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## Self-exploration, anonymity and risks in the online setting: analysis of narratives by 14–18-year olds

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This article explores youth narratives of Internet risks and opportunities brought about by user anonymity. Using an essay-based study of 258 youth (mean age 15.4 years, 56% female), we examined youth narratives concerning the effects of Internet anonymity on youth behavior online. Narratives were written anonymously to maximize disclosure. The needs categories of self-determination theory (SDT) for autonomy, relatedness, and competence were used to identify risks and opportunities in youth narratives. The analysis of the data was thematic, using both quantitative and qualitative methods with SDT providing an effective descriptive framework. Quantitative thematic analysis showed that 17% of the narratives included a notion of competence, 32% autonomy and 30% relatedness. Risks were also prevalent in the narratives, with primary themes of 74% cyberbullying and insults, 27% identity theft and risky false identity, and 18% sexual harassment or exploitation. The qualitative analysis underlines the interaction of both risks and opportunities in the use of social media online by youth. These findings illuminate both the importance of Internet opportunities as a social tool for youth need fulfillment toward self-determination and the social risks that youth Internet use involves.

**Keywords:** identity; youth culture; Internet; anonymity

### Introduction

The growing social space provided by the Internet in the form of online gaming, communities, or networking has taken a substantial place in the lives of youth, especially in nations where global technological innovation is peaking and where future usage trends are set (Boyd 2008; Livingstone and Haddon 2009; Drotner and Schröder 2010). The Internet provides its users with an enhanced opportunity for new skill development, identity experimentation and exploration, and the discovery of leisure activities (Wellman and Haythornthwaite 2002; Valkenburg, Schouten, and Jochen 2005; Broellstroff 2008). Despite these remarkable possibilities provided by the Internet, potential risks are also prevalent online. Studies have linked the use of the Internet to risks including cyberbullying and sexual victimization (Sourander et al. 2010; Wolak et al. 2010; Livingstone et al. 2011; Ortega et al. 2012).

The new capacity toward the creation of new social networks along with access to previously unknowable information and individuals has made youth of today more self-networking than ever before (Boyd 2008; Lehdonvirta & Räsänen 2011; Näsi, Räsänen,

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and Lehdonvirta 2011). Tied to these increased opportunities online toward this social interaction by youth is some level of inherent user anonymity. In the anonymous state, staples of face to face communication including the physical feedback loops (Carver and Scheier 1981; Burke 1991) that have a role in behavioral assessment through observed physical reaction along with reputation effects (Raub and Weesie 1990) of building identifiability from past behavior are significantly diminished or at times even absent. Notably, there exists a strong positive correlation between opportunities and risks for youth in the online setting; the increasing opportunities provided by the Internet also increase the risks (Livingstone 2009; Livingstone and Helsper 2010). Just as the forms these opportunities can take are varied, so too are the forms of risk existing online. Notably, the relationship between safety and risk on the Internet is multifaceted; young people learn to deal with online risks as exposure to them encourages a digital literacy toward more appropriate online risk management (Green et al. 2011). What is needed is a study further illuminating how youth themselves understand and react to anonymity and the social opportunities and risks experienced online by both themselves and their peers in order to identify key areas of risk most harmful to those young people lacking the protections provided by a digital literacy in online risk aversion.

This article explores youth narratives of Internet risks and opportunities brought about by user anonymity, especially in social media, with the goal of descriptively combining theory with youth perspectives. Central to the goals of this study are any themes that emerge through youth narratives concerning anonymous online interaction. Clarification of this objective involves a descriptive application of a theoretical framework of motivation self-determination theory (SDT) along with foundational studies on the effects of anonymity toward the goal of understanding youth experiences concerning Internet anonymity. SDT developed by Deci and Ryan (1980, 1985, 2000) provides an important map of developmental goals with which to illuminate student experiences and need fulfillment. SDT is an empirically based theory on human motivation and well-being. So far the theory has been applied to virtual gaming and learning environments (Ryan, Rigby, and Przybylski 2006; Rigby and Przybylski 2009; Chen and Jang 2010), but not to the study of youth online behavior. The theory helps us to understand not only human motivation, but possible benefits provided by social media and the virtual world despite potential risks. The framework provided by SDT is here applied to the empirical findings of written narratives by 14–18-year-old youth ( $n = 258$ ) through its provision of thematic categories illuminating youth motivations online. We aim to show the central opportunities and risks in the data linked to youth motivation and need fulfillment toward a more complete understanding of youth social behavior online and the primary risks involved.

