

What Aspects of Cyber Cruelty are judged most distressing? An Adaptive Conjoint Study with Two Independent Samples

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Abstract

Cyberbullying is defined as bullying via electronic means including the defining characteristics of repetition over time, intent to harm, and power imbalance. However, this normative top-down definition is discussed controversially. We argue that the term “cyberbullying” and the associated defining criteria might constrict our focus artificially. Therefore, we investigate bottom-up which aspects of cyber cruelty contribute to victims’ distress in an adaptive conjoint design with two independent samples (sample 1: $n = 131$; sample 2: $n = 82$). Six potentially relevant factors were investigated, each with multiple attributes: number of incidents, perpetrator status, perpetrator motive, and type, medium, and publicity of cyber incident. Contrary to the definition of cyberbullying, number of incidents, publicity, and type of cyber cruelty emerged as most important factors. These results allow us to further map the cognitive representation of cyber cruelty and are practically relevant for the definition and measurement of cyberbullying.

Keywords: cyberbullying; electronic communication; emotional distress; cognitive representation; conjoint analysis.

Theoretical Background

Cyberbullying – namely bullying via electronic means – is a prevalent problem among today’s youth with mostly negative consequences (Tokunaga, 2010). In order to adequately research this phenomenon and to ultimately design effective prevention and intervention measures, a precise conceptualization of this construct is paramount (Ybarra, Boyd, Korchmaros, & Oppenheim, 2012).

However, one area of controversy is the literal connotations of the composite term “bullying”. Today most scientists agree that bullying denotes an “aggressive, intentional act or behavior that is carried out by a group or an individual repeatedly and over time against a victim who cannot easily defend him or herself” (Olweus, 1993; cited in Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippet, 2008, p. 376). Thus, repetition, power imbalance, and intent to harm are considered the key defining characteristics of bullying. But research shows that the understanding of “bullying” differs between historical eras, cultures or age groups (Smith & Monks, 2008). For example, in cultural comparisons, one of the biggest challenges is finding translations of “bullying” with equivalent meaning. Most often, terms vary in breadth and cognitive connotations; “the social construction of meaning and its cultural and temporal variability become apparent” (ibid., p. 110).

With the advent of electronic communication and the first reported cases of online cruelty, the term “cyberbullying” was coined to refer to this new phenomenon. The definition of conventional bullying was transferred to cyberspace, and cyberbullying was defined as “an aggressive, intentional act carried out by a group or individual, *using electronic forms of contact*, repeatedly and over time against a victim who cannot easily defend him or herself” (Smith et al., 2008, p. 376). However, this theory-based top-down definition of cyberbullying has been discussed controversially ever since (e.g., Dooley, Pyzalski, & Cross, 2009; Grigg, 2010; Menesini & Nocentini, 2009; Pieschl et al., in press).

Recent empirical investigations about the connotations and cognitive representations of the term “cyberbullying” offer the possibility to shed further light onto this issue from a data-driven, bottom-up perspective. Results from a multidimensional scaling analysis with 2,257 adolescents from six European countries (Menesini et al., 2012) show that the most important dimension of cyberbullying is characterized by the imbalance of power and the second most important dimension is characterized by intentionality. When adolescents classify a scenario as cyberbullying, they seem to mainly consider the presence of these criteria. Focus-group interviews of 70 Italian, Spanish and German adolescents (Nocentini, Calmaestra, Schultze-Krumbholz, Scheithauer, Ortega, & Menesini, 2010) on the other hand show that in some cases, subjects consider the publicity of an incident as a substitute of the criterion of repetition. Further, they consider victims’ perceived level of distress more important than an existing imbalance of power and view victims’ interpretation of an incident more critical than an existing intent to harm. These results seem to imply that the cyber-victims’ experience is more important than the adherence to normative criteria. Adolescents from another focus group study go even one step further; they consider the term cyberbullying “vague, inadequate and restricted” (Grigg, 2010, p. 151) because of the broad and varied set of negative incidents that can happen on the internet but that are not covered by this term.

