Journal of Adolescence 45 (2015) 225–236

Contents lists available at ScienceDirect

Journal of Adolescence

journal homepage: www.elsevier.com/locate/jado

# Children's online coping strategies: Rethinking coping typologies in a risk-specific approach

Sofie Vandoninck*, Leen d'Haenens [1]

*KU Leuven, Institute for Media Studies, Parkstraat 45 bus 3603, 3000 Leuven, Belgium*

ARTICLE INFO

*Article history:*
Available online xxx

*Keywords:*
Online risks
Coping strategies
Coping scale
Children
Adolescents

ABSTRACT

Understanding how children deal with problematic situations online is helpful in developing efficient awareness raising and online resilience building initiatives. In this article, we will discuss and develop typologies for online coping strategies. In a school survey, 2046 Flemish children aged 10–16 were asked about how they (would) respond when confronted with different types of online risks. Using principal component analyses and multi-dimensional scaling, we identified different types of cross-risk and risk-specific coping strategies, and explored which types of coping have similar underlying meanings. The results suggest to distinguish behavioral avoidance tactics from mere passive responses or indifference. Young people tend to perceive online coping strategies along two dimensions: engagement versus disengagement and technical versus non-technical measures. Behavioral avoidance is popular among younger children and is associated with a medium level of active engagement and often combined with communicative approaches. Girls are more communicative and respond more proactively.


## Introduction

Although children's exposure to online risks is unavoidable, it does not necessarily result in actual harm. Moreover, risk exposure potentially contributes to the process of learning on how to deal with unpleasant situations online. However, children do not learn equally from negative online experiences, and some cope with adversity better than others (Livingstone, Haddon, Görzig, & Olafsson, 2011; Šmahel & Wright, 2014). Coping strategies are thoughts and behaviors that arise in response to a stressful or disturbing situation as a means to avoid further (psychological) harm (Masten & Gerwitz, 2006). Such strategies can be emotional, cognitive, or behavioral responses meant to manage both the internal and external demands of stressful situations (Skinner & Zimmer-Gembeck, 2007).

Two traditional coping models dominate the literature. One is Lazarus and Folkman's transactional model (1984), which distinguishes between problem-focused coping and emotion-focused coping. While *problem-focused* coping strives to tackle the problem head-on and solve it, *emotion-focused* coping addresses its negative emotional consequences and attempts to evoke more positive feelings (Lazarus & Folkman, 1984). The other traditional model is Roth and Cohen's *approach–avoidance* model (1986): in the approach mode one acknowledges the stressors and tackles the

* Corresponding author. Tel.: +32 16 32 31 68.
*E-mail addresses:* sofie.vandoninck@soc.kuleuven.be (S. Vandoninck), leen.dhaenens@soc.kuleuven.be (L. d'Haenens).
[1] Tel.: +32 16 32 36 20.

http://dx.doi.org/10.1016/j.adolescence.2015.10.007
0140-1971/

problem directly, while the avoidance mode is more about evading the problematic situation. These models have been criticized because of overlapping categories and difficulties in labeling multiform responses, thus suggesting a wider range of coping dimensions. An example: avoidance strategies in cyber-bullying such as 'not replying to the perpetrator's messages' may be both problem-focused and emotion-focused (Parris, Varjas, Meyers, & Cutts, 2012; Riebel, Jäger, & Fischer, 2009; Skinner, Edge, Altman, & Sherwood, 2003; Šleglova & Černá, 2011; Tenenbaum, Varjas, Meyers, & Parris, 2011).

Diverging viewpoints on coping exist. Some elaborate on the transactional model and include cognitive strategies such as 'positive comparison' or 'selective ignoring' to manage the problematic situation (Folkman & Moskowitz, 2004; Pearlin & Schooler, 1978). Another alternative is Billings & Moos's three-factor conceptualization of coping (1981), which distinguishes between 'active behavioral coping' (e.g., talking with a friend, looking for information about the situation), 'active cognitive coping' (e.g., trying to see the positive side, considering alternatives) and 'avoidance' (e.g., getting busy with other things, avoiding thinking about the problem). In addition, several studies favor a hierarchical management of coping strategies with broad higher-order and subsequent lower-order categories (Carver, Scheier, & Weintraub, 1989; Skinner & Zimmer-Gembeck, 2007; Skinner et al., 2003; Tenenbaum et al., 2011).

Coping is far from a straightforward process, as personal, dispositional characteristics of children do have an impact. Early studies on gender differences in coping conclude that girls more easily talk to friends and seek emotional support after an upsetting experience. Fatalistic responses such as resigning to the situation also occur more often among girls (Frydenberg & Lewis, 1991). Looking at coping with (online) bullying, studies confirm that victimized girls are more communicative and more often seek emotional support and/or problem-solving advice (d'Haenens, Vandoninck, & Donoso, 2013; Tenenbaum et al., 2011). Young children also prefer a communicative approach as they are still missing the meta-cognitive skills for reflective and future-oriented thinking, i.e. skills that facilitate successful self-monitoring and problem-solving. Therefore, younger children would struggle more with adopting proactive coping strategies (Gardner & Steinberg, 2005; Holodynski & Friedlmeier, 2006; James, 2014).

Our goal is to rethink existing typologies of online coping. Building upon current insights, we want to uncover underlying theoretical dimensions across a range of coping strategies and assess how gender and age play a role in children's coping preferences. While most studies about online coping focus on cyberbullying, we include various content as well as contact/conduct risks in our analysis, in an attempt to enrich insights across several types of online risks.

## Coping in online situations

Theories and typologies on 'offline' coping have been used as frameworks to look at how children deal with (potential) problems and unpleasant or stressful situations in an online environment. Not surprisingly, most attention has gone to coping with cyber-bullying, due to its significantly negative impact on children's well-being (Vandebosch, Van Cleemput, Mortelmans, & Walrave, 2006; Wolak, Mitchell, & Finkelhor, 2007). Recurring coping strategies intended to handle online bullying are (1) seeking social support from peers or parents, (2) so-called 'technical strategies' such as contacting an administrator or blocking the perpetrator, (3) evading or avoiding the problematic situation by not replying to the aggressor or not logging in for a while, and (4) accepting that the hostile situation is part of life and focusing on different things (diversionary tactics) (Parris et al., 2012; Šleglova & Černá, 2011; Ybarra, Mitchell, Wolak, & Finkelhor, 2006). The EU Kids Online study investigates a broader set of online risks. Besides online bullying, coping strategies related to sexual content, sexting (i.e. sending or receiving sexually oriented messages between peers), and contact with strangers were included. Talking to another person was the most popular strategy, regardless of the type of risk. Combining two or three coping strategies, especially proactive problem-solving tactics, was also quite common (d'Haenens et al., 2013).

How children evaluate and perceive the situation remains crucial in determining which coping strategies are employed. Early on in the appraisal process, situations perceived as more serious or harmful are expected to provoke more emotional responses (Smith & Kirby, 2009). Later in the appraisal process, the level of changeability and controllability is assessed, assuming that those who consider the unpleasant situation as changeable are more likely to use problem-solving coping strategies, while those who perceive it as difficult to change are more likely to turn to emotion-focused coping strategies (Völlink, Bolman, Dehue, & Jacobs, 2013). Studies on online risks confirm that children who feel upset more intensely or perceive online risks as more severe, seem more motivated to tackle the problem proactively (Vandoninck, d'Haenens, & Segers, 2012; Youn, 2005). Content risks (e.g. sexual or aggressive content) are generally perceived as less problematic or harmful compared to contact or conduct risks (e.g. sexting, bullying) (Šmahel & Wright, 2014).

