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Interpreting Child Sexual Abuse: Empathy and Offense-Supportive Cognitions among Child Sex Offenders

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Researchers have suggested that child sex offenders hold distorted views on social interactions with children. Misinterpreting children's behavior and intentions could lead to sexually abusive behavior toward children. It is further suggested that the interpretation process is influenced by offenders' offense-supportive cognitions and levels of empathy. To examine the relationships between these three concepts, 47 contact offenders completed self-reports on offense-supportive cognitions and empathy. Vignettes were developed to assess the extent to which offenders attributed responsibility, benefit, and complicity to children in hypothetical child molestation incidents. This study showed that cognitions that justify sexual offending against children seem to diminish the threshold for sexual assault by assigning more cooperation and willingness of the victim in a child molestation incident.

KEYWORDS *child sexual abuse, offense-supportive cognitions, cognitive distortions, child molester, sexual offender, empathy, attribution, interpretation process*

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There is an ongoing discussion on the role of social information processing deficits, offense-supportive cognitions, and empathy deficits in the offending process of child sex offenders (CSOs). Although “these concepts are often described, reviewed, and studied in relative blissful isolation from one another” (Blake & Gannon, 2008, p. 34), it is hypothesized that these concepts are related to one another, resulting in sexually abusive behavior toward children (Blake & Gannon, 2008; Ward & Casey, 2010). While there has been an emergence in the literature concerning offense-supportive cognitions and empathy among CSOs, there has been little empirical evidence that offense-supportive cognitions and deficits in empathy are reflected in distorted interpretations. These distorted interpretations could lead to sexually abusive behavior.

SOCIAL INFORMATION PROCESSING

It is assumed that all behavior, including offending behavior, is preceded by a series of cognitive processes, either conscious or unconscious (Bargh & Ferguson, 2000; Crick & Dodge, 1994). Processing offense-relevant information includes social perception and interpretation processes (Blake & Gannon, 2008). The interpretation process enfolds a causal analysis of the event that has occurred, inferences about the intent of the other person, and evaluation of goal attainment (Crick & Dodge, 1994). The end-stage products of the interpretation process are attributions, such as the causal explanations of behavior of the self and others (Blake & Gannon, 2008; Ward, Keenan, & Hudson, 2000).

It is hypothesized that CSOs have social perception deficits and are deficient in their ability to accurately receive, perceive, and interpret incoming information. These deficiencies could lead to socially incompetent behavior (McFall, 1990; Stahl & Sacco, 1995; Stermac & Segal, 1989). For example, distorted interpretations of victims’ behavior could lead to mistaken attributions when justifying or describing the sexual offense (Ward et al., 2000).

CSOs indeed have been found to hold distorted views on social interactions with children (Stermac & Segal, 1989; Hempel, Buck, & Van Marle, 2014; Ward, Hudson, & Marshall, 1995). For example, Stermac and Segal (1989) administered vignettes with descriptions of child molestation incidents to CSOs, rapists, and nonoffenders. These vignettes varied in the degree of sexual contact and the child’s response to that contact. CSOs viewed more benefit for children of having sexual contact with an adult, viewed more complicity on the child’s part in the initiation of sexual contact, and attributed less responsibility to the adult than rapists and nonoffenders. Rapists did not differ from nonoffenders, indicating that a history of sexual offending itself could not explain the difference between CSOs and rapists (Stermac & Segal, 1989). Yet when child responses are ambiguous, mistaken

attributions are not unique to CSOs alone (Hempel et al., 2014). Of note, social information processing is thought to be influenced by multiple situational, environmental, physical, psychological, and historical factors (Geer, Estupian, & Manguno-Mire, 2000; Ward, Gannon, Keown, 2006).

OFFENSE-SUPPORTIVE COGNITIONS

One of the factors that are hypothesized to influence CSOs' social information processing is maladaptive beliefs and attitudes about sexual offending. These maladaptive beliefs are often articulated by CSOs (Blake & Gannon, 2008; Bumby, 1996; Keown, Gannon, & Ward, 2010; Marziano, Ward, Beech, & Pattison, 2006; Stermac & Segal, 1989; Ward, 2000; Ward & Keenan, 1999). Because these beliefs and attitudes serve to deny, blame, excuse, and minimize sexually abusive actions, they are offense-supportive in nature (Abel, Becker, & Cunningham-Rathner, 1984; Bumby, 1996; Ward, 2000).

According to Ward and colleagues (Ward, 2000; Ward & Casey, 2010; Ward & Keenan, 1999), these offense-supportive cognitions are the result of deviant cognitive processes, and they cluster together in underlying networks of beliefs, such as schemas or "implicit theories." These implicit theories are hypothesized to guide future behavior, by affecting how CSOs perceive, encode, and interpret social information. Ward and Keenan (1999) proposed five implicit theories used by CSOs to make assumptions about the victims' desires and intentions: (a) entitlement: a core belief to have the right to have sex with children; (b) dangerous world: children are more accepting than adults, or everyone is hostile and others should be dominated; (c) uncontrollability of sexual drive; (d) nature of harm: children who are sexually abused are relatively unharmed; and (e) children as sexual beings: a child is a sexual being who is capable of desiring and enjoying sex.