### **Youth online use, anonymity, and SDT**

The Internet's provision of tools toward the creation of increasingly effective social networks (Dooris, Sotireli, and Van Hoof 2008; Ellison, Steinfield, and Lampe 2007; Hargittai 2008) along with an enhanced capability toward the exploration and development of identity (McMillan and Morrisson 2006; Moinian 2006) help to explain its ever increasing popularity among young people today. The social mechanisms at work in this Internet arena can be categorized under the rubric of social media. Social media is made up of various forms including social networking sites or blogs such as Facebook, collaborative projects such as Wikipedia, content communities such as YouTube, and

virtual worlds such as Second Life (Boellstorff 2008; Kaplan and Haenlein 2009). Youth social circles are becoming increasingly computer-mediated, with these online groups providing additional sources of identity expression, exploration and creation while acting as a complementary component of social identity processes of the offline world especially in youth seeking greater peer confirmation (Räsänen and Lehdonvirta 2011).

The various aspects of social media, and social networking sites in particular, function with a level of inherent user anonymity. Notably, no widely accepted model of the various levels of anonymity has been developed thus far and as such, there exists room for interpretation in terms of its forms. For the purposes of this article, anonymity can be categorized on a functional scale, from less anonymous to fully anonymous; from visual anonymity where user features are hidden or unavailable, pseudonymity where participation is carried out using a created online identity toward longer term relationships or reputation building without the disclosure of true identity, and, lastly, full anonymity where the users participate on a short-term scale without any reputation effects or labeling constraints (Pfitzmann & Köhntopp 2000; Joinson 2001). Despite the rise of social media after much of the research on the effects of anonymity, these categories remain helpful in the approaching of anonymity's various forms practiced by youth today.

Table 1 shows the scale of Internet anonymity with which this study is concerned, namely its relational levels persistent online. Notably, the levels are not mutually exclusive as one can interact online in various combinations of anonymous activity. Furthermore, the scale effects are not rules but rather tendencies and gages of what becomes feasible as one moves from more anonymous to less anonymous. Visual anonymity, the most common level among online users, here refers to any instance where users' physical characteristics are hidden even if users are otherwise acquainted. Simply removing visual cues has a significant positive effect on self-disclosure, for example Joinson (2001). Notably, visual anonymity can be present even when reinforcing offline relationships online. Pseudonymity refers to interaction based on usernames, avatars, or profiles created by the user for a social purpose. Finally, full anonymity is present where interaction carries no reputation effects and where users are unknowable once interaction

Table 1. Scale of relationally functional Internet anonymity.

Full anonymity	Pseudonymity	Visual anonymity	Face-to-face
Text-based interaction without any meaningful pseudonym. Example: blog commenting, anonymous chat sites	Pseudonym-based interaction (e.g. username or avatar). Example: online gaming community, Facebook chat using 'fake' profile	Interaction where physical characteristics hidden. Example: online chat or email with known or unknown persons without physical characteristics	Interaction with identifiable participants with visible physical characteristics. Example: Skype video chat with known participant
Less identifiable			More identifiable
Fewer reputation effects			More reputation effects
Shorter term relational scale			Longer term relational scale
Less social regulation			More social regulation

is finished. Fully anonymous experiences are text based, for example, through online chatting or blog commenting without long-term usernames or other pseudonyms.

In practice, these categories of anonymity are complex as users interact online. The use of email and various chat applications involves the level of visual anonymity where users' physical characteristics are hidden. Interaction on social networking sites such as Facebook, where 'fake' profiles are created in seeking some personal gain would be an example of pseudonymity where an instrumental version of self is created; here, reputation effects exist as interaction is on a timescale where trust or relational intimacy is sought to some degree. Notably, increasingly popular anonymous video chat providers such as Omegle or Chatroulette allow for video-based interaction with strangers on a short timescale without the creation of usernames. This could be categorized as pseudonymity without visual anonymity where one's face becomes the avatar, especially in cases where role playing is involved. Full anonymity is only possible through text-based interaction where users are unidentifiable. Typically, as one moves from full anonymity toward visual anonymity, the relational timescale, reputation effects, and potential for social regulation of behavior all increase. The applications of anonymity online are complex, with an interactive flexibility that can provide enhancement to the interactive and communicative demands of youth online (Kaveri et al. 2008).

Linked to the central themes of anonymity and identity here is the exploration of motivation that can lead young people toward both risk and opportunity online. As Internet use increases so also do the interactional and navigation skills of the user, in turn raising both risks and opportunities as online literacy is enhanced (Livingstone and Helsper 2010). As such, the Internet can provide access bringing about an effective method toward behavioral independence by way of enhanced self-determination and autonomy.