We argue that these investigations about subjects’ interpretation of the term “cyberbullying” can only show one side of the coin: Subjects evaluate the normative criteria of cyberbullying. But generations of students have been taught the definition of “bullying” in school. Therefore, it is not surprising that they consider incidents as “cyberbullying” that are consistent with this learned

definition. Thus, the term “cyberbullying” might artificially constrict researchers’ and practitioners’ focus. Many hurtful online experiences do not fall into this narrow definition.

Therefore, we advocate a complementary route of investigation to also shed light onto the other side of the coin: We explore which aspects of cyber incidents are evaluated as most distressing and use these as cognitive criteria underlying a more inclusive definition of cyber cruelty. This approach is consistent with adolescents’ views (Grigg, 2010; Nocentini et al., 2010). It is also consistent with the diagnosis of psychological disorders; only those disorders are considered that cause clinically significant distress or impairment in specific areas of functioning (American Psychiatric Association, 2000).

We assume that not only defining criteria of “cyberbullying” are relevant to the experience of distress but also cyber-specific factors (for an overview see Table 1). More specifically, the criterion of repetition can be captured in a straightforward way by investigating the impact of different *number of incidents*. Power imbalance, on the other hand, can have many facets, such as age, competence or intelligence; in this study we consider the social status of the perpetrator in terms of perceived popularity (Pieschl et al., in press) as well as anonymity (Dooley et al., 2009; Menesini et al., 2012) (*perpetrator status*). Besides intent to harm and the related motives of feeling superior and wish for appreciation (Olweus, 1996), we also consider that perpetrators might not be aware of the consequences of their behavior and instigate seemingly cruel incidents for fun (Twyman, Saylor, Taylor, & Comeaux, 2010) or that they might seek retaliation (Vandebosch & Van Cleemput, 2008) (*perpetrator motive*). For these criteria of (cyber-)bullying, we predict that those incidents including repetition, power imbalance and intent to harm will be more distressing than other incidents.

As first cyber-specific factor, we consider selected *types of cyberbullying* and cyber cruelty (Pieschl et al., in press; Willard, 2007): harassment (insults or threats), denigration (spreading rumors), outing (revelation of secrets), impersonation (passing off as someone else) and exclusion (from online groups and activities). The second cyber-specific factor is the *medium*. Because recently, hardware and software applications merge, we will consider the representational code as most relevant dimension; we predict that pictorial incidents will be more distressing than written / verbal ones (Pieschl et al., in press; Smith et al., 2008). Our third cyber-specific factor is the *publicity* of the incident; we predict that public incidents are more distressing than semi-public and private ones (Nocentini et al., 2010).

In the context of cyberbullying, distress has mainly been investigated on an emotional level, for example as feeling upset or stressed (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009). But it also incorporates cognitive facets such as helpless cognitions, for example thoughts like “My situation is hopeless” (Pieschl et al., in press). Furthermore, previous research shows that

participants with a history of victimization consistently report higher levels of distress when confronted with bullying and cyberbullying scenarios (Bauman & Newman, 2013). Thus, we also predict that previous cyber experience is relevant for the level of cognitive-emotional distress.

Hypotheses

In this study we investigate two main hypotheses in an adaptive conjoint design: (1) Not all factors are equally important for the experience of distress as a result of cyber cruelty; the utility values of these factors differ significantly. More specifically, we predict that not all defining characteristics of (cyber-)bullying (number of incidents, perpetrator status, and perpetrator motive) are judged more important than cyber-specific factors (type, medium, and publicity of cyber incident). (2) The part-worth utility values of the attributes of each factor differ significantly (all attributes are given in Table 1). We predict more distress associated with more frequent cyber incidents (number of incidents), with popular perpetrators (perpetrator status indicating power imbalance) who have an intent to harm (perpetrator motive), and pictorial (medium) and public (publicity) cyber incidents. For type of cyber incident, this is an explorative research question. Furthermore, we explore two research questions about between-subject differences: (3) The results regarding (1) and (2) differ significantly according to previous cyber-experience; previous cyber-victims report the highest level of distress, significantly more than previous cyber-perpetrators. (4) The results regarding (1) and (2) can be validated in two independent samples; in both samples we predict similar results.

