

Empathy and Callous–Unemotional Traits in Different Bullying Roles: A Systematic Review and Meta-Analysis

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Abstract

Bullying is an extremely damaging type of violence that is present in schools all over the world, but there are still many gaps in knowledge regarding different variables that might influence the phenomenon. Two promising research lines focus on empathy and callous–unemotional traits but findings from individual studies seem to be contradictory. This article reports the results of a systematic review and a meta-analysis on empathy and callous–unemotional traits in relation to school bullying based on 53 empirical reports that met the inclusion criteria. Bullying perpetration is negatively associated with cognitive (odds ratio [OR] = 0.60) and affective (OR = 0.51) empathy. Perpetration is also positively associated with callous–unemotional traits (OR = 2.55). Bully-victims scored low in empathy (OR = 0.57). There is a nonsignificant association between victimization and empathy (OR = 0.96), while the relationship between callous–unemotional traits and victimization is significant but small (OR = 1.66). Defenders scored high on cognitive (OR = 2.09) and affective (OR = 2.62) empathy. These findings should be taken into account in explaining and preventing bullying.

Keywords

bullying, empathy, callous–unemotional traits, meta-analysis

School bullying is a type of violence in which a student or a group of students intentionally and repeatedly harm other students who are physically or psychologically less strong. This aggressive behavior is perpetrated during long periods of time, there is an imbalance of power, and aggression becomes abuse (Smith & Brain, 2000). Children have different roles in bullying. Some become bullies who perpetrate this aggressive behavior. Some become victims who are repeatedly abused. Some become both bullies and victims (i.e., bully-victims). And some are bystanders who witness and sometimes intervene to prevent bullying. Among the bystanders, some students act as outsiders, others reinforce or assist the bully and there are also students who defend the victim (Salmivalli, 2010).

The international focus on school bullying research and the increasing number of antibullying programs (see a meta-analysis of the programs in Ttofi & Farrington, 2011) are understandable given the prevalence of bullying (Due et al., 2005; Nansel et al., 2001) and the deleterious concurrent and long-term effects that it has on children's psychosocial development (Gini & Pozzoli, 2013; Ttofi, 2015; Ttofi, Farrington, & Losel, 2012; Zych, Ortega-Ruiz, & Del Rey, 2015a). However, our scientific knowledge about explanatory variables for bullying behavior is still limited, and a synthesis of evidence from all relevant available studies is needed (Cook, Williams, Guerra, Kim, & Sadek, 2010). There are currently two promising interrelated research approaches focused on bullying. One

is focused on the relationship between bullying and empathy, and the other is focused on the relationship between bullying and callous–unemotional traits. The present systematic review and meta-analysis will provide a synthesis of existing research on the relationship between these two constructs and bullying behavior together with potential implications for policy and practice.

Empathy is a complex concept defined as “an emotional response that stems from another's emotional state or condition and is congruent with the other's emotional state or condition” (Eisenberg, Shea, Carlo, & Knight, 1991, p. 65). Thus, it has been defined as understanding the emotions of others (cognitive empathy) and sharing their emotional states (affective empathy) (Davis, 1983; Jolliffe & Farrington, 2004).

Callous–unemotional traits, on the other hand, have been defined as an affective dimension related to psychopathy (Frick

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& White, 2008) and are characterized by shallow affect and lack of empathy (Hare & Neumann, 2008). These traits include callousness related to low empathy and guilt, not caring about other people or one's own performance in tasks, and deficient affect (Frick, 2004). Thus, the concept can be understood, to some extent, as being opposite to empathy.

Empathic and callous-unemotional traits are highly negatively correlated (Muñoz, Qualter, & Padget, 2011). A research review conducted by Frick and White (2008) showed that callous-unemotional traits are related to severe and relatively stable aggression and antisocial behavior in children and adolescents. Also a systematic review and meta-analysis conducted by Jolliffe and Farrington (2004) showed that both cognitive and affective empathy were related to offending. School bullying is a specific and particularly damaging type of aggressive antisocial behavior. Even though research syntheses of different kinds of aggression shed some light on this topic, it is necessary to synthesize studies that focus specifically on empathy, callous-unemotional traits, and bullying. This article presents a thorough systematic review and meta-analysis on the association of bullying with both variables. It is hoped that findings from our meta-analysis will guide the development of future explanatory models of bullying behavior and will also feed into future intervention research to prevent bullying.

Empathy, Callous-Unemotional Traits, and School Bullying

Despite the notable variability in the conceptualization and measurement of these two personality traits (Frick & White, 2008; Jolliffe & Farrington, 2011), research suggests that empathic traits encourage prosocial or altruistic behaviors while callous-unemotional traits are linked to antisocial behaviors. A meta-analysis of neuroscientific studies shows that observing people in pain activates similar brain structures as the direct experience of pain (Lamm, Decety, & Singer, 2011). Research also shows that youth with aggressive conduct disorder display atypical empathic brain responses to images of people in pain (Decety, Michalska, Akitsuki, & Lahey, 2009). Thus, it seems reasonable to suggest that empathy would be related to aversive responses to another's pain. Therefore, people who score high in empathy and low in callous-unemotional traits would probably avoid causing pain in others and be more prosocial and less aggressive.

Findings on the relationship between bullying perpetration and empathy are contradictory. Gini, Albiero, Benelli, and Altoe (2007) found that low empathy was positively linked to bullying perpetration. Jolliffe and Farrington (2006b) showed that there was a negative relationship between affective empathy and bullying in girls but not in boys, whereas there was no relationship between cognitive empathy and bullying in either gender. However, Caravita, Di Blasio, and Salmivalli (2009) found that high cognitive empathy was actually related to more bullying whereas high affective empathy was related to less bullying.

In the case of victimization, findings are equally contradictory. A study conducted by Raskauskas, Gregory, Harvey, Rifshana, and Evans (2010) showed that victimization was not related to or predicted by empathy. Similarly, Kokkinos and Kipritsi (2012) reported that there was no relationship between the overall empathy and victimization but, when affective and cognitive aspects were analyzed separately, significant negative relationships were found between both types of empathy and victimization. On the other hand, Caravita, Di Blasio, and Salmivalli (2010) found that victimization was associated with higher affective empathy.

Bully-victims and bystanders have been studied less than bullies and victims. Within the group of bystanders of bullying incidents, defenders are considered very important because they potentially contribute to a decrease in this kind of violence by helping the victim. For example, Gini et al. (2007) found that high empathy was linked to altruistic behaviors such as helping the victim. Caravita et al. (2010) also found that defending the victim was related to higher affective empathy. Nevertheless, Barhight, Hubbard, and Hyde (2013) reported a nonsignificant relationship between affective empathy and defending. Bully-victims are characterized by lower empathy (Raskauskas et al., 2010), although other studies show no relationship between these two variables (Park, 2013).

All in all, individual studies provide contradictory results on how cognitive and affective aspects of empathy are related to different bullying roles. This variability in research findings could result from methodological and other differences across individual studies (e.g., different instruments used to measure empathy or bullying or different research designs). There is an urgent need for a synthesis of all available literature on this topic. Existing research on evaluations of antibullying programs shows that empathy is assumed to be an important explanatory variable for bullying behavior (Farrington & Ttofi, 2009; Polanin, Espelage, & Pigott, 2012). For example, Farrington and Ttofi (2009, pp. 21–52) provided detailed descriptions of 53 different evaluations of antibullying programs, some of which included the promotion of empathy. Specifically, fostering empathy was part of “Bullying Intervention in Secondary Schools” in Australia (Hunt, 2007), “Youth Matters” in the United States (Jenson & Dieterich, 2007), “Be-Prox” in Switzerland (Alsaker & Valkanover, 2001), “Ecological Antibullying Program” in Canada (Rahey & Craig, 2002), and “SAVE” in Spain (Ortega, Del-Rey, & Mora-Merchan, 2004).

This assumed causal relationship between empathy and bullying is of critical importance (Jolliffe & Farrington, 2011). To the extent that empathy is not related to bullying, then increases in empathy would not necessarily lead to decreases in bullying. We aim to synthesize existing research findings on the association between empathy and bullying.

We also aim to synthesize the existing literature on the association between callous-unemotional traits and bullying behavior. Although the research on callous-unemotional traits and bullying is very promising, the number of the studies on

this topic is still small. As expected, these personality traits were found to be positively associated with bullying perpetration, with most of the studies finding consistent results (Ciucci, Baroncelli, Franchi, Golmaryami, & Frick, 2014; Fanti & Kimonis, 2012, 2013; Muñoz, Qualter, & Padget, 2011). Victimization has rarely been studied and Ciucci and Baroncelli (2014) found that it was not related to most of the scales of callous–unemotional traits. On the other hand, another study found a positive relationship between victimization and callous–unemotional traits (Fanti & Kimonis, 2012). To our knowledge, the relationship between callous–unemotional traits and bully-victim status has not yet been studied. There is one study that found that defending the victim was negatively related to callous–unemotional traits (Crapanazo, Frick, Childs, & Terranova, 2011).

