,397	2,468	7,835
	[SchoolLev=2,00]	0[b]	.	.	0	.	.	.	.
bully-victim	Intercept	-1,075	,525	4,183	1	,041			
	UseMobile	,188	,076	6,058	1	,014	1,206	1,039	1,401
	RevSNS	,291	,072	16,410	1	,000	1,338	1,162	1,540
	RevIM	,308	,069	19,763	1	,000	1,360	1,188	1,558
	CBevalCat	-1,392	,116	144,215	1	,000	,249	,198	,312
	[sex=1,00]	-,181	,170	1,124	1	,289	,835	,598	1,166
	[sex=2,00]	0[b]	.	.	0	.	.	.	.
	[SchoolLev=1,00]	1,562	,202	60,038	1	,000	4,767	3,211	7,077
	[SchoolLev=2,00]	0[b]	.	.	0	.	.	.	.

a. The reference category is: not involved.
b. This parameter is set to zero because it is redundant.

Victim only relative to uninvolved:

School level: In the comparison of respondents involved only as victims in cyberbullying episodes to those uninvolved, the probability of the Wald statistic (17,70) for the variable school level is ,000 and the null hypothesis that the b coefficient for school level is equal to zero for this comparison is rejected. The value of Exp(B) is 2,49 which implies that for each unit increase in school level the odds increase by 49% (2,49 - 1.0 = 1,49), therefore secondary school students, compared to university students have 49% more probability of belonging to the victim only group than to the uninvolved group.

Sex: Survey respondents who are male are less likely than females to be in the group of victim only rather than the group of uninvolved. Survey respondents who are male are 34% less likely (0.657 – 1= -0,343) to be in the group of victim only than in the uninvolved group.

Cyberbullying evaluation: as cyberbullying rejection increase, the logit of being part of the victim only group compared to that of being uninvolved decrease. For each unit increase in cyberbullying evaluation, the odds of being in the group of survey respondents who are victim only decreased by 33%. (0,669 – 1 = - 0.331).

Mobile use: In the comparison of respondents involved only as victims in cyberbullying episodes to those uninvolved, the probability of the Wald statistic (1,98) for the variable mobile use is ,160 and the null hypothesis that the b coefficient for mobile use is equal to zero for this comparison is accepted. The level of mobile use does not help discriminating between victims only and uninvolved respondents.

Social Network Site use: The use of SNS significantly helps discriminating victim only and uninvolved respondents. For each unit increase in the level of SNS use the probability of belonging to the victim only group compared to the one of belonging to the uninvolved group increase of 16% (1,159-1= ,159).

Instant Messaging Use: The use of IM significantly helps discriminating victim only and uninvolved respondents. For each unit increase in the level of IM use the probability of belonging to the victim only group compared to the one of belonging to the uninvolved group increase of 14% (1,136-1= ,136).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Bully only relative to uninvolved:

School level: School level significantly help to distinguish between bullies only and uninvolved respondents (Sig.=,000). More specifically, secondary school students have 340% probability more than university students of belonging to the bully group than to the uninvolved group (4,397-1=3,397).

Sex: In the comparison of respondents involved only as bullies in cyberbullying episodes to those uninvolved, the variable sex have a significance level of ,307 and the null hypothesis is accepted. Gender does not help discriminating between bullies only and uninvolved respondents.

Cyberbullying evaluation: as cyberbullying rejection increase, the logit of being part of the bully only group compared to that of being uninvolved decrease. For each unit increase in cyberbullying rejection, the odds of being in the group of survey respondents who are bullies only decreased by 58%. (0.419 – 1.0 = - 0.581).

Mobile use: in this case, the null hypothesis is rejected (Sig.=,001) and the variable helps discriminating between bullies only and uninvolved respondents. More specifically, for each unit increase of the mobile use variable, the odds of being part of the bully only group compared to not being involved increase of 64% (1,638-1= 0,638).

Social Network Site use: the variable assessing the level of SNS use does not reach a significant level (Sig. = ,697) therefore the null hypothesis is accepted, the variable do not help discriminating between bully only and uninvolved respondents.

Instant Messaging use: the variable assessing the level of IM use does not reach a significant level (Sig. = ,166) therefore the null hypothesis is accepted, the variable do not help discriminating between bully only and uninvolved respondents.