Method

Samples

Sample 1 consists of 133 high school students. Data from 2 students had to be excluded because of missing data, thus the final sample size is $n = 131$. These 43 boys (32.8 %) and 88 girls (67.2 %) are on average 17.47 ($SD = 1.01$) years old and spend on average 2.43 hours ($SD = 1.50$) on weekdays and 3.66 hours ($SD = 2.72$) on weekend days on the internet. Sample 2 consists of 91 young adults. Data from 9 young adults had to be excluded because of missing data, thus the final sample size is $n = 82$. These 18 young men (22.0 %) and 64 young women (78.0 %) are on average 20.29 ($SD = 1.14$) years old and spend on average 2.90 hours ($SD = 1.75$) on weekdays and 3.85 hours ($SD = 2.69$) on weekend days on the internet.

Material

Adaptive Conjoint Analysis: Distress Measure An adaptive conjoint analysis (ACA; Gustafsson, Herrmann, & Huber, 2007) was presented by the online survey system Unipark (© Questback). In this part of the study, participants had to imagine that they were cyberbullied and they had to rate their level of distress associated with multiple fictitious incidents that were described by

combinations of attributes. The relevant factors and attributes can be seen in Table 1. Because of the high number of factors and attributes in this study, we used a fractional factorial design. Yet the maximum gain of information was reached by using the adaptive conjoint design. The system automatically arranges the scenarios based on subjects' previous judgments by choosing those attributes whose comparison provides the maximum of new information.

Table 1: Factors (defining characteristics and cyber-specific) and corresponding attributes investigated in the adaptive conjoint analysis.

Defining Characteristics	Attributes
<i>number of incidents</i>	once
	2-3 times per month
	weekly
	multiple times per week
<i>perpetrator status</i>	anonymous
	popular
	unpopular
<i>perpetrator motive</i>	intent to harm
	feeling superior
	appreciation by others
	retaliation
<i>Cyber-Specific Factors</i>	fun
<i>medium</i>	written / verbal
	pictorial
<i>publicity</i>	private
	semi-public
	public
<i>type of cyber incident</i>	harassment
	denigration
	outing
	impersonation
	exclusion

In the preference for levels phase of the ACA, participants rated the level of distress associated with each attribute on a 6-point scale (1 = not upsetting – 6 = very upsetting). In the attribute importance phase, the most and least distressing attributes of each factor were contrasted and participants had to judge on a 4-point scale if these were “equally upsetting” or “one is more upsetting than the other”. In the phase of paired-comparison trade-off questions, we presented two fictitious cyber incidents, each consisting of 2 or 3 attributes of different factors. On a 5-point scale with one situation located at each end, subjects had to decide which situation was more distressing. In the final calibrating concepts phase, participants had to rate the level of distress associated with cyber incidents consisting of a combination of 4 attributes of different factors on a scale from 0 (not at all distressing) to 100 (very distressing).

Based on participants' judgments, Unipark (© Questback) automatically computes part-worth utilities for each

attribute and utility values for each factor. High values indicate that a specific factor (or attribute) is relatively important for participants' judged distress while low values indicate relative unimportance.

Cyber Experiences Questionnaire We adapted the cyberbullying questionnaire of Riebel, Jäger and Fisher (2009) to include the following five of Willard's (2007) categories: harassment, denigration, impersonation, outing, and exclusion. Students were asked how often these incidents happened to them via cell phone or the internet (cyber-victim) and how often they instigated such incidents themselves (cyber-perpetrator) in the last two months. All answers were given on 5-point scales with the categories “never”, “once”, “2-3 times per month”, “weekly”, and “multiple times per week”. Cyber involvement was diagnosed if students gave at least once a different answer than “never” (cyber-victim and cyber-perpetrator). Participants who reported both cyber-victim and cyber-perpetrator experiences were classified as cyber-perpetrator-victims. Note that we do not refer to these experiences as cyberbullying because some of the conventional criteria for bullying are not fulfilled, for example repetition over time.