The framework matched to this approach is that of SDT developed by Deci and Ryan (1980, 1985, 2000), which proposes that to understand human motivation, one must first consider innate psychological needs for competence, relatedness and, most significantly, autonomy. The theory gained its full form during the 1980s (Deci and Ryan 2008). It has been applied in considerable research on different topics including work (Gagné and Deci 2005), health (Ryan et al. 2008), sport (Wilson, Mack, and Grattan 2008), and education (Guay, Ratelle, and Chantal 2008). This framework puts forth that the satisfaction of these needs will result in healthy development toward self-motivated behavior and an integration of outside motivations.

The fundamental needs proposed by SDT that must be met for healthy social development are first, in terms of competence to engage in optimal challenges paired with experiencing effectiveness in a social space (Deci and Ryan 1980; Ryan 1995). Second, in terms of relatedness to experience a meaningful sense of security, intimacy, and belongingness with others. Third, and most notably, in terms of autonomy to effectively self-organize and regulate behavior involving a working toward an inner coherence and integration among regulatory demands and goals (Deci and Ryan 1991, 2000). SDT has sometimes been criticized for being too universalistic and Western in its approach to well-being, as it underlines the individual side of well-being, most notably autonomy (see e.g. Ryan and Deci 2000). However, the basic needs proposed by Deci and Ryan have been confirmed by considerable research evidence within past decades. For example, relatedness is an important factor promoting health and well-being (Baumeister and Leary 1995). In general, this approach is reminiscent to a classic social psychological understanding of human behavior (Deci and Ryan 1991).

SDT can be particularly illuminating in terms of shedding light on anonymity's effects on social identity development by showing the foundational framework of intrapersonal processes upon which social interaction is built, illuminating potential motivators of youth interaction online which can in turn point to possible risks. For healthy integration to occur, SDT posits that there must be a freedom from excessive external pressures, controls, and evaluations where there can exist opportunities for the individual to process social values and regulations freely. Here, a capacity toward self-determined reflection is a pre-requisite for optimal social functioning and self-determination. Anonymity, as such, can provide such a beneficial social space where potentially harmful social influences can be overcome through its characteristic of magnifying self-concept by way of a stage where aspects of self including identity can move toward a socially beneficial expressed state.

Research in the effects of anonymity strengthen the relevance of utilizing SDT in the analysis of aspects of the Internet user. It was once the predominant view that anonymity causes a loss of self, resulting in negative behaviors such as increased aggression or disinhibition (e.g. Singer, Brush, and Lublin 1965; Zimbardo 1969) or virulent and offensive communication (Kiesler, Siegel, and McGuire 1984, 1125). On the other hand, other studies came to show a lessened aggression and increased affection in the anonymous setting (Gergen, Gergen, and Barton 1973; Johnson and Downing 1979). These two effects of anonymity on self-awareness, on one hand increasing it and on the other reducing it, have been reconciled with the inclusion of group identity. Lea and Spears (1991) resolved this contradiction on findings with the explanation involving an intrapersonal shift of awareness. Visual anonymity causes a reduction in the communication of interpersonal cues within a group, causing a shift to thinking in terms of oversimplified categories as perceptions of self and others shift from personal to the group level. Here, there is a depersonalization of self encouraged by anonymity, brought about by the reduction of interpersonal bases for comparison. This being the case, individuals in the anonymous setting tend to be perceived more as representatives of a group rather than as complex individuals (Lea, Spears, and de Groot 2001).

Strong research evidence points out that anonymity enhances conformity in the group to group norms, showing that online anonymity can actually enhance peer pressure while simultaneously allowing for greater autonomy, a positive relationship between risk and opportunity (Postmes and Spears 1998). This holds significance especially in the study of young people seeking both group acceptance along with stable personal identity. As such, we emphasize this simultaneously contradictory and complementary nature of the anonymous online setting. Notably, studies foundational to the understanding of the effects of anonymity on social interaction were carried out before the introduction of social media online. Although the form that feedback loops and reputation effects take in the online setting differ from those in the original studies on anonymity, it seems reasonable to assume that the findings on the effects of anonymity on interpersonal interaction remain relevant to modern study so long as their role remains descriptive.

We hypothesize that any participation in online activity in pursuit of the three fundamental needs put forth by SDT toward autonomy, relatedness, and competence will result in interactional risk, especially in youth relatively inexperienced in online interaction. Do the three needs categories of SDT emerge from the data toward better distinguishing accounts of risk and opportunity for youth online? If so, what are the implications for the already established positive relationship between risk and opportunity

online in previous work, and is there a clarification of the nature of risks that are positively related to online skills?

### Data and methods

Data was collected in Winter–Spring 2012 at a school located in the Centre of Helsinki, the capital of Finland. The data was collected from 8th grade and the first and second grade upper secondary school, or high school, students in February. Data was then gathered from 9th grade secondary school students in April. In total, 258 students participated in the research. The response rate was 71% as a number of students were absent or did not complete the assignment. 55.8% of the participants were women. Mean age of the participants was 15.4 years ( $SD = 1.18$ ). Youngest participants were in grade eight ( $M = 14.1$  years) and oldest respondents were in the second grade (II) of upper secondary school ( $M = 17.15$  years). Six students of this grade had already turned 18.