Bully-victim relative to uninvolved

School level: The variable significantly helps discriminating between bully-victim and uninvolved respondents. The odds of secondary school students belonging to the bully-victim group compared to the uninvolved group are 377% (4,767-1= 3,767) more than university students.

Sex: In this case the variable do not reach the level of significance (Sig.= ,289), and the variable cannot be helpful in discriminating between bully-victim and uninvolved respondents.

Cyberbullying evaluation: as cyberbullying rejection increase, the logit of being part of the bully-victim group compared to that of being uninvolved decrease. . For each unit increase in cyberbullying rejection, the odds of being in the group of survey respondents who are bully-victims decreased by 75%. (0.249 – 1.0 = - 0.751).

Mobile use: the b value is positive, this means that the odds of being a bully-victim at the growth of mobile use More specifically, for each unit increase of the mobile use variable, the

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

odds of being part of the bully-victim group compared to not being involved increase of 21% (1,206-1= 0,206).

Social Network Site use: the b value is positive, this means that the odds of being a bully-victim grow at the growth of SNS use. More specifically, for each unit increase of the SNS use variable, the odds of being part of the bully-victim group compared to not being involved increase of 34% (1,338-1= 0,338).

Instant Messaging use: the b value is positive, this means that the odds of being a bully-victim grow at the growth of SNS use. More specifically, for each unit increase of the IM use variable, the odds of being part of the bully-victim group compared to not being involved increase of 36% (1,360-1= 0,360).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

6   Conclusions

The recent diffusion of ICT among young people is raising a new set of problems concerning the management of peer relationships. More and more, the news reports incidents of cyberbullying turning into tragedies, but, apart from the more sensational cases, such phenomenon seems to be spreading at different levels in all countries.

The study of this phenomenon stems from the research on bullying, and seems to share some of the problems already faced in that field. One of the difficulties still needing to be overcome is to have a common definition, one that will allow researchers to compare the obtained results. But the lack of such a definition reflects the early stage of research in this field, which still has many unclear points. While on one hand cyberbullying has been studied as possible 'migration' online of bullying (Erdur-Baker 2009; Ybarra, Diener-West and Leaf 2007), the transaction doesn't go without impact. Cyberbullying is characterized by elements which are very distant from traditional bullying, such as its pervasiveness, the possibility of anonymity for the attacker, the not always clear voluntariness of aggression, or the diffusion it can have. Moreover, the criterion of repetition of the aggression of one person (always the same) over the other, and that of disparity of force can be very difficult to assess in cyberbullying (Vandebosh and Van Cleemput 2009). The adoption of different definitions in the research creates problems in comparing the obtained results, and in the assessments of cyberbullying diffusion among youth. What seems clear anyway is that the problem does exist, and it's spreading (Cross, Richardson, Douglas and Vonkaelen-Flatt 2009).

The awareness of the peculiarity of technology mediated communication, and the risks connected with conflict online or via mobile phones is not always widespread among its users, and youth are no exception (Botha and Ford 2008). However, as pointed out by Shariff and Johnny (2007), it's very important to remember that "it is not the technologies that are at fault in allowing the spread of offending students' expression. It is the messages that are contained in the expression that we ought to be concerned about. Those messages do not originate in cyberspace; they come from our physical and social world, and are embedded within our systemic political structures"[63].

The results of the first research conducted support the idea expressed by Botha and Ford, of a certain lack of awareness among ICT users of what cyberbullying really is, as the evaluation that the students gave of a vignette telling a story of cyberbullying were significantly less severe than those expressed of a fight scenario, while this difference disappeared after the specific training on conflict resolution they attended. Other relevant conclusions regard the diffusion of

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[63] The Censis report presented in June 2011 highlights a growth of aggressiveness in Italy in the last six years with heavy consequences on the life of the communities. The lack of impulse -control and respect of the rules goes from the languages habits (between 2004 and 2009 threats and insults have increased by 35.3%) to the physical aggressions with a rising number of episodes of bullying, hooligans' fights, within-family tragedies (between 2004 and 2009 injuries, and beatings have increased by 26,5%).

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

cyberbullying, with figures in line with the main European surveys, and the differences in sensitivity towards these kinds of themes.

The second research tried to expand the findings of the first one, focusing once again not only on the diffusion of cyberbullying but also on the perception that adolescents have of it, and trying to gain a better perspective on their representation not only of victims but as well of bullies, and as bullies. The submission of the same questionnaire to an international sample allows to also analysing the collected data from the point of view of cross national similarities or differences.