Procedure

Sample 1 was recruited at the Open Day of the Westfälische Wilhelms-Universität Münster, Germany. High school students visiting the Department of Psychology volunteered and their data was collected in group sessions in a computer lab. Sample 2 was recruited from a database of adult volunteers maintained by the same department of psychology; participants were sent the link to the online survey and answered at will. All participants answered the same electronic survey presented by Unipark (© Questback). It consists of demographic questions, the adaptive conjoint analysis, the cyber experience questionnaire and further questions¹.

Results

Descriptive Results

Sample 1 and sample 2 differ significantly in age ($t(211) = -18.92, p < .001$) and average internet use on weekdays ($t(211) = -2.11, p = .036$). On average, sample 2 participants are older and spend more time on the internet on weekdays. Sample 1 and sample 2 also differ significantly in their cyber experience ($X^2(3) = 13.82, p = .003$). In sample 1, only 37.4 % of students were not involved in cyber incidents in the last two months, 22.9% were classified as cyber-victims, 15.3% as cyber-perpetrators, and 24.5% as cyber-perpetrator-victims. In

¹ More specifically, participants answered additional questions about their internet use and their experience with sexual harassment on the internet. These questions were part of a larger project; the results will not be reported since they are irrelevant for our hypotheses.

sample 2, a total of 61.0% young adults were not involved in cyber incidents in the last two months, 18.3% were classified as cyber-victims, 12.2% as cyber-perpetrators, and 8.5% as cyber-perpetrator-victims. Therefore, the variables “sample” and “cyber-experience” will be included as between-subject factors in all subsequent analyses.

Hypothesis 1: Factor Differences

To investigate hypothesis 1, we computed a repeated-measure ANOVA with the utility values of the six factors as repeated-measure dependent variable and cyber-experience and samples as between-subject factors. The results show a significant main effect of the repeated-measure factor ($F [4.5, 921.7] = 19.67, p < .001$), but no significant differences between groups with different cyber-experiences ($F [3, 205] = 1.73, p > .05$) or between samples ($F [1, 205] = 3.45, p > .05$; see Figure 1), and no significant interactions between these factors ($F [13.5, 921.7] = 0.5, p > .05$).

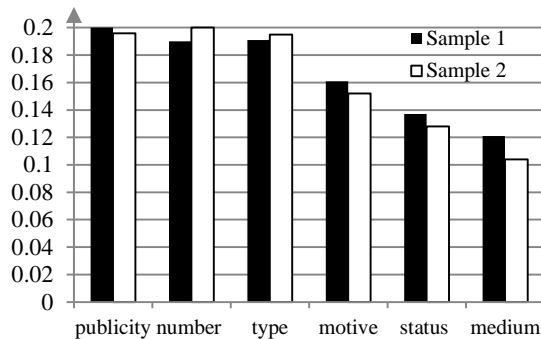


Figure 1: Utility values of the six factors extracted from the conjoint analysis; these values indicate distress.

As can be seen in Figure 1, *publicity*, *number*, and *type* of cyber incidents were assigned the highest utility values and these did not differ significantly from one another (*publicity* vs. *number*: $F [1, 205] = 0.75, p > .05$; *number* vs. *type*: $F [1, 205] = 0.96, p > .05$). Perpetrator *motive* was judged significantly less important (*type* vs. *motive*: $F [1, 205] = 12.42, p = .001$), followed by perpetrator *status* (*motive* vs. *status*: $F [1, 205] = 8.72, p = .004$). *Medium* of incident was judged least important but did not differ significantly from perpetrator *status* ($F [1, 205] = 3.00, p > .05$).

Hypothesis 2: Attribute Differences

To investigate hypothesis 2, we computed repeated-measure ANOVAs for the attributes of each factor separately. In each ANOVA the part-worth utility values of all attributes of one factor constitute the repeated-measure dependent variable, while cyber-experience and samples constitute the between-subject factors. We report only significant effects ordered by factor.