Previous Research Syntheses

A previous meta-analysis conducted by Mitsopoulou and Giovazolias (2015) included empathy as one of the personality characteristics that was related to bullying behavior. The focus of this review was on various personality traits, and this may explain the limited number of located studies on the association between empathy and bullying. The results showed that both cognitive and affective empathy were negatively related to bullying perpetration. Given the limited number of included studies (eight), effect sizes were not calculated for victimization. Gender was a significant moderator with the negative relationship between perpetration and cognitive or affective empathy being significantly stronger for girls.

Another review of the relationship between empathy and bullying (van Noorden, Haselager, Cillessen, & Bukowski, 2015) included a larger number of studies but did not meta-analyze the data and did not calculate standardized measures of association between empathy and involvement in different bullying roles. Narrative results in the van Noorden, Haselager, Cillessen, and Bukowski's (2015) review suggested that bullying perpetration was negatively related to cognitive and affective empathy, whereas victimization was negatively related to cognitive empathy only. Defending, on the other hand, seemed to be positively related to both dimensions. Even though this study provided valuable information on the topic, it is still necessary to calculate standardized effect sizes and investigate whether there are statistically significant associations among these variables. To the best of our knowledge, there is no previous systematic and meta-analytic review on the association of callous–unemotional traits with involvement in different bullying roles (see a systematic review of meta-analyses on bullying conducted by Zych, Ortega-Ruiz, & Del Rey, 2015b).

Current Study

The current study is an attempt to synthesize all available literature on how bullying is linked to empathy and callous–unemotional traits. Given that bullying is a dynamic phenomenon

involving different participants (Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996), a decision was made to look more specifically into the personality traits of children involved in different bullying roles, as bullies, victims, bully-victims, and defenders. The aim is to calculate standardized measures of association between empathy and different bullying roles and between callous–unemotional traits and different bullying roles.

Establishing the exact association between empathy and callous–unemotional personality traits and involvement in different bullying roles has potential implications for policy, practice and intervention research. For example, the design and implementation of programs should take into account the empathy of bullies and victims. Findings from this study could also suggest if bullying prevention programs should focus on increasing both types of empathy for children involved in bullying. They could also be helpful in gathering more information and suggestions for intervention with bully-victims, the category of children who are caught in the vicious cycle of both violence and victimization.

Method

This article presents a meta-analytic synthesis of relevant studies on the association of empathy and involvement in different bullying roles such as bullies, victims, bully-victims, and defenders. Since callous–unemotional traits may be seen as “opposite” to empathy, this article also presents a meta-analytic synthesis of relevant studies on the association of callous–unemotional traits with involvement of children in different bullying roles. The meta-analytic investigation is based on thorough systematic searches of the literature in an attempt to maximize the objective appraisal of all available evidence. Thus, systematic reviews are more thorough and less biased than traditional narrative reviews (Egger, Smith, & O'Rourke, 2001). Explicit inclusion and exclusion criteria were set ahead of searching and screening all manuscripts and an effort was also made to cover the grey literature (Wilson, 2009) by looking at databases of masters and PhD theses such as ProQuest and Ethos.

Thorough searches were conducted in a number of databases including Web of Science, Science Direct, Google Scholar, PubMed, and PsychInfo up to May 2015. A number of key words—in different combinations—were used including “callous–unemotional,” “empathy,” “bullying,” “aggression,” “aggressive,” “victimization,” “emotion,” “emotional intelligence,” and “emotional awareness.” The lists of references of relevant existing reviews were also carefully screened (e.g., Mitsopoulou & Giovazolias, 2015; van Noorden et al., 2015). For empathy, over 91 potentially relevant studies were located in Google Scholar (search in titles), 220 in the Web of Science (search in topics), 69 in PubMed (search in all fields), 25 in Science Direct (search in abstracts, titles, and key words), and 368 in PsychInfo (search in titles) although the overlap across databases should be noted. For callous–unemotional traits, 79 potentially relevant studies were located in Google Scholar

(search in titles), 29 in the Web of Science (search in topics), 10 in PubMed (search in all fields), 109 in Science Direct (search in all fields), and 38 in PsychInfo (search in titles). Titles and abstracts were screened and highly relevant studies (based on the abstract) were downloaded and carefully coded.

Criteria for Inclusion or Exclusion of Studies

The following criteria were set in advance of searching and screening:

1. To be included, the study should focus on school bullying, rather than school violence or aggression in general. Studies with measures of peer aggression, not referring specifically to bullying, were excluded (e.g., Bellmore, Ma, You, & Hughes, 2012).
2. Papers relating a measure of bullying with a measure of either callous–unemotional traits or empathy were included.
3. Studies were included when participants were children or adolescents of any age up to 18, at any educational level except higher or adult education, with studies conducted in nonschool settings (such as summer camps) being excluded (e.g., Cappadocia, Pepler, Cummings, & Craig, 2012).
4. Studies were included if they were conducted with mainstream students, so that the results may be generalizable to the wider mainstream school population. Studies focused specifically on special education settings were excluded.
5. Papers were included if they provided data on the statistical association of empathy/callous–unemotional traits and involvement in different bullying roles. When studies reported on the relationships between these variables and bullying in general (without specifying roles), the authors were emailed and asked for this information (e.g., Casas, Del Rey, & Ortega-Ruiz, 2013).
6. With regard to intervention studies, data based on the control group only were used (e.g., Williford, Boulton, & Jenson, 2014), because in the case of effective interventions levels of bullying may have been reduced and/or empathy increased, providing potentially biased results.
7. Studies were included when the results focused on traditional face-to-face bullying, rather than cyberbullying. Cyberbullying is a very particular form of bullying and there is a specific research tradition on the topic, which is usually measured through different specific instruments. Empathy or callous–unemotional traits in online interaction differ from school settings and are beyond the scope of the current study. If the article included both bullying and cyberbullying, only results for the former were taken into account (e.g., Casas et al., 2013).
8. Studies were included when it was possible to calculate effect sizes for children involved in bullying in different roles in comparison to children who were not involved in a certain role (i.e., bullies vs. nonbullies). The reference

category should be “noninvolved” children, so studies with other reference categories such as prosocial children (e.g., Warden & Mackinnon, 2003) were excluded, just as were studies that did not provide enough statistical information to enable the calculation of an effect size (e.g., Woods, Wolke, Nowicki, & Hall, 2009).

9. Studies with measures that did not focus explicitly on empathy but rather on emotions toward students who are being bullied, or thoughts and feelings toward cyberbullied peers (e.g., Steffgen & König, 2009), were excluded.
10. Only studies written in English and Spanish were included, given the fact that these are the main languages for scientific communication and the authors of this study are fluent in both.

The coding of includable studies looked at the statistical association between variables, the location and characteristics of the samples, type of publication, and type of the reporter (self-reports, peer reports, teacher reports, etc.). It also looked at the roles in bullying included in the study, and the instrument that was used to measure empathy or callous–unemotional traits. Coding was conducted by the first and the second author of this study. Detailed information is provided in Tables 1 and 2.

Dealing with Multiple Outcome Measures, Multiple Groups, and Multiple Publications

Some studies included results for different groups, for example, younger and older students (e.g., Ciucci & Baroncelli, 2014) or girls and boys (e.g., O’Brien, 2012). There were also studies which measured the outcome variable with different questionnaires or scales (e.g., Espelage, Mebane, & Adams, 2004). Some studies provided results for more than one time point (e.g., Stravinides et al., 2010). For all these studies, effect sizes were combined using the means of the selected outcomes, subgroups or time points, in order to have one effect size for each study. However, we did look at differences in measures of association according to gender (see later).

When more than one article was published by the same authors or group of authors, the participant section was analyzed to find out if the articles were utilizing the same samples. If this was true and the results did not vary among the studies, only one of the papers was included (e.g., Jolliffe & Farrington, 2006b, 2011). If the results did vary due to different outcome measures, for example, cognitive and affective empathy (Ciucci & Baroncelli, 2014) versus appraisal of others’ emotions (Baroncelli & Ciucci, 2014), then they were combined.

Results

A total of 49 studies reported in 53 publications provided data on the association of bullying and either empathy or callous–unemotional traits. Detailed information about these studies is available in Table 1 for empathy and Table 2 for callous–unemotional traits. Not all studies included results on all different participant roles in bullying (i.e., bullies, victims, bully-

Table 1. A Systematic Review of the Studies on Affective and Cognitive Empathy and Implication in Bullying.