All the interviewed students, from both developed and developing countries, are an online population, with very high rates of daily mobile phone use and internet access. The major differences in ICT use are found between secondary school and university students, with the younger part of the sample having higher rates of IM and SNS use than the older ones, while the data do not differ significantly between countries. The higher level of IM and SNS use correlate as well with higher levels (or: a higher level) of reported cyberbullying, both for the victimization and the bullying episodes. Also the positive opinions on the role that ICT can play in interpersonal relationships correlate positively with both the use of IM and SNS and the level of involvement in cyberbullying.

Overall, 57% of the respondents report having been victim of at least two episodes of cyberbullying in the six months previous to the investigation, and 50% report having acted out at least two cyberbullying behaviours in the same time span.

Most of the secondary school respondents, in all countries, belong to the bully-victim group, a new and especially relevant category of involvement when discussing this problem. These respondents, who are at the same time victims and perpetrators of cyberbullying, are also those reporting lower levels of rejection and concern about cyberbullying when evaluating the gravity of the single behaviours or the proposed scenarios. With the respondents belonging to the bully only group they share a positive evaluation of their action as bullies, and the same tendency characterizes their evaluation of the episodes they have been victim of, while victim only respondents express more negative opinions about their feelings regarding the episodes they have been victims of. Bully-victim respondents are equally distributed between boys and girls, and have high frequency of SNS and IM use. They are the unconcerned, playful, unconscious bullies and victims produced by the lack of education on netiquette and web-safety that characterize their experiences with digital life.

The victim only group has a percentage of respondents going from 13% in Italy to 20% in Turkey. In this case the difference between secondary school and university is not so relevant, and although the figures are lower, something similar is verified for the bullies only group where the percentages go from 2,7% in Turkey to 10% in Italy and Brazil. The gap between secondary school and university grows again when confronting the uninvolved respondents, a group ranging from 22% to29% among secondary school respondents and 55% and 66% among the two populations of university respondents. What we observe then is a group of young and possibly "playful" bullies-victims, mostly attending high school, a group of uninvolved respondents, who are also those less involved in the use of ICT in their personal life, and two smaller groups of "pathological" bullies and victims, equally distributed among the school level, but with a slightly higher proportion of girls in the victim only group and boys in the bullies only one.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

The victim only and bully only groups also share other characteristics. In both cases the level of rejection is quite equally distributed between the three categories of low, medium and high rejection, although the tendencies have (an opposite direction or opposite directions) opposite direction: the proportion of bullies only decreases moving from low to high rejection, while that of victim only increases. The two groups differ significantly in the evaluation of their experience, with 53% of the victims and 16% of the bullies only giving a negative evaluation. Moreover, their level of use of SNS is similar, lower than the one of bully-victims and higher that the one of uninvolved respondents. The level of IM is differently distributed, with bullies only and bullies-victims reporting higher level of use, and victim only and uninvolved lower ones.

Prank calls represent the most widely diffused kind of joke, but the large gap between its report and the one of the other activities (this is strange) a different representation for the specific behaviour.

Among teens, with no major cross-cultural difference, the most common episodes denounced by the victims include the reception of unpleasant comments on a social network page and the diffusion of online gossip; when assessing their own bullying behaviours respondents indicate the publication of private messages and once again the unpleasant comments on social network pages as the most frequently diffused behaviours. Older respondents' score significantly lower on all the cyberbullying variables, and Turkey presents a different trend of answers, with a relatively high level of online ID theft denounced by the victims. University respondents report as well a higher proportion of unpleasant emails and text messages among the episodes they are victims of. These kinds of attack, somehow more personal, are also those that are most frequently associated with a negative perception of the experience in the victims, while the most relevant association from the bullies' point of view is (still ruling out the prank calls) the one between ID theft and the publication of private photos and a positive evaluation of the experiences. If the criterion of frequency of the episodes does not help in identifying the adolescents suffering the most from cyberbullying, these results seems to suggest that the impact of cyberbullying is related to the kind of episodes victims and bullies are involved in.

The evaluation of the scenario highlights that even if in most the cases the cyberbullies are perceived as intending to hurt their victims, the opinions regarding the awareness of the proportion of the damage they could produce are quite differentiated, as well as those concerning the appeal that anonymity explicitly held on the bullies or their perception of being stronger than their victims. The role that anonymity plays in enhancing cyberbullying may then be hypnotized to be more connected with the effects of the online disinhibitory effect and the difficulties connected to the communication with an invisible counterpart than the conscious desire to hurt someone while hiding behind a screen name.