Online and offline vulnerability are interrelated. Children who find it difficult to come up with effective coping strategies in the face of 'offline' stressors and problems also find it hard to cope with online adversities such as cyber-bullying (Völlink, Bolman, Dehue, et al., 2013). Generally speaking, so-called problem-focused coping strategies such as blocking senders are considered more effective. Not only does such an approach tackle the current problem, it may also prevent its re-occurrence (d'Haenens et al., 2013). Victims of online bullying who resorted to a problem-focused coping approach strikingly reported fewer health complaints and depressive feelings compared to those using emotion-focused coping (Bolman, Eppingbroek, & Völlink, 2012; Völlink, Bolman, Eppingbroek, & Dehue, 2013).

## Behavioral avoidance as a coping strategy

Avoidance strategies such as (temporary) avoiding certain websites or platforms or ignoring requests for personal information can also be effective strategies in dealing with (potentially) unpleasant online situations. So-called 'passive' responses are not completely separate from 'active' coping strategies, generally perceived as more favorable. Some authors argue that cognitive and/or emotion-focused strategies such as emotion regulation, cognitive distraction or acceptance can be helpful in situations perceived as unavoidable or uncontrollable, even among victims of cyber-bullying (Folkman & Moskowitz, 2004; d'Haenens et al., 2013; Parris et al., 2012; Šleglova & Černá, 2011). As stressors are generally minor at an early stage, small problems can be met with small and adequate actions (Fiske & Taylor, 1991). In the next stage the individual can seek feedback to determine whether preliminary efforts had an effect, and whether additional coping efforts are needed (Aspinwall & Taylor, 1997). For instance, in the first stage one may ignore acts such as teasing in an attempt to discourage the perpetrator from sending more unpleasant messages. If the situation intensifies or escalates to online bullying, more proactive problem-solving techniques can be employed. Another typical example among the younger age groups is that of a child being bothered by unwelcome content who chooses to leave the platform altogether or avoid it for a while, and who subsequently approaches someone (mostly a parent) to discuss the situation (Vandoninck, Barbovschi, d'Haenens, & Cernikova, 2014).

In some situations young people seem indifferent and do not take any preventive or reactive measure. Minimization, mistrust, acceptance or trivializing the situation are common motives for disengagement in problem-solving strategies (Skinner & Zimmer-Gembeck, 2007). Such an indifferent attitude is linked with awareness, because a lack of interest or involvement in the situation often lies at the core of this passivity (Youn, 2005). Other reasons are justification and cognitive reframing, when children say they do not perceive a situation as problematic or worth getting upset over (Kochenderfer-Ladd & Skinner, 2002; Parris et al., 2012). This passive, indifferent attitude could be distinguished from a conscious choice to avoid a situation, assuming that deliberate behavioral avoidance tactics such as staying away from an online platform are distinct from a merely passive attitude such as simply hoping the problem will go away by itself (Šleglova & Černá, 2011; Vandoninck & d'Haenens, 2014).

To summarize, children tend to respond in many different ways to (online) risks. Depending on the level of perceived harm, controllability and complexity of the situation, children move from simple to more elaborate coping strategies. While behavioral avoidance strategies mostly have rather negative connotations, some studies question this and indicate that avoiding may be an adequate coping response in some situations. We believe that children who consciously choose to stay away from 'problematic' platforms, applications or online practices are actively taking steps to deal with (potentially) unpleasant experiences. Nevertheless, some children remain passive and indifferent because they do not (or try not to) consider the situation as problematic or harmful and thus feel no inclination to change it. We argue that such a response is different from behavioral avoidance tactics.

In an effort to rethink typologies of online coping and get a better understanding of how children perceive, connect and combine coping strategies, we set up three stages of analysis. Our first goal is to identify the role of behavioral avoidance strategies in coping with online risks. Using a principal component analysis (PCA), we attempt to identify various components or types of coping strategies and determine whether these are risk-specific or applicable across various online risks. Our second aim is to clarify how types of coping strategies are inter-related and connected to one another. Using multidimensional scaling techniques (MDS), we explore these underlying dimensions and connections between coping strategies, so as to identify which types of coping strategies are conceptually close to each other. Finally, as both gender and age affect children's coping preferences, a two-way ANOVA will clarify how distinct gender and age groups are dealing with online risks.

## Method

### *Design and data collection*

A survey of 2164 school children aged 10–16 was conducted in 27 schools across Flanders from October 2012 to January 2013. Participants were given 50 min to complete a paper-and-pencil questionnaire, under the supervision of a teacher and at least one researcher. After data cleaning we obtained 2046 valid surveys. Children aged 13–16 were surveyed on two types of content risks (sexual and shocking images) and four types of contact/conduct risks (online bullying, contact with strangers, sexting, personal data/privacy misuse). In the younger age group (10–12 years old) the section on sexting was dropped for ethical considerations. For each type of online risk children were first asked whether they had experienced it during the last year. Next, children were asked questions on how they (would) feel afterwards (i.e. intensity of harm) and how they (would) respond (i.e. coping). Following in the steps of other studies on coping with online risks which have shown it makes sense to ask non-victimized children how they (hypothetically) would deal with such issues, both victimized and non-victimized participants were asked to complete the whole set of questions on exposure, harm and coping (Völlink, Bolman, Dehue, et al., 2013; Youn, 2005). Children who indicated to have experienced an online risk, were asked to think about the most recent incident when completing the questions about harm and coping. The survey was pre-tested among 32 children in their first year of secondary education to ensure all questions and items were clearly understood. A cognitive pre-test showed that children with reading difficulties had problems with completing the questionnaire in time, so a few questions and items were deleted to shorten it.

*Measures*

Intensity of harm was measured on a 4-point Likert scale ranging from 'I did not/would not feel bothered', 'I did/would feel a bit bothered', 'I did/would feel fairly bothered' and 'I did/would feel very bothered'. A similar 4-point Likert scale was used to evaluate coping: 'I did not/would not do this', 'I would maybe do this', 'I would probably do this' and 'I did/would certainly do this'. The selection of the coping items is based on the Kids Coping Scale (Maybery, Steer, Reupert, & Goodyear, 2009) and the EU Kids Online study (Livingstone et al., 2011). In order to refine the items and measure coping with online risks in particular, an exploratory survey was conducted in the Spring of 2011 among 1041 Flemish children aged 10–16. This survey included one open question on what children would do in case of an unpleasant online experience. This resulted in a selection of items for each of the six online risk types included in the final survey (see Table 1).

*Data analyses*

For each type of online risk a *principal component analysis (PCA)* was conducted on the coping strategies to explore the factor structure. Knowing that children often adopt a combination of coping strategies, we expected the underlying factors to be correlated, hence an oblique rotation procedure (direct oblimin) was used. Although the distributions of some items exhibited skewness and/or curtosis (e.g. 'seeking online support'), we may assume that the latter had no negative impact on the validity of this type of exploratory PCA analysis (Maybery et al., 2009). The number of extracted factors was not determined beforehand, and was based on the eigenvalues with a threshold of one. Only factor loadings above .40 were interpreted. Table 3 shows the PCA structures with the KMO-measure, percentages of explained variance (PVE), reliability scores ($\alpha$-value) and factor loadings for each type of online risk. New latent coping variables were created, based on the mean score of the items loading on each coping factor identified by the PCA analysis.