Participants of the study were born during 1995–1998, and have therefore lived their entire life with the presence and influence of the Internet and other information and communication technologies and as such function with a high level of Internet literacy. During their lifespan Finland has been among the leading information and communications technology (ICT) countries and young people have generally been early adopters of new technologies (Oksman and Turtiainen 2004; Räsänen and Kouvo 2007). The selected school in Helsinki is among the highest valued in Finland due to its level of academic performance. Hence, the data represents a specific sample of young people coming from a technologically advanced Nordic country. Based on these grounds, we assume that the participants of the study should have a strong capacity to consider various aspects of youth online behavior.

The first author had agreed with the school and parents that teachers will give students a written task during class that will be used as data for the study. The school regularly participated in academic studies, and as such students have experience in such activities. Students were asked to answer a question in essay form, describing their conceptions and experiences with Internet anonymity and youth behavior. The written task was selected as the data collection method, due to the likelihood that disclosure of things done anonymously may not be so freely discussed in a non-anonymous setting such as interview. Benefits of story writing techniques have been noted in previous research (e.g. Morrill et al. 2000). Here students can give greater insight to processes related to identity than would be possible with more traditional methods (Whitty 2002). With this method, young people are able to express themselves anonymously without fear of adults judging their statements in a face to face situation. Students were made aware that their answers were for an academic study. Furthermore, they were informed that narratives would not be analyzed or read by their peers or teachers and that participation would be anonymous. Thus, students wrote anonymously and only indicated their age and gender in order to maximize transparency through minimizing risk of disclosure.

The exact question addressed to them was the following:

Internet use involves a level of anonymity. Write a narrative describing a situation where you feel that anonymity affected the behavior or treatment of a boy or girl of your age online. What happened and what caused the situation? How did he/she react and how did it make him/her feel? Would the situation have been different without anonymity? How? You may also explain whether the situation was routine or an exception.

A narrative in third person was requested to enable the free narration about possible events online. The question was formulated specifically in order to avoid any kind of negative or positive connotation. Furthermore, it was left open to student preference whether the writing would be fictitious or experienced, as the goal was to examine students' conceptions of the topic and reflection on the effects of anonymity more than actual experience. Results were coded by the first author with clear definitions of the three SDT categories that were used for analysis.

Table 2 summarizes the data. Narratives were on average 100 words long, the shortest answers being less than 10 words long and the longest having 350 words. Girls wrote longer narratives than boys. Variance between different school classes is considerable in the 8th and 9th grades (from average 43 words to 195 words), but not significant among upper secondary school students (from 102 to 117 words). This variance is possibly due to the instruction given by the teachers who were responsible for instructing students and carrying out the gathering process. Furthermore, in spite of the given instruction, 21% of the students did not use third person at all, but wrote the complete essay in first person. Despite this variance between first and third person perspective, researcher expectations were met. Students described situations where someone not unlike themselves or their peers had ended up in the online setting. They included analysis on their thoughts concerning how typical this type of activity is online and the meaning and reasons for behaviors they described.

The analysis of the data is thematic, which uses both quantitative and qualitative methods to analyze the data (Boyatzis 1998). The analysis shows first how prevalent certain themes are in the narratives by young people. The data was coded according to psychological needs categories of SDT (Deci and Ryan 2000). All narratives were tagged with YES/NO whether they discussed (1) competence, (2) autonomy and (3) relatedness. Furthermore, specific risks related to the online activity were adapted from research literature (e.g. Livingstone et al. 2011). These include (1) cyber bullying and insults made online, (2) sexual harassment and (3) identity theft or risky false identity. These were also used to tag narrative with YES/NO. The analysis is based on frequency tables and cross-tabulations, and statistical tests are used. SPSS 20.0 was used in the analysis.

The second part of the analysis explores further how young people describe anonymous online behavior. We use the three thematic SDT categories of the first

Table 2. Data summary.

	% (N)	Word count (mean)	Third person narration
Gender			
Male	44.2 (114)	74	79.8 (91)
Female	55.8 (144)	122	79.2 (114)
School grade			
8	30.6 (77)	125	71.1 (59)
9	22.6 (57)	59	92.5 (62)
I	27.0 (68)	103	75.4 (46)
II	19.8 (50)	113	80.9 (38)
All	100 (258)	100	79.4 (200)

Note: Grades 8–9 refer to the last grades of the comprehensive school. Grades I–II are the first two grades of the upper secondary school.



analysis section as a starting point for the secondary analysis, showing how young people write about anonymity in the online setting. The analysis is here based on thematic analysis, an approach especially used in narrative studies of young people (Frank 2002; White 2000). The focus of this section is on the three categorical needs provided by SDT and the risks associated with pursuing those needs in the online setting. We are particularly interested in exploring (1) what young people tell us about anonymity's behavioral and developmental effects online and (2) how they understand and balance opportunities and risks in the online setting.