Also the assessment of responsibilities for the narrated episodes underlines a tendency that is internationally shared among secondary school students. The evaluation changes according to the description of a victim differently described as deserving the cyberbullying she or he encounters. When the victim is seen as more likable and "innocent", the role of the bully is evaluated more severely, the victim is seen by almost all of the respondents as innocent and also the participants in the joke are valuated as less responsible. When the victim is described as less likeable, and more deserving of some sort of punishment, also the distribution of the

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

responsibilities shifts and more respondents indicate the bully and the technologies as responsible for the episode, while the victim and the participants in the joke are evaluated more severely.

The present research has some limitations, connected first of all with the use of the convenience sample, so that the obtained results are not intended as directly generalizable, but merely suggest hypotheses that could direct further research. Secondly, , the evaluation of cyberbullying via self-reported assessments encounters all the risks of under or over estimation of the phenomena connected as well with social desirability and the difficulty of admitting behaviours against the law.

At the same time, the research achieved some very important results:

- Data from different countries have been collected with the same questionnaire and compared, obtaining cross-culturally valid information on cyberbullying.
- Not many data are yet available on cyberbullying in the participating countries, and this research represents a starting point for the evaluation of the situation, especially in Brazil, Colombia and India. What the results surely indicate is that cyberbullying is not a problem taking place only in developed countries, but in all the countries taken into account
- This observation supports the hypothesis that cyberbullying may be a phenomenon more connected with the interaction of ICT mediated communication and adolescent's conflict management than with country specificities. The virtual environment, from this point of view, is bound to generate cyberbullying.
- The similarities in the distribution of the respondents in the four groups of involvement (uninvolved, victim only, bully only, victim only, bully-victim) across countries confirm the relevance of this categorization. The differences in cyberbullying evaluation among the categories suggest the necessity for differentiated preventive and restoring intervention.
- More specifically, the large number of students belonging to the bully-victim category seems to represent a population of unaware cyberbullies, acting not as much out of real desire to hurt their victim but in a jolly spirit. The need for specific training on the risks of the Internet and the principles of netiquette is especially relevant for these subjects, to help them avoid the problems that may result from a joke gone too far, or from an irresponsible online behaviour.
- Being involved in cyberbullying only as a victim or as a bully may require a different kind of support, more oriented to the role that ICT plays in the relational life both of the victims and the bullies. In these cases the intervention should include more than general safety and good behaviour, and in some more extreme case the intervention of the law may be required.
- Some differences are found between the traditional definition of bullying and the representation of cyberbullying expressed by the respondents. The issues connected with the intentionality of the damage inflicted, the repetition in time of the attacks and the asymmetry of power remain open. All of these aspects cannot be easily evaluated when the bullying happens online or via telephone.

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

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A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

Appendix 1 The questionnaire

INSTRUCTIONS

We kindly ask you to take part in our research on Youth and New Technologies. This questionnaire is part of an international research that, with your contribution, studies the diffusion of Internet and Mobile phones among the youth of different countries, and their role in conflict situations.

Your answers will, of course, be anonymous but it is important to us that they are honest and accurate. If you think the task is too long or boring, or if, for any other reason, you think you are unable to complete it carefully, please just stop. You can simply return the questionnaire to those who gave it to you. For our research we need the answers to be very sincere.

We would like you to complete the entire questionnaire. If you can do this we will be very grateful. Thank you very much for your contribution if you decide to offer your assistance.
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Dipartimento di Scienze Umane per la Formazione; Università degli Studi di Milano-Bicocca, Italy

Università di Milano-Bicocca – Progetto QUA_SI, Dottorato in Società dell'Informazione
A. A. 2010/11
Tesi di Dottorato di Giulia Mura: "Cyberbullying behind frontiers"

1) Imagine you bought a lottery ticket and you won a cash prize, which prize would you prefer of the 2 suggested options? (Tick only one option in each case)

Case A:
☐   Euro 55 straight away
☐   Euro 57 in 117 days (in about 4 months)

Case B:
☐   Euro 48 straight away
☐   Euro 52 in 160 days (in about 5 and a half months)