Study Name and Location	Sociocultural Characteristics of the Sample	Number of Participants and Age/Grade	Role in Bullying and Type of Measure	Measures of Empathy
Barhight et al. (2013), the United States	60.2% European Americans, 18.2% Latino Americans, 11.5 African Americans, 3.6% Asian Americans, 3.6% mixed race/ethnicity, and 1.3% Native Americans	771 (415 girls and 356 boys), $M = 10.58$ (range from 9.25 to 12.59 years)	Victimization and defending (self-report and peer report)	Affective empathy 11-item subscale from Basic Empathy Scale (Jolliffe & Farrington, 2006a)
Baroncelli and Ciucci (2014)	91.12% of Italian children with 48.39% of the fathers and 55.96% of the mothers with high school or university degree.	529 (282 girls and 247 boys), $M = 12.6$; ($SD = 1.2$)	Perpetration and victimization (self-report)	"How I feel in different situations" Scale with 12 items (HIFDS; Feshbach et al., 1991) to measure cognitive and affective empathy.
Ciucci and Baroncelli (2014) Italy				An Appraisal of others' emotions subscale (10 items) of the Italian Version of Emotional Intelligence Scale (Ciucci, Menesini, Primi, Grazzani Gavazzi, & Antonietti, 2009)
Barchia and Bussey (2011), Australia	90% white Australian mostly from middle socioeconomic background	T1: 1285 (692 girls and 593 boys), Grades 7–10 (age 12–15) T2: 1177 (634 girls and 543 boys), Grades 7–10	Defending (includes also aggression and victimization but does not provide results in relation to empathy) (self-report)	Affective empathy measured with Bryant's (1982) empathy index (22 items)
Belacchi and Farina (2012), Italy	Working or middle socioeconomic background, with Italian as a first language	219 (93 girls and 113 boys), $M = 4.10$ ($SD = 8.33$)	Perpetration, victimization and defending (teacher report)	Cognitive empathy with perspective taking subscale and affective empathy with empathic concern subscales from Interpersonal Reactivity Index (IRI; Davis, 1983) with 7 items each
Caravita et al. (2009), Italy	37.3% with low-middle socioeconomic status, 47.9% with middle socioeconomic status, 7.6% with middle-high socioeconomic status	461 (227 girls and 234 boys), Primary schools: $M = 9.33$ ($SD = .50$) Secondary schools: 12.42 ($SD = .58$)	Perpetration and defending (self-report)	HIFDS Scale with 12 items (Bonino, Lo Coco, and Tani, 1998; Feshbach et al., 1991) to measure cognitive and affective empathy
Caravita et al. (2010), Italy	84% Italians and 16% of immigrants, 30.9% with low to medium socioeconomic status, 54.1% with medium socioeconomic status, and 7.2% with medium to high socioeconomic status	211 (113 girls and 98 boys), $M = 10.16$ ($SD = .5$)	Perpetration, victimization and defending (peer nominations and self-report)	HIFDS Scale with 12 items (Bonino et al., 1998; Feshbach et al., 1991) including only affective empathy scale
Casas et al. (2013), Spain	Not provided	893 (410 girls and 453 boys), $M = 13.80$ ($SD = 1.47$)	Perpetration and victimization (self-report)	Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales
Chaux and Castellanos (2015), Colombia	Not provided	53,316 (28,251 girls and 25,065 boys), 5th ($M = 11.1$) and 9th ($M = 15$) grades	Perpetration and victimization (self-report)	Empathy measured by a scale developed by the authors, including 5 items grouped in two factors – "not fun" and "feeling bad" Chaux, Castro, Daza, Diaz, and Hurtado, 2006)
Correia and Dalbert (2008), Portugal	Not provided	187 (90 girls and 97 boys), $M = 14.51$ ($SD = 1.40$)	Perpetration, victimization and defending (self-report)	Affective empathy measured with Bryant's (1982) empathy index (22 items)
Endresen and Olweus (2001), Norway	Not provided	2286 (1093 girls and 1193 boys), 6th to 9th grades (13 to 16 years)	Perpetration (self-report)	The Olweus Empathetic Responsiveness Questionnaire (ERQ; Olweus & Endresen, 1998) with 12 items focusing on affective empathy
Espelage, Green, and Polanin (2012), the United States	94.5% White, .5% African Americans, .5% Asian, .7% Hispanic, .4% Native Americans, 2.3% biracial, and 2.7% other	346 (178 girls and 168 boys), sixth to seventh grades	Defending (self-report)	Cognitive empathy with perspective taking subscale and affective empathy with empathic concern subscales from IRI (Davis, 1983) with 7 items each

(continued)

Table 1. (continued)

Study Name and Location	Sociocultural Characteristics of the Sample	Number of Participants and Age/Grade	Role in Bullying and Type of Measure	Measures of Empathy
Espelage et al. (2004), the United States	91.4% White	268 (135 girls and 128 boys), sixth, seventh, and eighth grades	Perpetration and victimization (self-report)	Empathy measured with the following scales: WAI Consideration of others (Weinberger & Schwartz, 1990) for cognitive and behavioral empathy with 7 items Cognitive empathy with perspective taking subscale and affective empathy with empathic concern subscales from IRI (Davis, 1983) with 7 items each. Engagement in caring acts from Children's Peer Relationship Scale (Crick & Grotpeter, 1996) to assess behavioral empathy with 4 items.
Gagnon (2012), the United States	White, non-Hispanic (42.1%), African American (11.5%), Haitian, Caribbean Island, or other Hispanic (27.4%) and Other, mixed, or declined to state: (19.1%). Mean education of parents was 2 years of college. Incomes ranged from under US\$17,000 to over US\$140,000 (mean of US\$60,000)	252 (138 girls and 114 boys), $M = 11.9$ ($SD = .93$)	Perpetration and victimization (self-report and peer nomination)	Cognitive empathy with perspective taking subscale and affective empathy with empathic concern subscales, also fantasy and distress subscales with IRI (Davis, 1983) with 28 items
Gano-Overway (2013), the United States	75% White, 66 Biracial/Multiracial, 52 Hispanic/Latino/a, 7 Asian, 5 Black/African American, 4 American Indian, and 1 Pacific Islander	528 (287 girls and 241 boys), $M = 12.38$ ($SD = .99$)	Perpetration and defending (self-report)	Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales
Gini et al. (2007), Italy	100% Caucasian	318 (142 girls and 176 boys), $M = 13.2$ ($SD = .53$)	Perpetration and defending (self-report and peer nomination)	Cognitive empathy with perspective taking subscale and affective empathy with empathic concern subscales from IRI (Davis, 1983) with 7 items each
Habashy Hussein (2013), Egypt	Not provided	623 (278 girls and 345 boys), $M = 11.54$ ($SD = .68$)	Perpetration and victimization (self-report)	Attending to Others' Emotions, a 5-item subscale from Emotion Awareness Questionnaire for Children Revised (Rieffe et al., 2007)
Jolliffe and Farrington (2006b, 2011), UK	More than 90% Caucasian, 4.3% Asian and 2.6% Afro-Caribbean	720 (344 girls and 376 boys), $M = 14.8$ ($SD = .41$)	Perpetration (self-report)	Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales
Kim, Lee, and Kim (2013), Korea	Not provided	375 (191 girls and 184 boys), 12–15 years old	Defending (self-report)	The affective subscale of the adapted version of IRI (Davis, 1983) with 10 items
Kokkinos and Kipritsi (2012), Greece	12.7% were immigrants	206 (111 girls and 95 boys), 10–13 years old	Perpetration and victimization (self-report)	A modified version of IRI called Feeling & Thinking Instrument (Garton & Gringart, 2005) with 27 items, including cognitive and affective empathy components
Lomas, Stough, Hansen, and Downey (2012), Australia	Not provided	68 (37 girls and 31 boys), $M = 13.85$, ($SD = 1.06$)	Perpetration and victimization (self-report)	Understanding Emotions of Others subscale with 19 items from the Adolescent Swinburne University Emotional Intelligence Test (Adolescent SUEIT; Luebbbers, Downey, & Stough, 2007)

(continued)

Table 1. (continued)