## Results

### *Prevalence of themes*

The data as a whole fits well with the three SDT categories of competence, relatedness, and autonomy. The categories based on SDT were prevalent in the narratives by young people. Table 3 summarizes the findings: 17% of the narratives included a notion of competence, 32% autonomy, and 30% relatedness.

Girls wrote more about relatedness than boys (37% vs. 24%;  $p < 0.05$ ). Gender differences in competence and autonomy are marginal. Themes become more prevalent among older students. The prevalence of all the categories is especially high among the student of upper secondary school (grades I–II) who are approximately 16–17 years old. For example, 66% of II-grade students wrote about autonomy, while only 17% ( $p < 0.001$ ) of eighth grade students wrote about autonomy. Seventeen-year-old students mentioned relatedness and competence more often than others students ( $p < 0.05$ ). Mode of narration (i.e. first person/third person narration) had no impact on SDT categories.

Student responses based on SDT categories reinforced the need for youth expression and exploration online, while also clearly revealing an awareness of the real risks involved. Indeed, the data reveals the contradiction of the online world, which on the one hand enables freedom of expression, while on the other underlines exposure to various types of risks and negative aspects. Many narratives made at least some kind of remark about negative things happening online. These were most commonly remarks about

Table 3. Psychological needs based on the SDT in the narratives of 14–18-year-old respondents. Percentages (*N*).

	Competence (yes)	Autonomy (yes)	Relatedness (yes)
Gender	ns	ns	*
Male	18.4 (21)	32.5 (37)	23.7 (27)
Female	16.0 (23)	32.6 (47)	36.8 (53)
School grade	*	***	*
8	18.1 (15)	16.9 (14)	31.3 (26)
9	6.0 (4)	14.9 (10)	22.4 (15)
I	19.7 (12)	47.5 (29)	26.2 (16)
II	27.7 (13)	66.0 (31)	48.9 (23)
All	17.1 (43)	32.1 (81)	30.2 (76)

Note: Grades 8–9 refer to the last grades of the comprehensive school. Grades I–II are the first two grades of the upper secondary school.

\*\*\* $p < 0.001$ ; \* $p < 0.05$ ; ns =  $p > 0.05$  (two-sided Pearson chi-square).

cyberbullying and insults online (74%). Many narratives also mentioned identity theft or risky false identity (27%) and sexual harassment or exploitation (18%).

These results perhaps refer to the fact that anonymity as such is often considered negative. The results also indicate the possible ‘third person effect,’ which refers to the phenomenon where the effects of communications with others are exaggerated when looked at from another’s point of view (Davison 1983). Youth are more willing to disclose negative aspects of the Internet through the perspective of others rather than themselves (Livingstone et al. 2011, 46). In our data, young people who used only first person narration were less likely to include cyberbullying as a theme than those who also used third person narration (60% vs. 77%,  $p < 0.05$ ). Similar differences were not found in the other themes involving online risks.

Differences between genders were insignificant in online risks. Girls, however, mentioned sexual harassment more often than did boys (22% vs. 14%, ns). Similarly, there are no statistically significant differences between different school grades. Students in grades 8–9 mentioned identity theft or risky false identity more often than did students of upper secondary school (grades I–II) (31% vs. 22%, ns). These results show that young people aged 14–18 in our data are equally aware of different online risks.

Differences in SDT categories were partly associated with online risk categories. Relatedness had a moderate positive correlation with the categories of identity theft/risky false identity ( $r = 0.40$ ,  $p < 0.01$ ) and sexual harassment ( $r = 0.27$ ,  $p < 0.01$ ) and negative correlation with the category of cyberbullying ( $r = -0.30$ ,  $p < 0.01$ ). In other words, narratives including relatedness were also more likely to discuss identity theft/risky false identity and sexual harassment, but less likely to mention cyberbullying.

Our quantitative thematic analysis shows both that categories of psychological needs provided by SDT and different risks are prevalent in the online setting. The data thus illustrates the dilemma noted by Livingstone and Helsper (2010), in that there exists an intersection in the Internet’s anonymous world between risk and opportunity that youth face as they interact online. Many students noted experiences with negative aspects, such as aggressive communication, social exclusion, and harassment. However, in addition to negative aspects, student narratives revealed a perspective of holding anonymity as a tool for social freedom toward a greater expression of self and communication. It is to a qualitative thematic analysis of narratives that we now turn.