Case C:
☐   Euro 55 straight away
☐   Euro 62 in 111 days (in about 4 months)

Case D:
☐   Euro 46 straight away
☐   Euro 62 in 89 days (in about 3 months)

Case E:
☐   Euro 41 straight away
☐   Euro 57 in 62 days (in about 2 months)

Case F:
☐   Euro 35 straight away
☐   Euro 52 in 30 days (in about 1 month)

Case G:
☐   Euro 28 straight away
☐   Euro 52 in 21 days

Case H:
☐   Euro 26 straight away
☐   Euro 62 in 14 days

The following stories involve boys and girls of more or less your own age. After reading them, we want to know what you would think if you had witnessed such situations

Story n°1

Lindsay has just moved to town from another city and enrols in the local high school. She is very pretty, outgoing and fun and she quickly attracts the attention of a number of the school's cutest boys—much to the chagrin of the other girls in the school. Lindsay becomes Johnny's friend on a SOCIAL NETWORK website and they start chatting and exchanging comments. Bonnie, Johnny's girlfriend, is worried that Lindsay is stealing her boyfriend. With the help of her friends, Bonnie decides to create a "We Hate Lindsay" website, where girls can post the reasons why they hate Lindsay and why they think she should move back to her previous city. Soon the entire school gets to know the site's web address, and many others begin posting hurtful comments about Lindsay. Desperately wanting to make friends in a new town, Lindsay is crushed and begins to suffer from depression and a lack of desire to do anything aside from crying in her bed.

2) What do you think of this situation?
For each of the following statements, put a cross for the word that best expresses your level of agreement or disagreement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I think it's very funny	□	□	□	□	□
I think it's just a joke, nothing too serious	□	□	□	□	□
I think it's a very bad situation	□	□	□	□	□
I don't have an opinion on this matter	□	□	□	□	□

3) Now, try to imagine being in Bonnie's shoes. In your opinion, when Bonnie opened the web page:

	Surely not	Probably not	I don't know	Probably yes	Surely yes
She meant to hurt Lindsay	□	□	□	□	□
She realized how many people would see the website and how long it would be available	□	□	□	□	□
She hoped to remain anonymous	□	□	□	□	□
She felt stronger than Lindsay	□	□	□	□	□

4) How much do you agree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
What happened is Bonnie's fault	□	□	□	□	□
What happened is Lindsay's fault	□	□	□	□	□
What happened is the fault of all those who continued the joke	□	□	□	□	□
The internet makes it very easy to hurt people	□	□	□	□	□

Story n°2

Jason and Alex are classmates. Alex is a tall, skinny boy who dedicates himself to homework and study most of his free time, and seems quite un interested in making friends with his schoolmates. Jason is an average student, often not well prepared for his lessons, but who always likes to have fun and joke with his classmates. One day during a written test, Jason asks for help, to Alex, but Alex refuses to tell him the right answers.

Jason fail the test, and report the incident to other classmates, and everybody agree in finding Alex behaviour "not fair".

The following day when he arrives at school, Alex notices a few guys looking at him and whispering. All day long he is aware of some kind of attention towards him and walking down the corridor clearly hears someone saying "here comes the faggot". Later on Alex asks a guy in his class about it and, a little embarrassed, his school mate shows him a text received the previous afternoon that accuses Alex of being "a brown-nose queen" complete with his mobile number. Pretty soon Alex starts receiving very unpleasant text messages and silent calls, as well as sneers and jokes from his class mates and schoolmates. Going to school becomes a real nightmare for him!

5) What do you think of this situation?
For each of the following statements, put a cross for the word that best expresses your level of agreement or disagreement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I think it's very funny	□	□	□	□	□
I think it's just a joke, nothing too serious	□	□	□	□	□
I think it's a very bad situation	□	□	□	□	□
I don't have an opinion on this matter	□	□	□	□	□

6) Now, try to imagine being the person who first sent the message. In your opinion, this person:

	Definitely not	Probably not	I don't know	Probably yes	Definitely yes
Meant to hurt Alex	□	□	□	□	□
Realized how far the thing would go (in time and amount of people involved)	□	□	□	□	□
Hoped to remain anonymous	□	□	□	□	□
Felt stronger than Alex	□	□	□	□	□

7) How much do you agree with each one of the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
What happened is Alex's fault	□	□	□	□	□
What happened is the fault of the person who sent the message in the first place	□	□	□	□	□
What happened is the fault of all those who carried on with the joke	□	□	□	□	□
Mobile phones makes it very easy to hurt people	□	□	□	□	□

The following questions investigate your relationship with technology and more specifically with the computer, the internet and the mobile phone.