We performed a *classical multidimensional scaling* (CMDS) using the ALSCAL algorithm in SPSS. Since risk perception could have an impact on children's coping efforts, two separate CMDS analyses were conducted: one for content risks (perceived as less problematic) and another for contact/conduct risks (perceived as more harmful). A CMDS model only uses one data matrix and presents the outcome at composite level, not at the level of the individual cases (Giguère, 2006). The newly created latent coping variables (at interval level) are the input data to create the data matrix, using the Euclidian model to compute optimal distances (i.e. dissimilarities) between the coping variables. For reasons of interpretability, a two-dimensional space is favored. Checking the scree plot using the PROXSCAL command, we verified for every MDS model whether a two-dimensional solution would be appropriate to represent the data. Coping variables positioned closely to each other in this MDS space are conceptually similar along the two dimensions, and meanings or labels attributed to these dimensions are to be based on theoretical insights (Hout, Papesh, & Goldinger, 2013). The multi-dimensional scaling analysis includes only cases without missing values on each of the input variables (i.e. latent coping variables). As questions on sexting were not included in the surveys for the youngest age group (10–12 year-olds), thus explaining the lower number of cases in the CMDS model for contact/conduct risks.

A *two-way independent ANOVA* was conducted to compare the main effects of gender and age group (10–12 years old and 13–16 years old) and the interaction effect (gender × age group) on the children's disposition to use a certain coping strategy. The latent coping variables based on the PCA described above were used as dependent variables. We first checked for the assumption of homogeneity of variances with the Levene's test (Spread versus Level). If the assumption was violated ($p < .05$),

**Table 1**
Overview of coping strategies mentioned in the survey for each type of online risk (grayed cells indicate this item is included).[a]

| | Online bullying | Sexual images | Shocking images | Meeting strangers | Sexting | Privacy misuse |
|---|---|---|---|---|---|---|
| Change privacy settings | ■ | ■ | ■ | ■ | ■ | ■ |
| Go offline for a while | ■ | ■ | ■ | ■ | ■ | ■ |
| Click away, go away from website, profile or platform | ■ | ■ | ■ | | ■ | |
| Seek online support | ■ | ■ | ■ | ■ | ■ | ■ |
| Delete images or messages | ■ | ■ | ■ | ■ | ■ | ■ |
| Take revenge | ■ | | | ■ | ■ | ■ |
| Talk with parents | ■ | ■ | ■ | ■ | ■ | ■ |
| Ignore what happened | ■ | ■ | ■ | ■ | ■ | ■ |
| Block contact person | ■ | ■ | ■ | ■ | ■ | ■ |
| Talk with friend(s) | ■ | ■ | ■ | ■ | ■ | ■ |
| Don't care about what happened | ■ | ■ | ■ | ■ | ■ | ■ |
| Go away from computer or device | ■ | ■ | ■ | | ■ | ■ |
| Protect personal information | ■ | ■ | ■ | ■ | ■ | ■ |
| Hope the problem goes away by itself | ■ | ■ | ■ | ■ | ■ | ■ |
| Avoid unknown websites | | ■ | ■ | | | ■ |
| Take a friend to meeting | | | | ■ | | |

[a] An empty cell means the item is not included in that particular factor or component, either because that item was not included in the list of potential coping strategies related to that type of risk or because factor loadings for that item were too low.

**Table 2**
Percentages of children being exposed to online risks during the last year and if they (would) feel fairly or very bothered about it.

| | Exposure to online risks (%) | (Would) feel fairly or very bothered (%) |
|---|---|---|
| **Online bullying**<br>Received nasty comments or messages online (incl. mobile device) | 11.3 (N = 2026) | 79.6 (N = 2022) |
| **Sexual images**<br>Seen sexual images online (incl. mobile device) | 38.2 (N = 2018) | 60.6 (N = 2019) |
| **Shocking content**<br>Seen images about aggression, auto-mutilation, suicide, anorexia, racism, drug abuse or gory accidents | 72.6 (N = 2046) | 60.8 (N = 2023) |
| **Meeting strangers**<br>Arrange an 'offline' meeting with an online contact never seen in real life | 16.9 (N = 2012) | 66.2 (N = 2023) |
| **Sexting**<br>Receive sexting messages from peers (incl. mobile device) | 35.2 (N = 992) | 58.8 (N = 987) |
| **Privacy misuse**<br>Misuse of password to access profile without permission ('profile hacking') | 8.9 (N = 2016) | 84.1 (N = 2035) |

we reran the test with transformed data, i.e. a natural log transformation[2] of the dependent coping variable. If the assumption of homogeneity was met using the transformed coping variable, it was used as dependent variable in the ANOVA. If the transformation did not change in the outcome of the Levene's test, we proceeded to ANOVA using the untransformed coping variable, even though homogeneity of variances could not be confirmed. Because questions on sexting were only asked in the oldest age group, we conducted an independent t-test for this type of online risks.

## Results

The sample of 2046 Flemish school children consisted of 50.8% boys and 49.2% girls. The mean age was 12.76 years (SD = 1.85), with 44.8% of 10–12 year-olds and 55.2% in the older age group. One in three (30.5%) is enrolled in primary school, 34.9% in the first grade of secondary education ('middle school') and 34.6% in the second grade ('high-school'). Among those in secondary education, 56.6% attends general education, 24% technical and 19.5% vocational training.[3] With more than 7 in 10 children having encountered shocking content in the last year, content risks are most prevalent. Very often gruesome images or portrayals of aggressive behavior are concerned. Online bullying (11.3%) and privacy misuse (8.9%) are least common, but have the strongest negative impact on children's emotional well-being, with about 8 in 10 children saying they (would) be very or fairly upset if this happened to them. Yet the other types of online risks are also evaluated as bothersome by a majority of children, indicating that enhancing children's coping capacities remains important (see Table 2).

### *Principal component analyses*

Across the six types of online risks, the PCA analyses identified *a proactive, a communicative and an indifferent* component of coping. For online bullying and content risks (i.e. exposure to sexual or shocking images), the PCA analyses identified an additional component of *avoidance* strategies. For meeting strangers, an additional component of *peer support* was identified. Looking at Table 3, three coping items have a different function, depending on the type of risk children are dealing with. The item *going offline for a while* loads onto the avoidance factor when confronted with online bullying and content risks, while it loads onto the communicative factor when dealing with so-called contact/conduct risks (i.e. meeting strangers, sexting, privacy misuse). This suggests that in the latter situations going offline for a while could be a temporary strategy until someone can be approached to explain what happened. The item *clicking away* loads on the proactive factor in case of content risks and sexting, but on the avoidance factor when dealing with online bullying. This indicates that clicking away may be sufficient to solve problems with content risks or sexting, but less appropriate with respect to online bullying. Finally, *talking with friends* generally loads on the communicative factor, but (preventively) *talking with friends* about *meeting strangers* is part of the peer support factor, which suggests that peers play a specific role when children use the Internet to meet new people.