Study Name and Location	Sociocultural Characteristics of the Sample	Number of Participants and Age/Grade	Role in Bullying and Type of Measure	Measures of Empathy
Malti, Perren, and Buchmann (2010), Switzerland	10% of the parents with no education or low-level secondary education, 37% with vocational training, 4% attended a vocational college; 6% with a baccalaureate degree, 26% with a higher vocation diploma, and 17% with a university degree	175 (85 girls and 90 boys), $M = 6.1$ ($SD = .19$)	Perpetration and victimization (teacher, self and parent reports)	Five-item empathy questionnaire developed by Zhou, Valiente, and Eisenberg (2003)
Muñoz, Qualter, and Padgett (2011), UK	Not provided	201 (101 girls and 100 boys), 11–12 years old	Perpetration (self-report)	Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales
Nickerson and Mele-Taylor (2014), the United States	64.9% from and 35.1% from rural zones 89% were White/Caucasian 4% biracial, 3% African American, 2% Hispanic, .8% Native American, .4% Asian American and .8% other	262 (141 girls and 121 boys), $M = 12.23$ (ranging from 10 to 15)	Perpetration, victimization and defending (self-report)	The Olweus ERQ (Olweus & Endresen, 1998) with 12 items focusing on affective empathy
Nickerson, Mele, and Princiotta (2008), the United States	90.4% White, 2.9% Black or African American, 1.9% Asian, 1% Latino and 3.8% 'other'	105 (67 girls and 38 boys), $M = 12.20$ ($SD = .98$)	Defending (self-report)	The Olweus ERQ (Olweus & Endresen, 1998) with 12 items focusing on affective empathy
Park (2013), Korea	Not provided	1516 (793 girls and 723 boys), 6th–9th grades	Perpetration, victimization and defending (self-report)	Affective empathy measured with Bryant's (1982) empathy index (22 items)
Peets, Pöyhönen, Juvonen, and Salmivalli (2015), Finland	79% lived with both of their parents and the majority was born in Finland	6708 (3241 girls and 3287 boys), $M = 11$ (range 8.46–13.93)	Perpetration and defending (self-report and peer nomination)	Affective (4 items) and cognitive (3 items) empathy scale (Kärnä et al., 2011)
Poteat, DiGiovanni, and Scheer (2013), the United States	93% heterosexual, 37 LGBTQ, 89.1 White, 2.1% African American/Black, 2.5% Asian/Asian American, 2.9% Hispanic/Latino, 1.8% biracial/multiracial, and 1.6% "other," 6 did not report	618 (340 girls and 288 boys), $M = 15.80$, grades 9–12	Perpetration (self-report)	Cognitive empathy with perspective taking subscale and affective empathy with empathic concern subscales from IRI (Davis, 1983) with 7 items each
Poteat and Espelage (2005), the United States	95% White, .5% African Americans, 1% Asian, 1.6% Hispanic, .5% biracial, and 1.6% did not report	191 (99 girls and 92 boys), 8th grade	Perpetration and victimization (self-report)	Cognitive empathy with perspective taking subscale and affective empathy with empathic concern subscales from IRI (Davis, 1983) with 7 items each
Poyhonen, Juvonen, and Salmivalli (2010), Finland	Not provided	489 (257 girls and 232 boys), Grades 4 ($M = 10.6$) and 8 ($M = 14.6$)	Defending (self-report and peer nomination)	HIFDS Scale with 12 items (Bonino et al., 1998; Feshbach et al., 1991) to measure cognitive and affective empathy
Pugliese (2014), Canada	Not provided	192 (113 girls and 79 boys), 4th to 6th grades	Perpetration and victimization (self-report)	Affective empathy measured with Bryant's (1982) empathy index (22 items)
Raskauskas Gregory, Harvey, Rifshana, and Evans (2010), New Zealand	70% European, 15% Maori; 10% Asian, and 5% Pacific nations	1168 (607 girls and 561 boys), $M = 10.6$ ($SD = 1.4$)	Perpetration and victimization (self-report)	Affective empathy measured with Bryant's (1982) empathy index (22 items)
Roberts, Strayer, and Denham (2014), Canada	93% of European Canadian, 59% of mothers education and 61% of fathers with post-secondary education and the family income range from US\$10,000 to US\$130,000 (median US\$60,000)	99 (65 girls and 34 boys), $M = 9.7$ ($SD = 2$)	Perpetration (parent, teacher, friend reports)	IRI Empathic Concern Scale (Davis, 1983) with 7 items was used to measure affective empathy

(continued)

Table 1. (continued)

Study Name and Location	Sociocultural Characteristics of the Sample	Number of Participants and Age/Grade	Role in Bullying and Type of Measure	Measures of Empathy
Schokman et al. (2014), Australia	Not provided	284 (59 girls and 224 boys), 11–18 years old	Perpetration and victimization (self-report)	Understanding emotions 19-item subscale (the ability to identify and understand others' emotions) from Adolescent SUEIT, modified version (Palmer & Stough, 2001) Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales
Stavriniades, Georgiou, and Theofanous (2010), Cyprus	2% from low socioeconomic status families, 79% from middle socioeconomic status families, and 9% from high socioeconomic status families	205 (108 girls and 97 boys), $M = 11.7$	Perpetration (self-report)	Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales
Topcu and Erdur-Baker (2012), Turkey	61.5% with middle family income, 17% with low family income and 17.4 with high family income	795 (455 girls and 340 boys), $M = 16.67$ ($SD = 1.28$)	Perpetration (self-report)	Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales
Vanden Hoek (2013), United States	81% Caucasian, 8% Latino/ Hispanic, 3% African American, 3% Asian American, and 5% multiracial or of other ethnicities	756 (402 girls and 347 boys), 10–15 years old	Perpetration and victimization (self-report)	A modified version of Bryant's (1982) empathy index to measure affective empathy (condensed to 14 items)
Warden and Mackinnon (2003), ^a UK	93% Caucasian, 6% Asian, and 1% Oriental	131 (63 girls and 68 boys), $M = 9.6$	Perpetration and victimization (self-report and peer nomination)	Affective empathy measured with Bryant's (1982) empathy index (22 items)
Williford et al. (2014), the United States	51% of Latino/a; American Indian, Asian American, or mixed race/ethnicity (21%), African-American (17%), and Caucasian (11%)	462 (226 girls and 236 boys), $M = 10.2$ ($SD = .50$)	Perpetration and victimization (self-report)	IRI perspective taking scale (Davis, 1983) with 7 items to measure cognitive empathy
Wong, Chan, and Cheng (2014), China	95% Chinese descendants	1917 (863 girls and 1054 boys), $M = 13.36$ (between 12 and 15 years)	Perpetration and victimization (self-report)	An 8-item scale developed by the authors to measure affective empathy
Woods et al. (2009), ^a UK	9% from ethnic minority groups	373 (girls and boys), $M = 9.94$ ($SD = .45$)	Victimization (self-report, task and peer nomination)	Affective empathy measured with Bryant's (1982) empathy index (22 items)
Zelidman (2014), the United States	Caucasian 45.9%, African American 22.8%, Asian 9.3%, Mixed/Other 22.0%	676 (327 girls and 329 boys), seventh to eighth grades	Perpetration and victimization (self-report)	Basic Empathy Scale (Jolliffe & Farrington, 2006a), with 20 items including cognitive and affective subscales summed up in one total score

^aStudies not included in the meta-analysis because they did not provide data for calculation of the effect sizes.

Table 2. A Systematic Review on Callous–Unemotional Traits and Implication in Bullying.