### **Competence**

The themes of SDT emerged from the data in the form of the fundamental needs for competence, autonomy, and relatedness by way of various explanations for anonymous behavior online. As noted before, 17% of narratives dealt with the issue of competence in the area of youth Internet use. This need to meet challenges toward feelings of success and effectiveness took various forms in the narratives.

Tuula was not a computer genius, not one bit. That’s why it was completely understandable that she asked about her problem on the chat forum. Or so she thought. As she excitedly went to check any responses from others, she noticed that they were of no help. ‘Are you a complete idiot?’ asked someone anonymously. All of the responses were similar and it hurt. (Male 16 years, #151)

Some students showed a view of the Internet as a stage, where interaction with others caused what might be referred to as a virtual spotlight to be pointed toward the expressing

individual; the risk of participating can involve harsh criticism from anonymous participants, without any possibility for enforcing civility when online community self-regulation is absent. Potential benefits seen by youth seem to often outweigh the estimated risk of moving into the arena.

Mikko decided to post his guitar playing video on YouTube. The next day he saw that someone had liked it, which made Mikko happy. The next day he noticed a cruel message. These types of messages kept coming and Mikko became quite upset until his friend Santeri encouraged him, telling that his trumpet playing videos had also been criticized, but also praised and that bullies are simply acting out of a lack of self-esteem. This face to face encouragement caused Mikko to keep posting new videos every week. (Female 16 years, #184)

In terms of competence, students showed that the Internet is an accessible place for expressing talents and skills in the hope of positive feedback. It is a stage for displaying self on the road to self-determination, a testing ground of personal competence. Youth seek encouragement from their face to face friends in order to carry on performing for the world online; the line between expression and performance is a blurry one here, though its value to youth in their development is clear. Furthermore, even in cases where the online community does not self-regulate in terms of curbing abuse, offline support can be found.

I have experienced the great benefits of being safely anonymous online, where it allowed me to receive treatment as if I had been much older. I was so pleasantly surprised with the high quality of customer service I received when dealing with a seller online. Without anonymity, I strongly believe that I would not have been treated as well in the same situation. (Male 17 years, #225)

Notably, the risks of online anonymous interaction are lessened a great deal when anonymous interactive partners have an incentive toward respect and courtesy. In an anonymous sphere where all parties are tied together by a set of principles or goals whose completion requires all parties to be content, such as market transactions, youth can find a new empowerment not previously likely due to a leveling of the playing field that anonymity can provide. Here, it is made apparent that perceptions of the other determine the level of risk, all within a risk-averse framework built upon mutual dependence on mutual benefit; a model that minimizes risk online.

Although it is easier to say things anonymously, you also lose credibility and trustworthiness in defending your position if you are afraid of taking responsibility for your words by, at the very least, disclosing your real name. On the other hand, online forums are overflowing with unreasoned writings. (Female 17 years, #235)

Competence is here tied to responsibility; without credibility, one's expressive effectiveness is minimized. Here, accountability and true identity are tied to trustworthiness as the method for reaching a social validation, a validation achieved through competence in defending opinions. Anonymity does not necessarily inspire trust in those confronted by the anonymous person despite its potentially liberating effects on the personal level. What becomes easier anonymously, the relatively risk free venture of superficial communication, is not necessarily respected. Furthermore, and by the same token, what is difficult anonymously, the expression of hidden aspects of self, is not necessarily respected either;

the risk of expression here is positively related to the degree of personal disclosure open to potential criticism. The themes to follow shed more beneficial light on the risk asymmetries between anonymous partners.

### *Autonomy*

The need to develop toward self-regulated and self-organized behavior for inner coherence and self-determination was apparent throughout student narratives. About 31% of students discussed autonomy, most visibly in the various needs for expression and exploration of self.

If Pekka is shy and he has difficulty expressing himself, anonymity can help him become liberated to participate in discussions. This can become an important part of his social development through finding friends online, becoming comfortable with himself, and even giving him courage to express himself face to face. (Female 17 years, #232)

Students showed a propensity toward describing anonymity as a tool of social freedom online, especially when the various risks involved had not yet been experienced. The Internet, or the stage for expression toward autonomy here, can provide youth with methods of self-realization and reinforcement of identity paired with the exploration of previously hidden aspects of self.

Matti, staring at his screen apathetically, searches Google for neglected youth support. He finds a website, where professional counseling adults are available for anonymous chatting. Little by little he begins to open up as the therapy begins to help him. (Female 16 years, #160)

The anonymous experience can foster therapeutic processes, here with positive effects in a professional setting. Youth hold a demand for therapeutic, honest interaction toward personal development, which the Internet can provide. However, the risk of aggressive criticism is significantly more severe for those willing to make themselves vulnerable. If a safe environment can be guaranteed, the modes and goals of youth expression adapt accordingly.