### *Classical multidimensional scaling*

Looking at the MDS model for *content risks*, the Kruskal's stress function (.07) shows that the two-dimensional model adequately represents the data. The RSQ value of .97 shows a high proportion of explained variance, so we conclude that the MDS model for content risks has a good fit. In the Euclidean distance model (see Fig. 1), we clearly discern three groups or

[2] In order to be able to perform these transformations, we first add a constant (1) to the dependent coping variable. More details on which variables have been transformed and which ANOVAs use transformed coping variables are included in Table 4.

[3] Girls are over-represented in the older age group (13–16 year-olds) as schools offering education which is more popular among females (e.g. humanities, social sciences) more often agreed to participate. Therefore, we created a weight variable based on gender, age and education type.

**Table 3**
PCA structures for each type of online risk, with KMO-measure, factor loadings, PVE, and reliability score (N = 2046).[a]

| | Online bullying | Sexual images | Shocking images | Meeting strangers | Sexting | Privacy misuse |
|---|---|---|---|---|---|---|
| KMO measure | .69 | .75 | .80 | .75 | .82 | .75 |
| **Proactive problem-solving strategies** | **PVE = 14.25** | **PVE = 24.58** | **PVE = 28.59** | **PVE = 26.56** | **PVE = 30.04** | **PVE = 27.55** |
| | **α = .53** | **α = .70** | **α = .76** | **α = .68** | **α = .78** | **α = .71** |
| Change privacy settings | .79 | .68 | .70 | .79 | .71 | .81 |
| Block contact person | .72 | .74 | .78 | .79 | .71 | .79 |
| Protect personal data | .59 | .64 | .62 | .68 | .73 | .73 |
| Delete images or messages | | .68 | .73 | .67 | .70 | .57 |
| Click away | | .56 | .61 | | .74 | |
| **Communicative strategies** | **PVE = 10.25** | **PVE = 12.78** | **PVE = 8.49** | **PVE = 10.49** | **PVE = 12.76** | **PVE = 12.29** |
| | **α = .35** | **α = .46** | **α = .48** | **α = .53** | **α = .55** | **α = .46** |
| Talk with friends | .82 | −.67 | .72 | | −.63 | |
| Talk with parents | .71 | −.66 | .70 | .68 | −.73 | .72 |
| Seek online support | | −.61 | .49 | .73 | −.71 | .72 |
| Go offline for a while | | | | .70 | −.43 | .67 |
| **Indifference** | **PVE = 12.29** | **PVE = 9.94** | **PVE = 9.91** | **PVE = 11.47** | **PVE = 10.31** | **PVE = 14.34** |
| | **α = .41** | **α = .33** | **α = .35** | **α = .42** | **α = .36** | **α = .54** |
| Don't care about what happened | .81 | .82 | .83 | .80 | .83 | .80 |
| Hope it goes away by itself | | .71 | .69 | .76 | .72 | .70 |
| Ignore what happened | .74 | | | | | .59 |
| **Avoidance strategies** | **PVE = 24.62** | **PVE = 9.21** | **PVE = 11.59** | | | |
| | **α = .67** | **α = .72** | **α = .72** | | | |
| Go away from device | .80 | −.85 | .82 | | | |
| Go offline for a while | .76 | −.79 | .79 | | | |
| Click away | .73 | | | | | |
| **Peer support** | | | | **PVE = 11.71** | | |
| | | | | **α = .55** | | |
| Take a friend to meeting | | | | −.83 | | |
| Talk with friends | | | | −.78 | | |

[a] PCA: principal component analysis; KMO: Kaiser–Meyer–Olkin measure; PVE: percentage of explained variance.

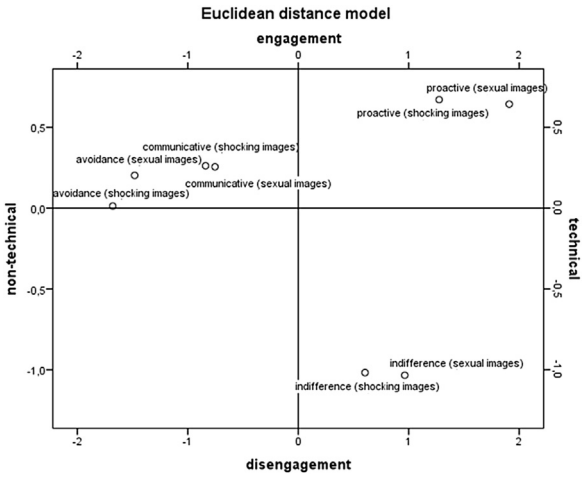


**Fig. 1.** Euclidean Distance model for content risks (sexual images, shocking images), N = 1994.

clusters of coping strategies. The vertical dimension reflects engagement versus disengagement, with attitudes of indifference being opposed to other types of strategies that require more engagement or action. The horizontal dimension opposes technical versus non-technical measures, with proactive strategies such as blocking senders or changing privacy settings at the technical side, and talking to somebody or going away from the device as non-technical coping strategies. Particularly striking in this MDS model is that communicative and avoidance strategies are situated in the same quadrant, illustrating how communicative and avoidance tactics are closely connected to each other, also for content risks. It is highly likely that (temporarily) going away from the online platform is combined with approaching another person to talk about the unpleasant situation. A similar tendency was found in the PCA output for contact risks, where *going offline for a while* was part of the communicative component. These findings confirm the assumption that actively avoiding certain unwelcome content is conceptually different from mere disengagement or indifference.

Looking at the *contact/conduct risks*, a score of .13 on the Kruskal's stress function refers to the model as a good representation of the data. With an RSQ value of .92 the proportion of explained variance is sufficient and we conclude there is a good model fit. Four groups or clusters of coping strategies are discerned in the Euclidean distance model (see Fig. 2). The vertical dimension opposes disengagement to engagement, like indifference versus active involvement with others in dealing with a problematic situation. The horizontal dimension reflects the distinction between technical and non-technical measures, whereby technical measures are more self-oriented and aimed at obtaining a practical solution, while non-technical measures are rather other-oriented (peers or adults) and aimed at emotional support. Once more, behavioral avoidance (in online bullying) is closely connected to communicative strategies, and how mere indifference is distinguished from other types of strategies. Clearly, behavioral avoidance should not be conceptualized as a passive coping approach.

*Comparisons for gender and age*

For *communicative coping*, there are significant main effects of gender and age across online risks. Girls and younger children are more likely to talk about unpleasant situations online (see Table 4). The interaction effect was only significant for online bullying: while girls remain communicative at all ages if they were/would be bullied online, boys, on the contrary, become less talkative when growing older. Looking at *proactive coping*, we see main effects of gender and age when dealing with online bullying, sexual images, and privacy misuse. Girls and older teenagers tend to behave more proactively in these situations. When dealing with shocking images and strangers, there is only a main effect of gender, i.e. girls being more proactive. The same gender effect was found for sexting. The outcomes for *behavioral avoidance* are not consistent across online risks. There is a main effect of gender and age on coping with online bullying, i.e. girls and younger children being more avoidant. For sexual images we came across a main effect of age only, with younger children using more avoidant coping. Shocking images yield significant main effects of gender and age, and a significant interaction effect. Overall, girls behave more avoidant. The difference between boys and girls is stronger among the youngest. In the group of 10–12-year olds, the girls are far more likely to use behavioral avoidance when confronted with shocking images compared to older girls. *Indifference* is mainly age-related. When dealing with shocking images, strangers, and privacy misuse, we only find a significant age effect. Younger children turn out to be more indifferent in these situations. When confronted with sexual images, there are no significant main effects, there is only a significant interaction effect. In the younger age group, boys feel more indifferent than girls, while in the older age group girls claim to be more indifferent than boys. Online bullying yields a main effect of gender and a significant interaction effect. Overall, boys feel more indifferent if they are/would be victimized. When growing older, boys become even more indifferent, while girls' sense of indifference decreases as they grow older. Seeking *peer support* when meeting strangers produces main effects of gender and age, and a significant interaction effect. Overall, girls and older children are more focused on peer support. When growing older, girls' increase in support seeking is even more pronounced.