Study Name and Location	Sociocultural Characteristics of the Sample	Number and Age/Grade of the Participants	Role in Bullying and Type of Measure	Measures of Callous–Unemotional Traits
Ciucci and Baroncelli (2014) Ciucci et al. (2014), Italy	91.12% of Italian children with 48.39% of the fathers and 55.96% of the mothers with high school or university degree	529 (282 girls and 247 boys), $M = 12.6$; ($SD = 1.2$)	Perpetration and victimization (self-report)	Inventory of Callous–Unemotional Traits (ICU; Frick, 2004), 24-items self-report questionnaire
Crapanzano et al. (2011) Golmaryami et al. (2015) Thornton, Frick, Crapanzano, and Terranova (2013), the United States	49.3% Caucasian 38.4% African Americans, 6% other, 3% Hispanic-Americans, and 1% Asian Americans. 66% were from low-income households	284 (154 girls and 130 boys), $M = 11.28$ ($SD = 1.82$)	Perpetration victimization and defending (self-report and peer nomination)	Antisocial Process Screening Device (APSD; Frick & Hare, 2001)—CU subscale including 6 items.
Fanti and Kimonis (2012, 2013), Cyprus	20.6% of the parents did not complete high school, 46% had a high school education, 33.4% had a university degree, and 7.2% of the participants were from single-parent families	1416 (708 girls and 708 boys), $M = 12.89$ (ranging from 11 to 14)	Perpetration and victimization (self-report)	ICU (Frick, 2004), 24-items self-report questionnaire
Fanti, Frick, and Georgiou (2009), Cyprus	13% of mothers did not complete high school, 57% with high school, 30% with a university degree; 12% of fathers did not complete high school, 56% with high school and 32% with a university degree. 6% of the participants from single-parent families	347 (171 girls and 176 boys), $M = 14.63$ (ranging from 12 to 18)	Perpetration and victimization (self-report)	ICU (Frick, 2004), 24-items self-report questionnaire
Muñoz, Qualter, and Padgett (2011), UK	Not provided	201 (101 girls and 100 boys), 11–12 years old	Perpetration (self-report)	APSD (Frick & Hare, 2001)—CU subscale including 6 items
O'Brien (2012), the United States	72% Caucasian, 22% African Americans, 1% as Hispanic, and 5% not reporting. 23% mothers with annual income lower than US\$15,000, 17% with income between US\$15,000 and US\$29,000, 28% between US\$30,000 and US\$49,000, 32% with income greater than US\$50,000	103 (55 girls and 48 boys), $M = 4.93$, ($SD = .54$)	Perpetration and victimization (teacher and parent reports)	CU Traits Factor Scale (Hawes & Dadds, 2007) including 9 items
Pardini, Stepp, Hipwell, Stouthamer-Loeber, and Loeber (2012), the United States	53.5% African American, 40.7% Caucasian, 5.1% multiracial, and 0.8% Asian. 58.2% of the caretakers were cohabiting with a partner. 38.1% received public assistance	1862 girls, 6 to 8 years of age	Perpetration (teacher and caretaker reports)	APSD (Frick & Hare, 2001)—CU subscale including 4 items
Viding Simmonds, Petrides, and Frederickson (2009), the United States	79% were English, 11% Western European, 1% Caribbean or mixed race and 9% did not report ethnicity. 9% eligible for free school meals	704 (385 girls and 319 boys), 11–13 years	Perpetration (self-report and peer nomination)	ICU (Frick, 2004), 24-items self-report questionnaire

victims, and defenders), so the number of individual studies in the forest plots varies (see later).

With regard to studies focusing on (cognitive and/or affective) empathy, a total of 12 studies were based in the United States, 18 studies were based in Europe (with 5 based in Italy followed by 4 in the UK), 4 were based in Australia/New Zealand, 2 in Canada, 2 in Korea, and 1 each in China, Colombia, and Middle East (Egypt). Of these 41 studies, the majority were journal articles (35), with only 4 PhD dissertations and 2 book chapters. Four studies on callous-unemotional traits were conducted with U.S. samples and 4 studies with European samples, with 1 based in the UK, 2 in Cyprus, and 1 study in Italy. All studies (but one Masters dissertation) were published as journal articles. All the articles were written in English.

A random effects model was used to calculate the effect sizes for each study. This computational model has been used for the calculation of the summary effect size when the effect sizes are heterogeneous (Borenstein, Hedges, Higgins, & Rothstein, 2009).

In the meta-analytic sections below, results are presented in the form of the odds ratio (*OR*), a statistic measuring the association of empathy with bullying perpetration, victimization, defending, and bully-victim status. For example, an *OR* smaller than the value of 1 indicates that the odds of empathy are lower for bullies than for “nonbullies,” an *OR* greater than the value of 1 indicates that the odds of empathy are higher for bullies than for nonbullies, and a value of 1 indicates no significant difference between the two groups. *ORs* are presented with their accompanying confidence intervals (*CI*s). *CI*s including the value of 1 show a nonsignificant effect that could be attributable to the actual numbers in dichotomies or to low base rates of bullying.

Duval and Tweedie’s trim-and-fill method under the random effects model and classic fail-safe *N* were used to search for publication bias. This method is designed to check if the meta-analysis included all the studies on a topic. If there are more studies on one side of the overall effect in comparison to the other side, it is possible that some existing studies (e.g., yielding nonsignificant effects) were not published. Duval and Tweedie’s procedure looks for missing studies to the left or right of the overall effect, trims the asymmetric studies and recalculates the effect size filling the plot symmetrically with these trimmed studies. It is known that studies with significant results are more likely to be published than studies with nonsignificant associations. Classic fail-safe *N* is a procedure that calculates how many nonsignificant studies would have to be added to the analysis to make the results nonsignificant.

It should be highlighted that in the case of perpetration, victimization, and defending, the reference group does not usually refer to “noninvolved” children (namely children who indicated in the relevant studies that they were not involved in school bullying incidents either as perpetrators, victims, bully-victims, or defenders) but instead usually refers to “nonbullies,” “nonvictims,” and “nondefenders.” This is because many studies reported a statistical association between

empathy with and bullying perpetration score (or victimization and defending scores), without categorizing children as “bullies only” or “victims only” or “bully-victims” or “defenders.” However, some studies conducted specific analyses on children in different bullying roles. In the meta-analytic sections on the association of empathy and “bully-victims,” the reference group is “noninvolved” children and separate additional analyses were performed to take into account those studies that included specific analyses for the category of “pure bullies” and “pure victims.”

Meta-Analysis on Empathy and Involvement in Bullying Perpetration

A total of 33 studies were concerned with the association of (either cognitive or affective) empathy and bullying perpetration. School bullies had significantly lower odds of scoring high in both cognitive ($OR_{\text{random effects}} = 0.60$; 95% *CI* [0.50, 0.72]) and affective ($OR_{\text{random effects}} = 0.51$; 95% *CI* [0.44, 0.60]) empathy compared with nonbullies (Figure 1). The effects were significantly stronger for the affective subscale (Q between groups = 37.98, $p < .01$). The analysis of the studies that included boys and girls separately showed no significant difference between the two (Q between groups = 0.16, $p = .69$).

Further analyses were undertaken to investigate the association between bullying perpetration and the total empathy scores, combining both affective and cognitive empathy. The results showed that bullies had significantly lower odds of scoring high in empathy compared to nonbullies ($OR_{\text{random effects}} = 0.547$; 95% *CI* [0.48, 0.63]; $z = -8.80$; $p < .000$). The heterogeneity test using Cochran’s Q showed that the effect sizes were significantly variable ($Q_{(32)} = 289.43$; $I^2 = 88.94$; $p < .00$).

Duval and Tweedie’s trim-and-fill under the random effects model was performed to search for publication bias. When looking for missing studies to the left of the mean, three studies were trimmed yielding adjusted values under the random effect of $OR = 0.51$; 95% *CI* [0.44, 0.58]. This is a very small change in relation to the previously observed values. Looking to the right of the mean, no studies were trimmed. Classic fail-safe *N* test results show that it would be necessary to include 4095 missing studies with no effect to make the p value nonsignificant. Therefore, it is clear that low empathy is related to bullying perpetration.

Meta-Analysis on Empathy and Involvement in Victimization (Being Bullied)

A total of 23 studies were concerned with the association of (either cognitive or affective) empathy and victimization (being bullied). There was no significant relationship between victimization and total empathy scores ($OR_{\text{random effects}} = 0.96$; 95% *CI* [0.85, 1.09]; $z = -0.64$; $p = .52$). The heterogeneity test using Cochran’s Q showed that the effect sizes were dispersed ($Q_{(22)} = 98.84$; $I^2 = 77.74$; $p < .001$). Given that the