There was a boy who was not very popular at school; he was bullied. He did not dare tell about the bullying to anyone. He decided to express his feelings on an online forum, and eagerly awaited feedback. The next day many comments had arrived, some positive and others negative. The positive ones made him feel better. (Male 15 years, #116)

Fear of harassment was a theme throughout the data. Although anonymity was a tool for bullies to remain hidden, it also allowed for victims to express themselves more freely. Community online is not eliminated by anonymity's occasional effect of amplifying aggression, as positive aspects are amplified by the same process. Notably, the bullies themselves can be using the method therapeutically despite being destructive to others, 'a bully's low self-esteem is what he or she is expressing' (Female 17 years, #254).

If someone is particularly shy, anonymity makes it easier to be expressive, allowing for the person to become more themselves. A really nice thing about anonymity is that friendships that develop through it are built on personality rather than appearance. (Male 16 years, #162)

Youth showed that at the root of much of the harassment experienced online was appearance. As such, anonymity becomes a method toward eliminating certain types of interactive risk, in a way hiding behind anonymity in self-preservation by eliminating the superficial. This brings about a reliance on communication and aspects of self most self-determined, namely personality.

### *Relatedness*

Relatedness, or the need to experience a meaningful sense of security, intimacy and belongingness with others also emerged as a major theme in 30% of youth narratives. Social networking in the anonymous setting is one of maximized ease of access paired also with a high risk for false identity or harassment.

I begin chatting anonymously, and am surprised to find someone who seems quite nice. This person claims to be a girl aged 17. Of course, this is the Internet, and we cannot be sure of anything, and this would not be the first time I were tricked. We remain skeptical about the whole situation. We find that regardless of who the person really is, they really are fun and a great chat companion. I was pleasantly surprised and I hope to find other great people as well. (Male 16 years, #165)

Chatting online is quite enjoyable, though half of the people there are perverts. But why should that be shocking when you can always disconnect and move to the next one? It is a wonderful way to meet new friends from all over the world! It's perfect for me. Anonymity creates excitement in either case. (Female 15 years, #91)

Youth displayed a wariness of those with whom interaction took place online; risk is in a sense minimized with the expectation or preparedness for some level of deviance. Notably, distrust need not take away from the quality of interaction or the sense of social validation possible online. However, the ease of creating false identity for manipulation and harassment, using the guise of pseudonymity, where simple visual anonymity is expected, was also evident in student experience. The elimination of physical feedback loops associated with interaction works to create an uncertainty of the interacting partner due to a new reliance on now unknowable individual characteristics. As a male student aged 17 noted, 'Anonymity does not teach good manners, because everything is possible online' (Male 17 years, #241); Students showed that anonymity tends to not foster civility, as its socially freeing aspect magnifies the expressive needs already present and pairs it with reduced accountability; the effects can be both positive and negative.

Elina found someone online in a chat forum with whom she shared strong opinions in common so they began to chat anonymously. They got along so well that they decided to keep in touch though to also keep themselves anonymous. Elina was excited about her new Internet friend, a boy. They spent hours chatting online. Elina began imagining the boy's appearance and voice; she began developing strong feelings for him. Anonymity provided a certain safety; she knew that he did not care about her appearance or beauty but rather her personality and opinions. (Female 14 years, #39)

Girls more often included relational instances where validation and acceptance from the opposite sex was given high priority. Trust was granted quickly in cases where identity groups were shared and where validation was given by males based on aspects other than physical attraction early on. In ideal cases, ulterior motives were absent from the motivations of the male involved. However, in cases where males sought more than

casual relationship, unexpected pain resulted. As noted by a female student, aged 18, 'We kept in touch almost daily for many months, and I developed feelings for him even though I didn't even know his name. In the end, all he wanted was sex. I deleted my blog because of him' (Female 18 years, #218). Anonymity here enhanced relationships in some cases by fostering a safety net where expression became more free. In other cases, anonymity was used to take advantage of trust. In all cases, risk increased with the any increase in interactive partners, as one cannot learn to avoid risk when the other is by definition unknowable as are the motivations behind the interaction. Here, the risks of asymmetry in the degree of anonymity were made apparent by youth; girls assuming visual anonymity being taken advantage of by predatory males through pseudonymity, namely the creation of fictitious and instrumental profiles.