## Conclusion

Our first aim was to get more insight into the role of behavioral avoidance in coping with online risks. Proactive coping, communicative coping and indifference are identified as cross-risk factors. Behavioral avoidance is a separate factor in the case of online bullying and content risks, which is a first indication that it should be distinguished from indifference. Deliberately deciding to (temporarily) avoid specific online content, platforms or services should be considered as an active

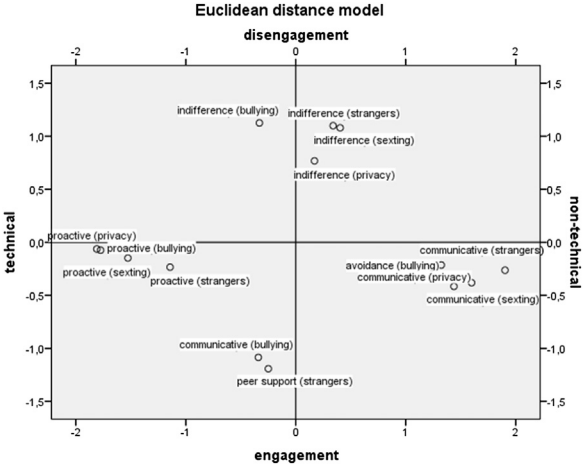


**Fig. 2.** Euclidean Distance model for contact/conduct risks (online bullying, meeting strangers, sexting, privacy misuse), N = 1050.

**Table 4**
Results for two-way independent ANOVA or independent t-test.

| | | | 10–12 years old | | 13–16 years old | | Factor | *df* | Two-way ANOVA | Effect size |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | *M* | *SD* | *M* | *SD* | | | *F* or *t*-value | $\eta^2$ |
| Behavioral avoidance | Online bullying[a] (N = 1941) | Boys | .65 | .42 | .56 | .50 | Gender | 1 | F = 31.24*** | .016 |
| | | Girls | .79 | .40 | .63 | .38 | Age group | 1 | F = 46.34*** | .023 |
| | | | | | | | Gender × age | 1 | F = 3.27 | .002 |
| | Sexual images[a] (N = 1123) | Boys | .23 | .64 | .08 | .78 | Gender | 1 | F = .74 | .001 |
| | | Girls | .29 | .58 | .09 | .59 | Age group | 1 | F = 24.67*** | .022 |
| | | | | | | | Gender × age | 1 | F = .50 | .000 |
| | Shocking images[a] (N = 1924) | Boys | .47 | .52 | .33 | .53 | Gender | 1 | F = 18.84*** | .010 |
| | | Girls | .62 | .48 | .37 | .43 | Age group | 1 | F = 86.380*** | .043 |
| | | | | | | | Gender × age | 1 | F = 6.44* | .003 |
| Communicative coping | Online bullying[b] (N = 1936) | Boys | 1.59 | .95 | 1.24 | 1.11 | Gender | 1 | F = 172.84*** | .082 |
| | | Girls | 1.97 | .80 | 1.92 | .77 | Age group | 1 | F = 26.32*** | .013 |
| | | | | | | | Gender × age | 1 | F = 14.60*** | .007 |
| | Sexual images (N = 1925) | Boys | 1.06 | .82 | .63 | .84 | Gender | 1 | F = 86.76*** | .043 |
| | | Girls | 1.32 | .73 | 1.01 | .70 | Age group | 1 | F = 120.00*** | .059 |
| | | | | | | | Gender × age | 1 | F = 3.30 | .002 |
| | Shocking images (N = 1924) | Boys | 1.02 | .77 | .67 | .80 | Gender | 1 | F = 83.38*** | .042 |
| | | Girls | 1.25 | .72 | 1.02 | .65 | Age group | 1 | F = 83.52*** | .042 |
| | | | | | | | Gender × age | 1 | F = 3.58 | .002 |
| | Strangers[b] (N = 1923) | Boys | .95 | .78 | .60 | .85 | Gender | 1 | F = 24.26*** | .012 |
| | | Girls | 1.17 | .75 | .71 | .66 | Age | 1 | F = 149.04*** | .072 |
| | | | | | | | Gender × age | 1 | F = 2.93 | .002 |
| | Sexting (N = 985) | Boys | N/A | N/A | .63 | .59 | Gender | 962.19 | t = 8.20*** | N/A |
| | | Girls | N/A | N/A | .95 | .64 | | | | |
| | Privacy misuse (N = 1930) | Boys | 1.00 | .80 | .64 | .83 | Gender | 1 | F = 43.60*** | .022 |
| | | Girls | 1.24 | .72 | .84 | .66 | Age | 1 | F = 135.24*** | .066 |
| | | | | | | | Gender × age | 1 | F = .29 | .000 |
| Proactive coping | Online bullying (N = 1941) | Boys | 1.93 | .77 | 2.09 | .98 | Gender | 1 | F = 29.67*** | .015 |
| | | Girls | 2.08 | .80 | 2.31 | .60 | Age | 1 | F = 32.19*** | .016 |
| | | | | | | | Gender × age | 1 | F = 1.06 | .001 |
| | Sexual images[b] (N = 1925) | Boys | 1.92 | .84 | 2.04 | .93 | Gender | 1 | F = 40.28*** | .021 |
| | | Girls | 2.11 | .71 | 2.29 | .59 | Age | 1 | F = 18.98*** | .010 |
| | | | | | | | Gender × age | 1 | F = .94 | .000 |
| | Shocking images[b] (N = 1924) | Boys | 1.73 | .83 | 1.75 | 1.02 | Gender | 1 | F = 34.41*** | .018 |
| | | Girls | 1.95 | .75 | 1.96 | .75 | Age | 1 | F = .08 | .000 |
| | | | | | | | Gender × age | 1 | F = .01 | .000 |
| | Strangers[b] (N = 1923) | Boys | 1.79 | .88 | 1.84 | 1.07 | Gender | 1 | F = 24.69*** | .013 |
| | | Girls | 1.99 | .81 | 2.02 | .77 | Age | 1 | F = 1.02 | .001 |
| | | | | | | | Gender × age | 1 | F = .08 | .000 |
| | Sexting (N = 985) | Boys | N/A | N/A | 1.89 | .80 | Gender | 969.67 | t = 9.18*** | N/A |
| | | Girls | N/A | N/A | 2.32 | .66 | | | | |
| | Privacy misuse[b] (N = 1930) | Boys | 1.93 | .84 | 2.13 | .98 | Gender | 1 | F = 22.86*** | .012 |
| | | Girls | 2.09 | .78 | 2.32 | .65 | Age | 1 | F = 36.11*** | .018 |
| | | | | | | | Gender × age | 1 | F = .17 | .000 |
| Indifference | Online bullying[a] (N = 1936) | Boys | .95 | .44 | .98 | .45 | Gender | 1 | F = 19.77*** | .010 |
| | | Girls | .92 | .37 | .86 | .35 | Age | 1 | F = .81 | .000 |
| | | | | | | | Gender × age | 1 | F = 5.93* | .003 |
| | Sexual images (N = 1923) | Boys | 1.74 | .94 | 1.59 | 1.10 | Gender | 1 | F = 1.54 | .001 |
| | | Girls | 1.57 | .91 | 1.65 | .79 | Age | 1 | F = .91 | .000 |
| | | | | | | | Gender & Age | 1 | F = 8.03** | .004 |
| | Shocking images[a] (N = 1903) | Boys | .88 | .46 | .85 | .47 | Gender | 1 | F = 1.08 | .001 |
| | | Girls | .87 | .40 | .82 | .35 | Age | 1 | F = 5.29* | .003 |
| | | | | | | | Gender × age | 1 | F = .28 | .000 |
| | Strangers[a] (N = 1916) | Boys | .90 | .47 | .84 | .53 | Gender | 1 | F = 2.91 | .002 |
| | | Girls | .86 | .41 | .81 | .33 | Age | 1 | F = 7.10** | .004 |
| | | | | | | | Gender × age | 1 | F = .04 | .000 |
| | Sexting (N = 984) | Boys | N/A | N/A | 1.51 | .89 | Gender | 982.11 | t = 3.35** | N/A |
| | | Girls | N/A | N/A | 1.33 | .81 | | | | |
| | Privacy misuse[a] (N = 1930) | Boys | .91 | .40 | .87 | .46 | Gender | 1 | F = .31 | .000 |
| | | Girls | .91 | .34 | .84 | .32 | Age | 1 | F = 10.97** | .006 |
| | | | | | | | Gender × age | 1 | F = .55 | .000 |
| Peer support | Strangers (N = 1917) | Boys | 1.17 | .99 | 1.40 | 1.23 | Gender | 1 | F = 84.22*** | .042 |
| | | Girls | 1.49 | .94 | 1.90 | .87 | Age | 1 | F = 49.75*** | .025 |
| | | | | | | | Gender × age | 1 | F = 4.04* | .002 |