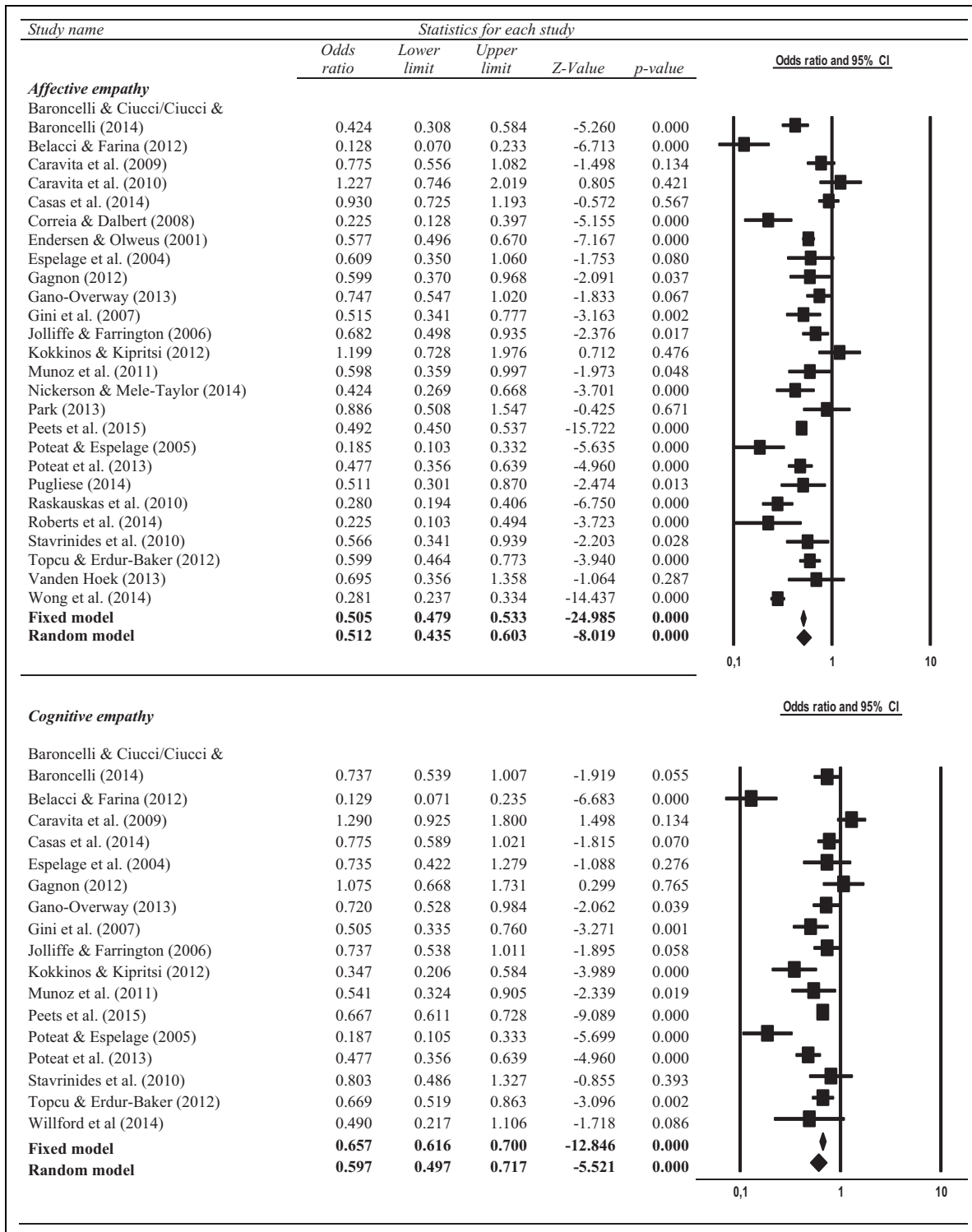


Figure 1. Forest plots for affective and cognitive empathy in perpetrators.

relationship between empathy and victimization was not significant, Duval and Tweedie’s trim-and-fill and classic fail-safe analysis were not performed.

When analyzing separately cognitive ($OR_{\text{random effects}} = 0.88$; 95% CI [0.67, 1.15]; $p = .35$) and affective ($OR_{\text{random effects}} = 0.99$; 95% CI [0.81, 1.23]; $p = .97$) empathy, the relationship was

still not significant (see Figure 2). Inspection of the pattern of individual effects across studies would suggest that victims have a tendency to score higher in affective empathy and lower in cognitive empathy, but no significant difference between the two was established (Q between groups = 0.47, $p = .50$). Nevertheless, under the fixed model, the only significant weak

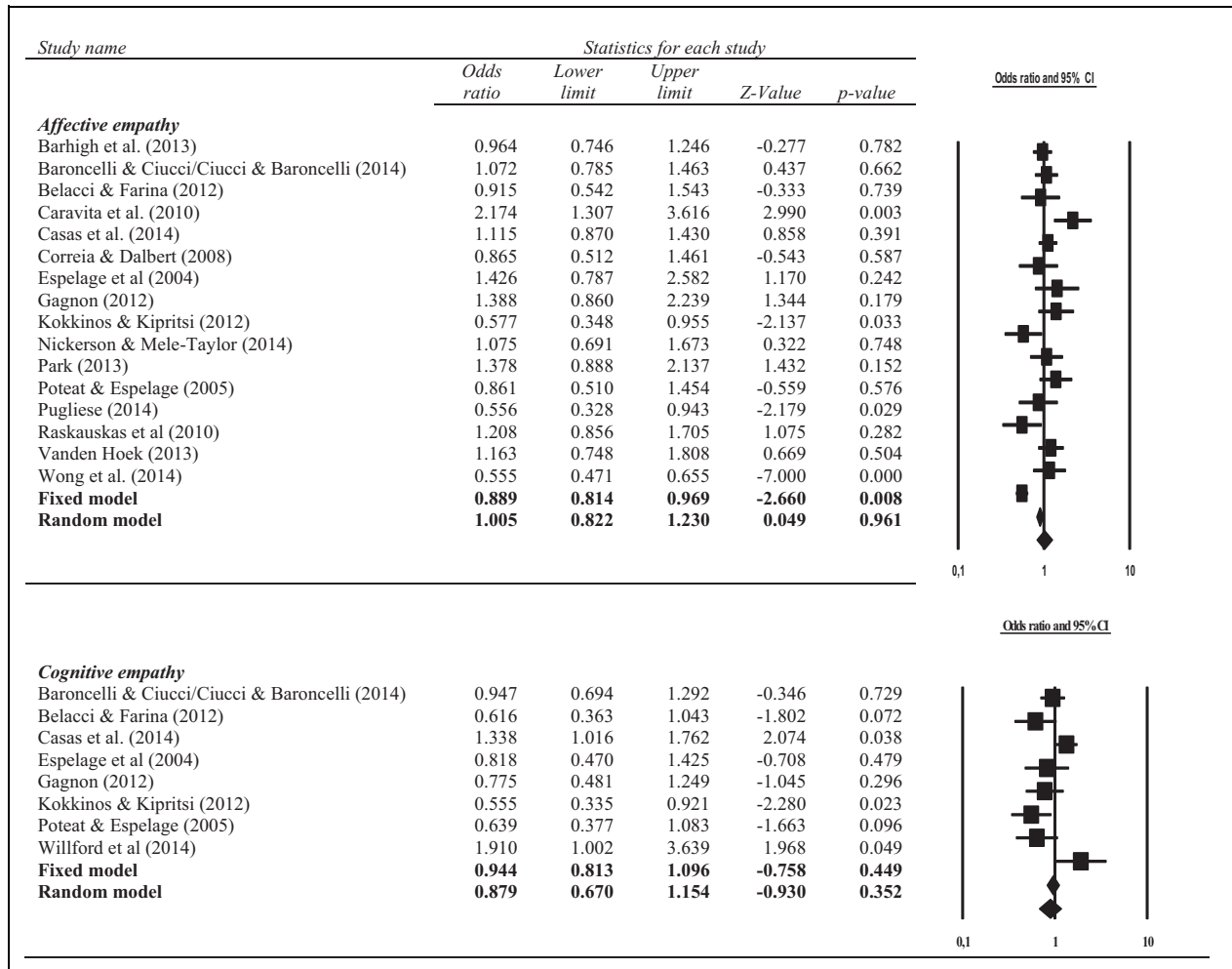


Figure 2. Forest plots for affective and cognitive empathy in victims.

effect size was found for affective empathy (see Figure 2). There were no differences between boys and girls (Q between groups = 0.15, $p = .70$).

Meta-Analysis on Empathy of Bully-Victims

Very few studies have looked at empathy of bully-victims and so results are not shown separately for cognitive and affective empathy. For the analyses of bully-victims, we focused on papers that compared bully-victims to noninvolved children. This is because the papers that included analyses of bully-victims compared children involved in different bullying roles (as “bullies” or “victims” or “bully-victims” or defenders) with a reference category of “noninvolved” children.

Based on the eight located studies (see Figure 3), bully-victims had significantly lower odds of scoring high in empathy compared with noninvolved students ($OR_{random\ effects} = 0.57$; 95% CI [0.36, 0.90]; $p = .02$). The heterogeneity test using Cochran’s Q showed that the effect sizes were dispersed ($Q_{(7)} = 26.15$; $I^2 = 73.23$; $p < .01$). There were no data available to calculate effect sizes for cognitive and affective empathy or boys and girls separately. Duval and Tweedie’s trim-and-fill

under the random effects model was performed to search for the publication bias, showing no difference in effect sizes due to bias based on missing studies to the left of the mean. To the right of the mean, two studies were trimmed, showing an adjusted effect size of $OR = 0.75$, 95% CI [0.44, 1.25]. Classic fail-safe N test results show that the number of missing studies that would make the p value nonsignificant is 37. Therefore, bully-victims have low empathy.

Meta-Analysis on Empathy for Defenders

A total of 15 studies provided results on (either cognitive or affective) empathy for defenders. As expected, defenders had significantly higher odds of scoring high in both cognitive ($OR_{random\ effects} = 2.09$; 95% CI [1.46, 2.98]) and affective ($OR_{random\ effects} = 2.62$; 95% CI [1.80, 3.82]) empathy compared with nondefenders (see Figure 4), with effect sizes being significantly stronger for affective empathy (Q between groups = 38.17, $p < .001$). There were no data available to calculate effect sizes for boys and girls separately.