In all ANOVAs we found main effects of the repeated-measure variable: More frequent incidents were judged more distressing (*number*: $F [2.1, 432.4] = 183.11, p < .001$), popular perpetrators were judged more distressing than anonymous ones, followed by unpopular ones (*status*: $F [1.9, 389.7] = 50.79, p < .001$), the intent to harm was judged more distressing than fun, followed by retaliation, appreciation by others, and feeling superior (*motive*: $F [3.6, 731.7] = 35.64, p < .001$). Furthermore, pictorial incidents were judged more distressing than written / verbal ones (*medium*: $F [1, 205] = 123.00, p < .001$), more public incidents were judged most distressing, followed by semi-public ones and private ones (*publicity*: $F [1.5, 306.7] = 203.20, p < .001$), and outing was judged most distressing, followed by harassment, denigration, exclusion, and impersonation (*type*: $F [3.8, 774.6] = 7.51, p < .001$). To give one more specific example (*number*; see Figure 2): incidents “multiple times per week” were judged significantly more distressing than “weekly” incidents ($F [1, 205] = 11.90, p < .001$) which were in turn judged significantly more distressing than incidents “2-3 times per month” ($F [1, 205] = 72.36, p < .001$) and those were judged significantly more distressing than a single incident (“once”: $F [1, 205] = 157.84, p < .001$).

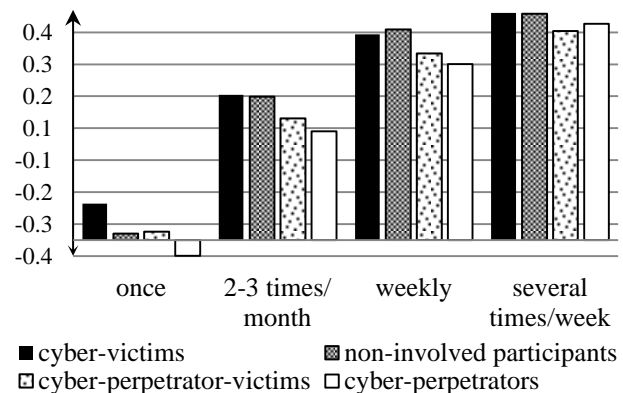


Figure 2: Part worth utilities of the attributes for the factor *number* extracted from the conjoint analysis; these values indicate distress.

In all ANOVAs we also found main effects of the between-subject factor cyber-experience. More specifically for *number* of incidents ($F [3, 205] = 3.21, p = .024$), perpetrator *status* ($F [3, 205] = 3.21, p = .024$), perpetrator *motive* ($F [3, 205] = 3.21, p = .024$), and for *medium* ($F [3, 205] = 3.21, p = .024$), *publicity* ($F [3, 205] = 3.21, p = .024$), and *type* of cyber incident ($F [3, 205] = 3.21, p = .024$). In all cases cyber-victims judged most attributes significantly more distressing than cyber-perpetrators. Additionally, we found significant interactions between the repeated-measure factor and cyber-experience for perpetrator *motive* ($F [10.7, 731.7] = 1.87, p = .041$) and *publicity* ($F [4.48, 306.7] = 2.7, p = .025$). To give one more specific example (*number*; see Figure 2): across all

frequencies of cyber incidents, cyber-victims judged level of distress was significantly higher than that of cyber-perpetrators ($MD = .11, p = .012$). Furthermore, the judged level of distress of non-involved participants did not differ significantly from that of cyber-victims ($MD = .03, p > .05$) and the judged level of distress of cyber-perpetrator-victims did not differ significantly from that of cyber-perpetrators ($MD = .01, p > .05$).

We found no significant main effects of the two samples in any of the ANOVAs.

Discussion of Results

Our first hypothesis was confirmed: These results show that there are aspects of cyber cruelty that are perceived as significantly more distressing than others. As predicted, not all defining characteristics of cyberbullying were judged more important than cyber-specific factors. More specifically, while *number* of incidents was considered among the most important factors, *status* and *motive* of the perpetrator – indicative of power imbalance and intent to harm respectively – are considered significantly less important. On the other hand, the cyber-specific factors *type* of cyber incident and *publicity* are among the most important factors. *Medium* of cyber incident emerged as the least important factor.