***p < .001, **p < .01, *p < .05.
[a] ANOVA with transformed coping variable: natural log transformation of 1+ (score on coping variable).
[b] Natural log transformation does not yield significant outcome on Levene's Test, ANOVA is proceeded with original untransformed coping variable.

coping strategy, while indifference denotes a passive attitude: lack of interest for what happened, lack of motivation to actively tackle the problem (Hernandez, Vigna, & Kelley, 2010; Kochenderfer-Ladd & Skinner, 2002; Parris et al., 2012; Śleglova & Černá, 2011; Smith et al., 2008; Völlink, Bolman, Dehue, et al., 2013). Looking at contact risks (i.e. meeting strangers, sexting or privacy misuse) the PCA findings do not consider avoidance tactics as a separate component of coping. Nevertheless, the inclusion of 'going offline for a while' in a component with 'talking about it with somebody', also suggests that behavioral avoidance and communicative strategies are often combined. Both MDS-models confirm this close connection between behavioral avoidance and communicative coping, a conclusion that also emerged in qualitative research on children's coping strategies (Vandoninck et al., 2014).

Our second intention was to clarify the underlying theoretical dimensions of coping strategies, in order to have a better understanding of their interrelations and connections. Across types of risks, two dimensions of (dis)engagement and (non)-technical measures can be identified. However, risk-specific nuances remain. For content risks we see that proactive strategies score high on both the technical and engagement axis. For contact/conduct risks, proactive strategies are highly technical, but only moderate on the engagement-axis. Communicative strategies in case of cyberbullying and peer support in case of contact with strangers imply a higher level of engagement, possibly because active involvement of others is more required in these situations. Examples of such high-engagement strategies are asking a friend to accompany on a meeting, talking in person to bullies or bystanders to clarify the situation and avoid escalation, or asking for an intervention from parents or other caretakers (Vandoninck et al., 2014).

When looking at gender and age differences, our findings confirm that girls are more communicative and proactive and peer-oriented across types of online risks, and that younger children more often display avoidant or passive coping behavior (Livingstone et al., 2011). Interaction effects are risk-specific, illustrating how coping with online risks is a complex matter that varies according to particular characteristics of young people. For online bullying, we conclude that boys become even less communicative and more indifferent as they grow older. For content risks, differences between boys and girls are more pronounced in the youngest age group, with pre-adolescent girls displaying more behavioral avoidance (of shocking images) and pre-adolescent boys being more indifferent (towards sexual images).

## Discussion

Our findings make a strong case for considering *behavioral avoidance* as an active coping approach that can be helpful in dealing with unpleasant situations. Outcomes are in line with the qualitative study conducted by the authors, concluding that behavioral avoidance is evaluated as an effective strategy in situations that are not extremely harmful (i.e. content risks), because it does not require a lot of resources or complex skills to put the stressor down. Knowledge of certain cues that predict potentially disturbing content is a necessary precondition, however, a skill that mostly learned through experience (Vandoninck et al., 2014, p. 122). With several examples of children who combine going offline for a while with talking to their parents or peers in a later stage, this confirms the close conceptual connection between behavioral avoidance and communicative coping in our MDS-models and assumptions about a combined and stepwise coping approach (Vandoninck et al., pp. 112–114). Nevertheless, some studies are less optimistic about avoidance coping because of its association with decreased emotional well-being, for example among victims of online bullying (Aspinwall & Taylor, 1997; Völlink, Bolman, Eppingbroek, et al., 2013). Known as the most 'harmful' online risk with a potentially devastating impact on youth's emotional well-being, behavioral avoidance is not perceived as a very effective strategy for victims of cyberbullying. Support seeking and proactive measures (e.g. blocking the sender) are evaluated as more helpful (d'Haenens et al., 2013; Vandoninck et al., 2014, p. 80).

We argue to consider *indifference* as conceptually distinct from behavioral avoidance. Qualitative findings confirm that indifferent children do not perceive the situation as (potentially) harmful, arguing for example that strangers would not be interested in their profile or that 'nothing special' is shared online. Furthermore, their indifferent attitude is associated with a belief that 'nothing can be done' and that the unpleasant situation is 'part of life'. Hence, they do not undertake any efforts to avoid the stressor, which is fundamentally different from active attempts to avoid a (potentially) problematic situation. When disturbances are only minor and not likely to escalate, children argue they do not want to waste resources or energy in situations that are 'not worth worrying about' and conclude that a passive attitude turns of to be a helpful tactic. Examples are instances of teasing among peers or unexpected 'friend requests' from strangers (Vandoninck et al., 2014, pp. 97–106).