### **Discussion and conclusions**

This article explored the narratives of youth Internet users through the lens of their conceptions on self-exploration, anonymity, and the risks involved. This analysis, based on a sample of students aged 14–18 years old from one school in Helsinki, sheds light on the processes at work within youth organized by the needs framework of SDT. The sample is in many ways ideal in that the school is one of Finland's best, made up of some of Finland's most technologically savvy and proficient students; this plays a particularly significant role in the capacity of students to express themselves and explore such an abstract topic as Internet anonymity.

Our findings confirm those of previous studies where the increasing opportunities of the Internet lead to an increase in risks (Livingstone and Helsper 2010), here in the sphere of social media. Accounts of cyberbullying and harassment were evident throughout. However, students also displayed a continual appreciation for the enhanced capacity for self-exploration, expression, and social validation by the Internet stage toward identity development. The importance of the Internet as a social tool and expressional stage for youth is made clear in the data, with benefits for identity exploration and relationship building balanced with the various risks that persist in the setting; increasingly, the Internet is becoming the method of communication and social need fulfillment most accessible to youth (Blais et al. 2008).

As hypothesized, the needs categories of SDT emerged from the data. Our study indicates that SDT provides a relevant perspective on youth online behavior through its provision of a useful categorization of needs through which various opportunities and risks can be approached. SDT categories were more prevalent in the narratives of older students, with the theme of autonomy being a far more prevalent theme among 16–17-year-olds compared to 14–15-year-olds. Furthermore, the older students more actively mentioned relatedness and competence. These differences could be attributed to older students having recognized personal needs, while also being more actively seeking identity and self-determination on a daily basis; the SDT categories were clearly more relevant and familiar aspects of their lives.

Girls wrote more about relatedness than did boys, owing perhaps to a heightened demand for validation from the opposite sex and a greater prioritization of relationship online. Furthermore, 14–15-year-olds mentioned the risks of identity theft, false identity, and sexual harassment more often than did 16–17-year-olds, showing a potential bias in who is being taken advantage of online. Unsurprisingly, younger participants are less equipped to deal with risks online and predatory participants take advantage of that

inexperience; students showed that with the experience of harassment or betrayal online comes a healthy distrust of others in the anonymous setting.

SDT provided a helpful framework for distinguishing between opportunities and risks online, while also revealing their overlap. Furthermore, some links were determined in the form of positive relationships between certain risks and opportunities. Relatedness was found to be positively correlated with the risk of identity theft or false identity and sexual harassment, while being negatively correlated with cyberbullying. Online aggressors utilize methods that are found to be effective; the risks positively associated with relatedness are long run strategies linked to lower levels of anonymity, while cyberbullying is a short-run behavior related to higher levels of anonymity. Seeking relational damage is a strategic behavior, while seeking immediate damage is carried out with impulsive acts.

As is the case with self-reported content, a concern is that responses are inherently subject to biases, faulty memories, and skewed estimates. Inevitably, some uniformity and potential clarity was lost in the pursuit of a relatively free-form narrative answer. Furthermore, the need categories for competence, relatedness, and autonomy are not always clearly separate from one another, and as such require some level of interpretation by the researcher for distinguish between themes. Also, the need to autonomy could be viewed as biased toward individualistic cultures, such as Finland, which can help to explain its recurrence in the data. Although Western social media culture is becoming increasingly global, a cross-cultural measure of SDT needs prevalence in more collectivistic cultures could yield a comparison between the universality of SDT needs or the strength of global social media culture. Notably, the sample size of our study was limited in scope to one school in Helsinki, making this study more descriptive than representative in nature although Internet literacy in Finland is uniform due to the high overall technological literacy level among youth throughout the country (Oksman and Turtiainen 2004). Questions for future research include whether the prevalence of demand for the need categories of SDT among youth online corresponds positively more strongly with age or level of online literacy, in addition to how measures of Internet literacy and online skills can be more effectively measured.

Although the functional aspects of social media are becoming increasingly uniform, the variance among users remains vast. SDT provides a helpful framework with which to approach the diversity in a useful manner (Ryan et al. 2008). Overall, students revealed opportunities afforded by Internet anonymity in the form of expressional freedom, relationships, and self-exploration, while also noting the real and painful risks associated with those seeking to inflict damage. These narratives show that the cost burden of interaction is carried by the vulnerable party; risk is carried by the party seeking to express self, who is at the mercy of an anonymous audience. However, in all cases, from the point of view of the anonymous youth (whether harassing or praising), anonymity is an expressional benefit in the moment that facilitates a need-fulfilling act. Online activity among youth is a representation of self, the same self present and active offline; development is sought in both, as the overlap between the two is the individual rather than a relationship or some behavior (Kaveri et al. 2008). Internet anonymity is, it seems, for some a passive magnifier and for others an aggressive megaphone, the implications of which are as destructive or beneficial as is the fulfillment of its users' needs.

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