Meta-analytic results also suggest a relationship between the role of defender and the combined scores for (cognitive and

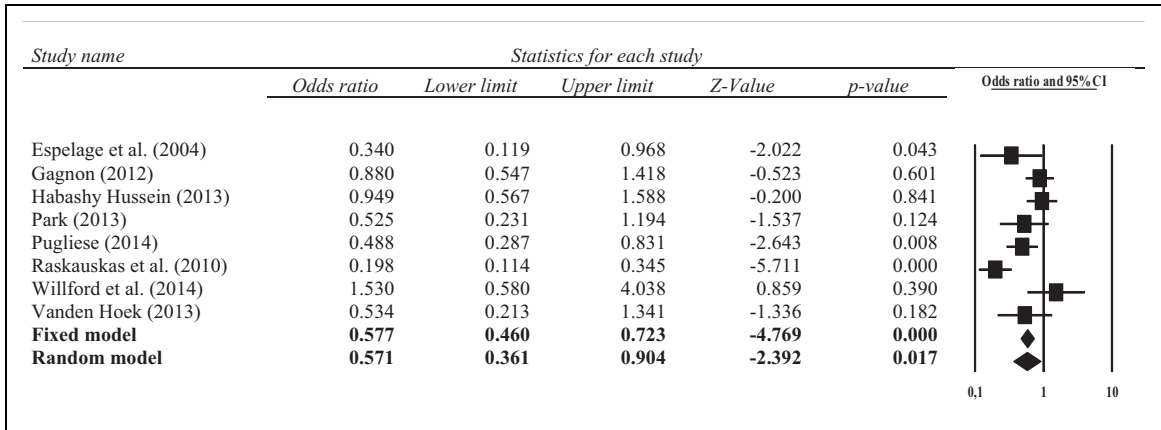


Figure 3. Forest plot for empathy in bully-victims.

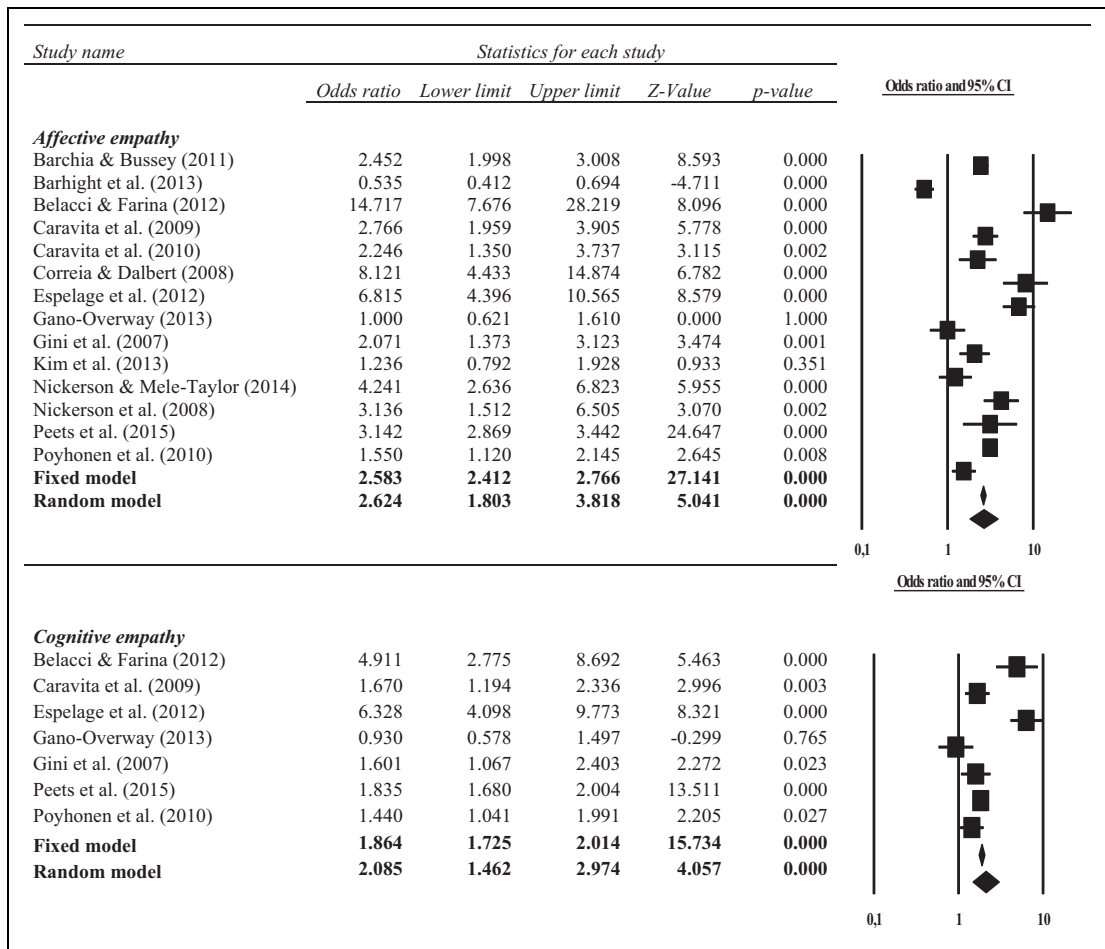


Figure 4. Forest plots for affective and cognitive empathy in defenders.

affective) empathy ($OR_{\text{random effects}} = 2.30$; 95% CI [1.68, 3.17]; $z = 5.14$; $p < .0001$). The heterogeneity test using Cochran's Q showed that the effect sizes were dispersed ($Q_{(14)} = 215.50$; $I^2 = 93.50$; $p < .001$). Duval and Tweedie's trim-and-fill under the random effects model showed no difference between adjusted and observed effect sizes. Classic fail-safe N test results showed that the number of missing studies

that would make the p value nonsignificant 1,260. Therefore, defenders have high empathy.

Empathy in Pure Bullies and Pure Victims

Most of the studies simply provided results based on the association between bullying perpetration scores (or victimization

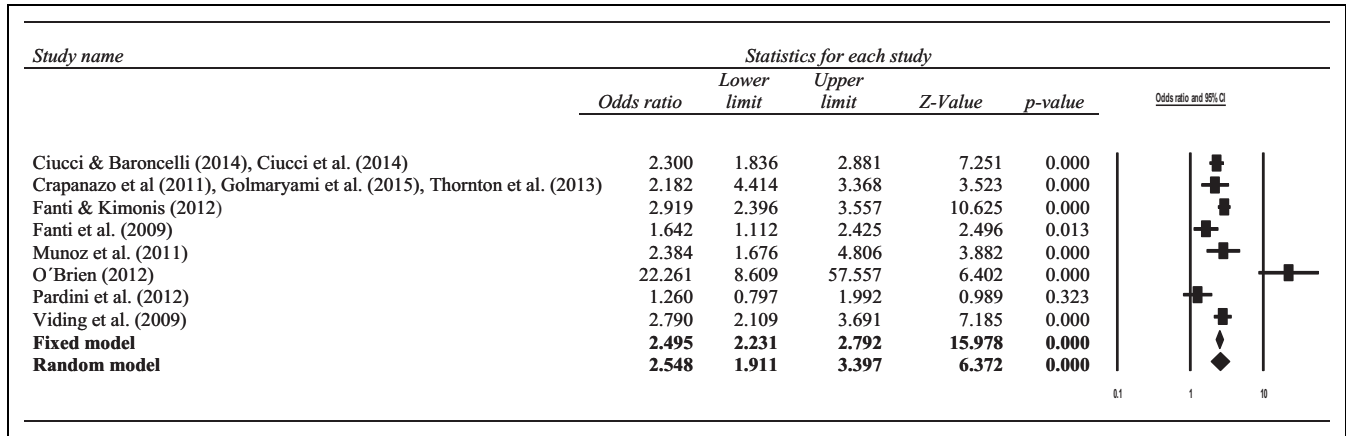


Figure 5. Forest plot for callous–unemotional traits in perpetrators.