*Developmental processes* have an impact on children's coping. During adolescence, a shift in focus takes place from parents to peers, so maintaining close relationships with peers and constructing collective identities become essential tasks (Arnett, 2010; Taylor & Harper, 2003). Younger children are less concerned about (privacy) issues on social media because active participation in online communities and peer cultures is less important for them, so staying away for a while from a platform or application can be an adequate strategy for them (Ito et al., 2009; Lenhart, Ling, Campbell, & Purcell, 2010). For adolescents, however, peer interactions on social media are often extremely important and 'staying or going away' is simply not an option, urging them to move over to highly engaged (proactive) coping strategies (Vandoninck et al., 2014, p. 120). As children grow older, cognitive capacities increase and they acquire more digital skills, which facilitate the uptake of (technical) problem-solving coping strategies (Gardner & Steinberg, 2005; Holodynski & Friedlmeier, 2006; James, 2014). The youngest age group (10–11 year-olds) was not taken into account in the CMDS-model for contact/conduct risks, because questions on sexting were omitted for this group. As contact/conduct risks are perceived as more harmful, developmental tasks during

adolescence may reinforce the establishment of a separate cluster of high-engagement coping-strategies in the CMDS model for contact/conduct risks, aimed at preserving or restoring positive peer interaction.

Looking at the role of *gender*, boys are less talkative and proactive no matter the online risk under study, and act more indifferently when confronted with online bullying and sexual risks. Possibly boys adopt less 'engaged' coping because they feel less upset about these issues compared to girls. This corresponds with previous indications that young people who report lower levels of negative feelings in connection with unwelcome online situations are less motivated to deal with the problem through active coping approaches, being more likely to resign themselves to the situation (Hernandez et al., 2010; Jacobs, Dehue, Völlink, & Lechner, 2014). The combination of these elements, i.e. strong peer-orientation, more cognitive capacities and higher perceived harm may explain why girls in the oldest age group (13–16 years old) have a more pronounced preference for highly engaged coping strategies, particularly when dealing with online bullying (Gardner & Steinberg, 2005; James, 2014). The absence of a consistent pattern of interaction effects across types of online risks suggests that efforts to support children in dealing successfully with online risks should take into account the specificities of each target group and each type of online risk. Furthermore, our findings indicate that adolescent girls' alleged vulnerability to online risks is not a straightforward matter and should be nuanced. Teenage girls report more negative emotions, but this seems to motivate them to take up more 'engaged' coping strategies and actively tackle the problem (d'Haenens et al., 2013; Tenenbaum et al., 2011). Clearly, age and gender play a meaningful role in young people's coping processes. Although beyond the scope of this article, we recognize that additional elements may have an impact on how youth deals with online risks.

Besides gender and age, also *previous experiences with stress, personality and social context* play a role in children's coping preferences and whether a given coping approach will be more or less beneficial for the child's (emotional) well-being and resilience building (Masten, 2007; Skinner & Zimmer-Gembeck, 2007). Strong relationships with peers and parents seem to play a crucial role in the uptake of high-engagement coping strategies, especially in tackling contact/conduct risks such as online bullying. A supportive and communicative environment where children can build and rely on could reduce disengagement and motivate youngsters to involve others in solving the problem. Moreover, by modeling, teaching, coaching, comforting and assisting, parents and other caregivers have a strong impact on a child's coping resources and skills. In their own responses and actions to a potential threat, parents provide an example to their children on how to deal with unpleasant situations (Kliewer, Sandler, & Wolchik, 1994; Skinner & Zimmer-Gembeck, 2007).

Concerning the *coping items* used in the survey, we combined existing scales on youngsters' coping (Livingstone et al., 2011; Maybery et al., 2009) with the results of an open, written question about what children would do in the case of an unpleasant online experience. Involving young people in the item-generation phase is recommended as this would increase the validity of the scale (Hernandez et al., 2010). However, this has consequences for the comparability of the findings with those of other studies on children's coping with (online) risks since a specific and distinct set of coping strategies was identified and no existing coping scale was validated. Nevertheless, we believe that integrating risk-specific coping items on an inductive basis will help us both understand how children cope with specific online risks and explore the role of avoidance coping in dealing with unpleasant online situations.

Reliability analyses show that *alpha values* are rather low for the factors concerning communicative coping, indifference and peer support (see Table 3), which is not exceptional for psychological constructs (Kline, 1999), certainly not when a low number of items are loading on factors (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). In addition, alpha values may decrease because of the high specificity of individual coping items, suggesting that combinations of coping responses often occur across factors (Billings & Moos, 1981; Compas et al., 2001). Looking at other studies about developing and validating scales on children's coping (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000; Dumont & Provost, 1999; Hernandez et al., 2010; Maybery et al., 2009), additional clues about internal validity of the communication factor and possible implications for the outcomes were found. First of all, items on communicative coping or support seeking do not always load on a separate coping factor and seem to overlap with both proactive and avoidance forms of coping. Indeed, children can turn to others for both practical help and for emotional support (Vandoninck et al., 2014), which is reflected in our MDS-model, with communicative and proactive strategies situated both around the same level on the vertical engagement-axis. Second, the 'indifference' factor actually encompasses several sub-categories of disengagement, such as accommodation, submission and justification (Skinner & Zimmer-Gembeck, 2007). Including a broader set of items on indifference would probably cover more adequately the meaning of this concept. However, in developing surveys for children, it is recommended to provide short lists of items taking into account their ability to read and interpret the information (Maybery et al., 2009). Since we included six types of online risks in the survey, this put constraints on the number of coping items we could include. Calculating the mean score of the original coping items loading onto each coping factor, we created newly latent coping variables at interval level that were used in the follow-up MDS analysis procedures.

In conclusion, these findings are useful for researchers developing and validating coping scales aimed at children and adolescents. While we targeted online situations, several parallels with coping in 'offline' situations are visible, which makes the results valuable for studies on generic coping with unpleasant situations as well. Other stakeholders such as policy makers, educators or organizations dedicated to awareness-raising should find in this study reason to favor a risk-specific approach and rethink the role of behavioral avoidance tactics in dealing with online bullying and online content risks.

## Acknowledgments

This study was conducted within a research project supported by the Flemish FWO, 800x600 G052111N (fund for scientific research) http://www.fwo.be/en/.