8) How often do you use:

	Never	Once a month	Once a week	A few times a week	Once a day	More than once a day
A mobile phone	□	□	□	□	□	□
The internet	□	□	□	□	□	□

9) What do you do on the internet?
Put a cross for the word expressing the frequency with which you engage in each of the following activities

	Always	Often	Sometimes	Rarely	Never
Surf the net	□	□	□	□	□
Instant Messaging, like MSN/Skype/AOL/Yahoo	□	□	□	□	□
Chat in a forum	□	□	□	□	□
Facebook, MySpace and other social networks	□	□	□	□	□
Send and receive emails	□	□	□	□	□
Do my homework	□	□	□	□	□
Play	□	□	□	□	□
Download/streaming music or movies	□	□	□	□	□

10) Express your level of agreement/disagreement on each of the following opinions:

	Strongly disagree	*Partially disagree*	*Neither agree nor disagree*	*Partially agree*	*Strongly agree*
With a text sms I can say to other boys/girls what I really think.	□	□	□	□	□
On the internet it's easier to misunderstand each other.	□	□	□	□	□
Internet and mobile phones are very useful to make up after falling out with friends	□	□	□	□	□
My relationship with my friends has improved since I had a mobile phone	□	□	□	□	□
On the internet I can say nice things to people I wouldn't say face to face	□	□	□	□	□
On the internet I can say mean things to people I wouldn't say face to face	□	□	□	□	□
In my class we would get along better without mobile phones.	□	□	□	□	□

11) During the last <u>six months</u> how often have the instances described below <u>happened to you</u> and you <u>have done them to others</u>?
Tell us if and how often this has happened to you by marking the appropriate boxes in the "It happened to me" column. Tell us if and how often you have done this to others by marking the appropriate boxes in the "I did it" column.

	It happened to me			I did it		
	Never	Once or twice	3 or more times	Never	Once or twice	3 or more times
A mean, aggressive or threatening e-mail or text message	□	□	□	□	□	□
Unpleasant comments left on Facebook, Myspace or other social networks	□	□	□	□	□	□
Exclusion from online forum	□	□	□	□	□	□
Diffusion online of malicious gossip	□	□	□	□	□	□
Online publication of an embarrassing photo/video without permission	□	□	□	□	□	□
Publication or sharing with friends of private messages (email, text message)	□	□	□	□	□	□
Prank calls or silent phone calls	□	□	□	□	□	□
Stealing of online identity, used to leave nasty comments or modification of personal pages	□	□	□	□	□	□

12) If you have selected one or more of the things listed in the "It happened to me" column, how do you evaluate the experience?

Extremely upsetting	Quite upsetting	Irrelevant	Quite funny	Extremely Funny
☐	☐	☐	☐	☐

13) If you have selected one or more of the things listed in the "I did it" column, how do you evaluate the experience?

Extremely upsetting	Quite upsetting	Irrelevant	Quite funny	Extremely Funny
☐	☐	☐	☐	☐

14) How acceptable do you think the behaviour listed above is?

	Always ok	Mostly ok	Sometimes ok	Rarely ok	Never ok
A mean, aggressive or threatening e-mail or text message	☐	☐	☐	☐	☐
Unpleasant comments left on your profile on Facebook, Myspace or other social networks	☐	☐	☐	☐	☐
Exclusion from online forums	☐	☐	☐	☐	☐
Diffusion online of malicious gossip	☐	☐	☐	☐	☐
Online publication of an embarrassing photo/video without permission	☐	☐	☐	☐	☐
Publication or sharing with friends of private messages (email, text message)	☐	☐	☐	☐	☐
Prank calls or silent phone calls	☐	☐	☐	☐	☐
Stealing of online identity, used it to leave nasty comments or modification of personal pages	☐	☐	☐	☐	☐

15) Sex: ☐ **M** ☐ **F**

16) What is your age?_____

17) What is your parent's level of education?

	Primary school	Secondary school	University
Dad			
Mum			

18) What is your parents job?

	Manager Entrepreneur	Employee	Freelance Creative Worker	Retired Unemployed Housewife	Factory worker	I don't know
Dad						
Mum						