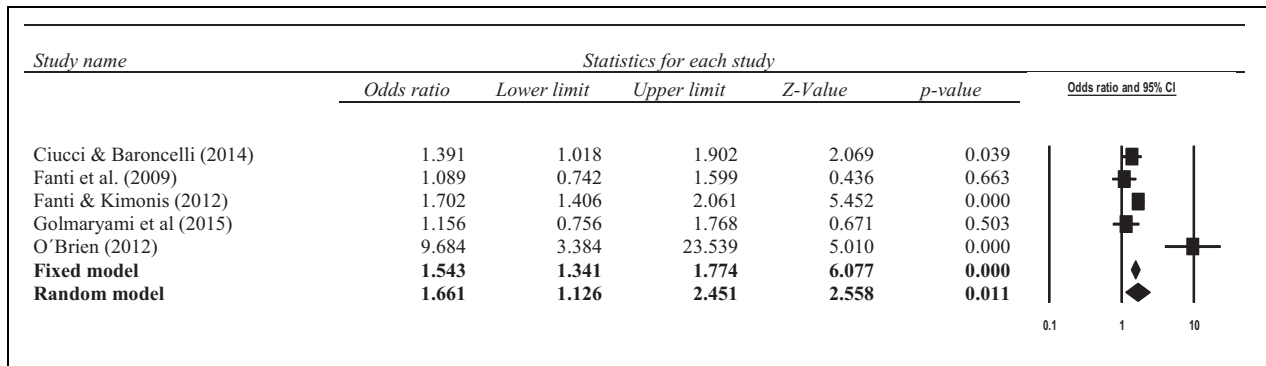


Figure 6. Forest plot for callous–unemotional traits in victims.

scores) and empathy scores. However, separate analyses were performed taking into account those studies that included specific analyses for the categories of “pure bullies” and “pure victims.” Only eight studies provided such results and there were no data to calculate effect sizes for cognitive and affective empathy separately. Pure bullies had a significantly lower probability of scoring high in empathy ($OR_{\text{random effects}} = 0.62$; 95% CI [0.43, 0.90]; $Q_{(7)} = 28.58$; $I^2 = 75.50$; $p < .001$). For the pure victims, the effect size was not significant ($OR_{\text{random effects}} = 1.11$; 95% CI [0.91, 1.34]; $Q_{(76)} = 13.58$; $I^2 = 48.46$; $p = .059$). These results are similar to those reported above for bullies and victims.

Meta-Analysis on Callous–Unemotional Traits and Involvement in Bullying Perpetration

A total of eight studies provided results on the association between callous–unemotional traits and bullying perpetration. As expected, bullies had significantly higher odds of scoring high in callous–unemotional traits ($OR_{\text{random effects}} = 2.55$; 95% CI [1.91, 3.40]; $Q_{(7)} = 49.40$; $I^2 = 85.83$; $p < .001$) compared with nonbullies (see Figure 5). There were no available data to calculate effect sizes for groups (males vs. females) separately.

Duval and Tweedie’s trim-and-fill was performed to search for publication bias. Looking for the missing studies to the left of the mean, no studies were trimmed and, therefore, observed and adjusted values were the same, suggesting no overestimation of the summary effect size in our study findings. Looking for missing studies to the right of the mean, one study was trimmed yielding an adjusted OR of 2.83 (95% CI [2.09, 3.83]) for the random effects, suggesting a slight underestimation of the summary effect size. Classic fail-safe N test results show that the number of missing studies that would make the p value nonsignificant is 459. Therefore, bullying perpetrators are high on callous–unemotional traits.

Meta-Analysis on Callous–Unemotional Traits and Victimization

Five studies provided results on the association between callous–unemotional traits and victimization (being bullied) and individual effects are shown in Figure 6. Victims had significantly higher odds of scoring high in callous–unemotional traits compared with nonvictimized students ($OR_{\text{random effects}} = 1.66$; 95% CI [1.13, 2.45]; $Q_{(4)} = 22.79$; $I^2 = 82.45$; $p < .001$). There were no data available to calculate effect sizes for groups (males vs. females) separately.

Duval and Tweedie's trim-and-fill was performed to search for the publication bias. Considering the random effects model and looking for missing studies to the left of the mean, observed, and adjusted values were the same. Looking for missing studies to the right of the mean, one study was trimmed, yielding adjusted values of $OR = 1.92$ (95% CI [1.28, 2.82]) for the random effects, suggesting a slight underestimation in our meta-analytic findings for the summary effect size. Classic fail-safe N test results show that the number of missing studies that would make the p value nonsignificant is 44. Therefore, victims were also high on callous-unemotional traits.

Discussion

Based on the results of our meta-analytic review, it was established that bullying perpetration was negatively associated with both cognitive and affective empathy, with measures of association being significantly stronger for the latter. This is consistent with existing theorizing on how understanding and experiencing others' emotions is what helps children to refrain from involvement in antisocial behavior (Bryant, 1982; Warden & Mackinnon, 2003) such as bullying. Consistent with existing theorizing on the contribution of callous-unemotional traits to the development of aggressive and antisocial behavior (Frick & White, 2008), it was also found that bullying perpetration was positively associated with callous-unemotional traits.

There was no relationship between victimization and empathy and a small yet significant positive relation between victimization with callous-unemotional traits. Although this may seem surprising at first, especially when one considers these traits as being negatively related to (affective) empathy, this meta-analytic finding is actually understandable when one considers that the measurement of callous-unemotional traits also includes items on "lack of guilt" or "coldness," while standardized questionnaires (such as the Inventory for Callous-Unemotional Traits; Frick, 2004) include subscales such as "unemotional." One may hypothesize that "being unemotional" is a neutralization technique that victims utilize to overcome their suffering. At the same time, it should be highlighted that this positive association was based on a relatively small effect and based on very few studies. Further research on this topic is warranted.

As expected, our meta-analytic findings showed that bully-victims tended to score low on empathy, highlighting the need to focus future research efforts on this distinct group of children. Defenders, on the other hand, tended to score high on both cognitive and affective empathy, consistent with current theorizing on how empathy may be associated with involvement in prosocial behaviors (Jolliffe & Farrington, 2011).

Our meta-analytic findings unravel specific patterns of association between types of involvement in bullying and levels of cognitive and affective empathy. It is hoped that these findings will guide future intervention research. At the same time, many questions remain unanswered and, in some ways, our study

raises further questions. For example, although the direction of effects between empathy and involvement in different bullying roles is now clear, the mechanisms that actually trigger empathic responses to different bullying groups (bullies, victims, defenders, etc.) remain unclear. Further research on how these associations are mediated by other variables is warranted. Future longitudinal research on bullying, empathy, and callous-unemotional traits is also warranted. For example, does involvement in bullying perpetration function as a "stepping-stone" toward higher levels of callousness? Does empathy function as protective factor "blocking" children from involvement in future aggressive acts? Interestingly, a short-term follow-up study by Stavrinides, Georgiou, and Theofanous (2010) established that affective empathy predicted less bullying and bullying predicted less empathy, suggesting that empathy is a barrier for future bullying while bullying blocks the development of future empathy.

Our systematic review indicates that involvement in bullying is a risk marker for levels of empathy, but results should be treated with caution, especially when it comes to making causal inferences (Murray, Farrington, & Eisner, 2009). Future research should focus on establishing whether bullying is associated with empathy (and callous-unemotional traits accordingly) in a causal manner. Recent studies have raised concerns about the potentially confounded association between empathy and bullying, with the key issue being whether low empathy is related to bullying independently of other variables that correlate with bullying (Jolliffe & Farrington, 2011). If empathy is not independently related to bullying, then interventions that focus on increasing empathy may be successful in increasing empathy, but unless low empathy causes bullying, these interventions will have little effect in reducing bullying. Future research should address causal relationships by looking at whether within-individual changes in levels of bullying are preceded or followed by within-individual changes in empathy or callous-unemotional traits (Farrington, Loeber, Yin, & Anderson, 2002). It could be also useful to conduct new randomized control trial interventions to reduce bullying by increasing empathy. Effectiveness of such interventions should still be confirmed. This could help in establishing possible causal relationships and, above all, could be an important step forward to eradicate bullying.

Caution is also warranted with regard to the varying instruments that were used to measure both empathy (Jolliffe & Farrington, 2006a) and callous-unemotional traits. For example, while some instruments on empathy focus only on the affective aspect and are gender-specific (e.g., Bryant's empathy index), others include both the affective and cognitive aspects but are not target-specific (e.g., the Basic Empathy Scale, Jolliffe & Farrington, 2006a). Thus, it would be useful to unify and develop common criteria for measurement of empathy, callous-unemotional traits, and bullying.

It is hoped that this meta-analytic review has adequately addressed the extent to which empathy and callous-unemotional traits are related to involvement in school bullying by synthesizing all available evidence. The time is ripe to

investigate mechanisms that explain these associations and the extent to which these relationships are causal. However, and irrespective of causal relationships, effective programs that promote reductions in antisocial behaviors (such as bullying) and promote altruistic/prosocial behaviors should be promoted, as these improve the health and psychosocial development of youth.

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