## References

Arnett, J. (2010). *Adolescence and emerging adulthood: A cultural approach* (4th ed.). Boston, CT: Prentice Hall.
Aspinwall, L., & Taylor, S. (1997). A stitch in time: self-regulation and proactive coping. *Psychological Bulletin, 121*(3), 417–436.
Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine, 4*(2), 139–157.
Bolman, C., Eppingbroek, A., & Völlink, T. (2012). Emotion-focused coping worsens depressive feelings and health complaints in cyber-bullied children. *Human Communication Research, 37*(2), 174–206.
Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267–283.
Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: problems, progress and potential in theory and research. *Psychological Bulletin, 127*(1), 87–127.
Connor-Smith, J., Compas, B., Wadsworth, M., Thomsen, A., & Saltzman, H. (2000). Responses to stress in adolescence: measurement of coping and involuntary stress responses. *Journal of Consulting and Clinical Psychology, 68*, 976–992.
d'Haenens, L., Vandoninck, S., & Donoso, V. (2013). *How to cope and build online resilience?* London: EU Kids Online Network.
Dumont, M., & Provost, M. (1999). Resilience in adolescents: protective role of social support, coping strategies, self-esteem and social activities on experience of stress and depression. *Journal of Youth and Adolescence, 28*(3), 343–363.
Fiske, S., & Taylor, S. (1991). *Social cognition*. New York: McGraw-Hill.
Folkman, S., & Moskowitz, J. (2004). Coping: pitfalls and promise. *Annual Review of Psychology, 55*, 745–775.
Frydenberg, E., & Lewis, R. (1991). Adolescent coping: the different ways in which boys and girls cope. *Journal of Adolescence, 14*, 119–133.
Gardner, M., & Steinberg, L. (2005). Peer influence on risk taking, risk preference and risky decision making in adolescence and adulthood: an experimental study. *Developmental Psychology, 41*(4), 625–635.
Giguère, G. (2006). Collecting and analyzing data in multidimensional scaling experiments: a guide for psychologists using SPSS. *Tutorials in Quantitative Methods for Psychology, 2*(1), 26–37.
Hernandez, B. C., Vigna, J. F., & Kelley, M. L. (2010). The youth coping responses inventory: development and initial validation. *Journal of Clinical Psychology, 66*(9), 1008–1025.
Holodynski, M., & Friedlmeier, W. (2006). *Development of emotions and emotion regulation*. New York: Springer.
Hout, M., Papesh, M., & Goldinger, S. (2013). Multidimensional scaling. *Wiley Interdisciplinary Reviews: Cognitive Science, 4*(1), 93–103.
Ito, M., Baumer, S., Bittani, M., Boyd, D., Cody, R., Herr-Stephenson, B., et al. (2009). *Hanging out, messing around and geeking out: Kids living and learning with new media*. Cambridge, MA: MIT Press.
Jacobs, N., Dehue, F., Völlink, T., & Lechner, L. (2014). Determinants of adolescents' ineffective and improved coping with cyberbullying: a Delphi study. *Journal of Adolescence, 37*, 373–385.
James, C. (2014). *Disconnected. Youth, new media and the ethics gap*. Cambridge, MA: The MIT Press.
Kliewer, W., Sandler, I., & Wolchik, S. (1994). Family socialization of threat appraisal and coping: coaching, modeling and family context. In K. Hurrelman, & F. Nestmann (Eds.), *Social networks and social support in childhood and adolescence* (pp. 271–291). Berlin: de Gruyter.
Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London: Routledge.
Kochenderfer-Ladd, B., & Skinner, K. (2002). Children's coping strategies: moderators of the effects of peer victimization? *Developmental Psychology, 38*(2), 267–278.
Lazarus, R., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer-Verlag.
Lenhart, A., Ling, R., Campbell, S., & Purcell, K. (2010). *Teens and mobile phones*. Washington, D.C.: Pew Research Center.
Livingstone, S., Haddon, L., Görzig, A., & Olafsson, K. (2011). *Risks and safety on the internet: The perspective of European children: Full findings and policy implications from the EU Kids Online survey of 9–16-year-olds and their parents in 25 countries*. London: EU Kids Online Network.
Masten, A. (2007). Resilience in developing systems: progress and promise as the fourth wave rises. *Development and Psychopathology, 19*(3), 921–930.
Masten, A., & Gerwitz, A. (2006). Vulnerability and resilience in early child development. In K. McCartney, & D. Philips (Eds.), *Blackwell handbook of early childhood development* (pp. 22–43). Oxford and Carlton: Blackwell Publishing.
Maybery, D., Steer, S., Reupert, A., & Goodyear, M. (2009). The kids coping scale. *Stress and Health, 25*, 31–40.
Parris, L., Varjas, K., Meyers, J., & Cutts, H. (2012). High school students' perceptions of coping with cyberbullying. *Youth & Society, 44*(2), 284–306.
Pearlin, L., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 19*(1), 2–21.
Riebel, J., Jäger, R. S., & Fischer, U. C. (2009). Cyberbullying in Germany – an exploration of prevalence, overlapping with real life bullying and coping strategies. *Psychology Science Quarterly, 51*, 298–314.
Roth, S., & Cohen, L. J. (1986). Approach, avoidance and coping with stress. *American Psychologist, 41*, 813–819.
Skinner, E., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: a review and critique of category systems for classifying ways of coping. *Psychological Bulletin, 129*, 216–269.
Skinner, E., & Zimmer-Gembeck, M. (2007). The development of coping. *Annual Review of Psychology, 58*, 119–126.
Šleglova, V., & Černá, A. (2011). Cyberbullying in adolescent victims: perception and coping. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 5*(2).
Šmahel, D., & Wright, F. M. (2014). *The meaning of online problematic situations for children: Results of qualitative cross-cultural investigation in nine European countries*. London: EU Kids Online Network.
Smith, C., & Kirby, L. (2009). Putting appraisal in context: toward a relational model of appraisal and emotion. *Cognition and Emotion, 23*, 1352–1372.
Smith, P., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: its nature and its impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*, 376–385.
Taylor, A., & Harper, R. (2003). The gift of the grab? A design oriented sociology of young people's use of mobiles. *Journal of Computer Supported Cooperative Work, 12*(3), 267–296.
Tenenbaum, L. S., Varjas, K., Meyers, J., & Parris, L. (2011). Coping strategies and perceived effectiveness in fourth through eighth grade victims of bullying. *School Psychology International, 32*(3), 263–287.
Vandebosch, H., Van Cleemput, K., Mortelmans, D., & Walrave, M. (2006). *Cyberpesten bij jongeren in Vlaanderen* [*Cyberbullying among youngsters in flanders*]. Brussels: Vlaams Instituut voor Wetenschappelijk en Technologisch Aspectenonderzoek.
Vandoninck, S., Barbovschi, M., d'Haenens, L., & Cernikova, M. (2014). Preventive measures and coping. In D. Smahel, & M. Wright (Eds.), *The meaning of online problematic situations for children: Results of qualitative cross-cultural investigation in nine European countries* (pp. 77–125). London: EU Kids Online Network.
Vandoninck, S., & d'Haenens, L. (2014). Ways to avoid problematic situations and negative experiences: children's preventive measures online. *Communications: the European Journal of Communication Research, 39*(3), 261–282.

Vandoninck, S., d'Haenens, L., & Segers, K. (2012). Coping and resilience: children's responses to online risks. In S. Livingstone, L. Haddon, & A. Görzig (Eds.), *Children, risk and safety on the internet. Research and policy challenges in comparative perspective* (pp. 205–218). Bristol: The Policy Press.

Völlink, T., Bolman, C., Dehue, F., & Jacobs, N. (2013). Coping with cyberbullying: differences between victims, bully-victims and children not involved in bullying. *Journal of Community & Applied Social Psychology, 23*, 7–24.

Völlink, T., Bolman, C. A. W., Eppingbroek, A., & Dehue, F. (2013). Emotion-focused coping worsens depressive feelings and health complaints in cyberbullied children. *Journal of Criminology, 2013*, 10. http://dx.doi.org/10.1155/2013/416976. Article ID 416976.

Wolak, J., Mitchell, K. J., & Finkelhor, D. (2007). Does online harassment constitute bullying? An exploration of online harassment by known peers and online-only contacts. *Journal of Adolescent Health, 41*, S51–S58.

Ybarra, M., Mitchell, K., Wolak, J., & Finkelhor, D. (2006). Examining characteristics and associated distress related to internet harassment: findings from the second youth internet safety survey. *Pediatrics, 48*, 1169–1177.

Youn, S. (2005). Teenagers' perceptions of online privacy and coping behaviors: a risk–benefit appraisal approach. *Journal of Broadcasting & Electronic Media, 49*(1), 86–110.