Our second hypothesis was also confirmed: These results indicate that, for each factor, some of the associated attributes are perceived significantly more distressing than others. As predicted, more distress was associated with more frequent incidents (*number*), with popular bullies rather than with unpopular bullies (*status*), with intent to harm (*motive*), with pictorial rather than with written incidents (*medium*), and with more *publicity*. Furthermore, results regarding the perpetrator *status* indicate that anonymous perpetrators are perceived more distressing than unpopular ones but less distressing than popular ones. Additional results regarding perpetrator *motives* indicate that all other motives but intent to harm were judged significantly less distressing, more specifically retaliation, fun, appreciation by others and feeling superior. Finally, our explorative research question regarding *types* of cyber incidents indicates that outing was considered most distressing, followed (in order of descending importance) by harassment, denigration, exclusion, and impersonation. Consequently, the most distressing case of cyber cruelty would be the following one: *several public incidents of outing per week, by a popular bully in form of pictures or videos, where the perpetrator wants to harm the victim*.

Our third and fourth hypotheses were also (mostly) confirmed: We found no significant effects of the between-subject factor cyber-experience regarding hypothesis one, but in all analyses regarding hypothesis two the results confirm our predictions (hypothesis 3): For all investigated factors, cyber-victims (and often non-involved participants) reported significantly more distress across all attributes than cyber-perpetrators (and often cyber-perpetrator-victims)

(main effects); further interactions indicate that these differences disappear for very distressing attributes.

Furthermore, the pattern of results in sample 1 and sample 2 did not differ significantly in any of our analyses, pointing to the validity of our findings (hypothesis 4).

On a theoretical level, these findings underline, on the one hand, that defining characteristics of conventional bullying are indeed relevant to the experience of cyberbullying. Repeated incidents with intent to harm and power imbalance are perceived more distressing than other incidents. On the other hand, these results also show that cyber-specific factors are just as or even more important for victims' experience of cyber cruelty. Especially the type of incident and its publicity seem to be important. Therefore, the experience of cyber cruelty seems not (only) to be determined by the (artificial) boundaries of a normative, theory-driven, top-down definition of cyberbullying. Rather, subjects' cognitive representation of such incidents (data-driven bottom-up approach) shows that all proximal factors that concern the content of the incident and thus also the cyber-victim directly – namely number of incidents, type of incident, and the incident's publicity – are judged more important for the experience of distress than more distal factors regarding the perpetrator or medium – namely status and motive of the perpetrator or medium.

Limitations and Implications

The advantage of using the innovative approach of adaptive conjoint analysis to assess implicit judgments unfortunately goes hand in hand with a possible loss in external validity. Since the attributes needed to be suitable for every potential combination of attributes, they had to be expressed on a rather abstract level. Therefore, imagining concrete cyber incidents might have been complicated and the imagined situations might have been quite idiosyncratic. Additionally, we do not know if the results can be generalized since the experience of cyber cruelty presumably also depends on further personal and contextual factors, for example on previous cyber-experience as shown in this study. But we do not know if the effects of cyber-experience are due to the fact that previous cyber-victims are better able to take the victim perspective or if they point to a cumulative vulnerability as a result of cyber-victimization. Further research is needed. However, the fact that we could replicate our results with two independent samples points to the validity of our findings.

Despite these limitations these results have further theoretical and practical implications that are not only highly relevant for psychology, but might also have implications for other cognitive science disciplines such as linguistics or philosophy. For example, the question of how technical terms such as “cyberbullying” are conceptualized and might constrain human cognition clearly lies at the intersection of psychology and linguistics. On a more concrete theoretical level these results contribute to the controversial discussion within psychology about the definition of cyberbullying: We suggest that cyber-victims'

level of distress should be taken into account for the definition and diagnosis of cyberbullying. Such definitions and diagnosis criteria should not only be based on normative, theory-driven, top-down considerations but also on subjects' cognitive representations of cyber cruelty (data-driven bottom-up approach). We would like to propose the affected subjects' level of distress as potential defining criterion. However, because of the widely accepted criteria of "bullying", another more inclusive term for all kinds of cyber cruelty might be more useful. Further research regarding this issue is needed. However, we can still draw some practical conclusions: For example, the distress associated with outing indicates that adolescents need to be advised of the dangers of sharing private information online. Additionally, the distress associated with publicity indicates that education about data protection and privacy settings could also contribute to the prevention of cyber cruelty.

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