Clustered offense-supportive cognitions could function as "a deep-rooted belief system that may motivate sexual offenses against children" (Blake & Gannon, 2008, p. 39). Preexisting distorted "knowledge" about children's desires and intentions may lead to misinterpretations and mistaken attributions of children's behavior (Blake & Gannon, 2008; Ward, Hudson, Johnston, & Marshall, 1997). For example, before the actual sexual abuse of a child occurs, there has to be a motivation to sexually offend, internal and external inhibitions have to be overcome, and the offender has to deal with the resistance of a child (Finkelhor, 1984). Holding offense-supportive cognitions could support and facilitate the sequential processes that lead up to an offense. The interpretations and end-stage attributions are likely to further strengthen preexisting offense-supportive cognitions (Blake & Gannon, 2008; Ward et al., 1997). However, it has also been proposed that these deviant cognitions are postoffense rationalizations to reduce cognitive dissonance (i.e., discomfort due to contradictory beliefs). Cognitive dissonance

may have resulted from the offense or to retain impression management after the offense (Abel, Becker, & Cunningham-Rathner, 1984; Abel et al., 1989; Maruna & Mann, 2006).

Studies indeed have found evidence for the presence of all five of Ward's implicit theories in CSOs, with CSOs endorsing significantly more offense-supportive cognitions than rapists, offender controls, or community controls (Abel et al., 1989; Bumby, 1996; Keown, Gannon, & Ward, 2008; Keown et al., 2010; Marziano et al., 2006; Stermac & Segal, 1989). Furthermore, higher levels of deviant beliefs and attitudes distinguish contact CSOs from non-contact CSOs (Babchishin, Hanson, & Hermann, 2011; Hempel, Buck, Goethals, & Van Marle, 2014). The study of Hempel and colleagues (2014) was conducted with the same sample of contact CSOs that are participating in this study.

EMPATHY

Besides social information processing and offense-supportive cognitions, empathy is also supposed to play a role in the offending process of CSOs (Blake & Gannon, 2008; Fernandez, Marshall, Lightbody & O'Sullivan, 1999; Marshall, Hamilton, & Fernandez, 2001; Ward, Polaschek, & Beech, 2006). Empathy encompasses both cognitive and affective processes, referring to the ability to understand as well as to feel or sympathize with another's emotional state or context (Cohen & Strayer, 1996). According to Marshall, Hudson, Jones, and Fernandez (1995), the empathy process includes four stages: (a) recognition of the emotional state of another, (b) perspective taking (comprehension of another's frame of reference), (c) replication of the other's emotional response, and (d) response decision or empathic responding. Marshall and colleagues (1995) stated that the failure to recognize the distress of a person would allow the continuation of harmful behavior, including offending behavior.

In line with this, CSOs are found to show deficits in victim empathy and are less likely to recognize victim harm than non-sex offenders and nonoffenders (Fernandez et al., 1999; Marshall et al., 2001; Polaschek, 2003). However, deficits in general affective and especially cognitive empathy are more strongly related to general offending than to sexual offending (Jolliffe & Farrington, 2004; Marshall et al., 1995). Therefore, it has been proposed that "empathy deficits in sex offenders are no more than a distortion about the harmful consequences of their abuse" (Marshall, Anderson, & Fernandez, 1999, p. 85) and the result of "a distorted view of the responses displayed by victims during and after the abuse" (Marshall et al., 2001, p. 124). In this light, empathy deficits in sex offenders might better be viewed as part of the distorted cognitive processes that result in post-offense-supportive cognitions (Marshall et al., 2001). Indeed, lower levels of cognitive and

affective empathy toward victims of sexual abuse have been found to be related to more offense-supportive cognitions in CSOs (Marshall et al., 2001). Contrary to this, Ward, Gannon, and Keown (2006) stated that deficits in empathy should already be present *prior* to the offense because the offender had already taken some steps toward the abuse, before the distress of a victim could be recognized.

CURRENT STUDY

To summarize, social information processing theory hypothesizes that CSOs who hold offense-supportive cognitions and are characterized by empathy deficits will attend to schema-consistent information, leading to distorted interpretations and mistaken attributions of children's behavior (Blake & Gannon, 2008; Ward et al., 2000). However, to date, no study has empirically demonstrated whether offense-supportive cognitions actually precede sexual offending (Maruna & Mann, 2006), result from the offense itself, or both. Gannon, Ward, and Collie (2007) stated that researchers need to demonstrate that distorted beliefs lead to the misinterpretation of social information in order to support the concept of implicit offense-supportive cognitions that exist prior to an offense.

In this study, we will examine whether there is a relationship between offense-supportive cognitions, cognitive and affective empathy, and the interpretation of child molestation incidents. The objective is that this will be informative about the processes that contribute to an offense. We hypothesized that higher levels of offense-supportive cognitions will be related to lower levels of cognitive and affective empathy. We also hypothesized that higher levels of offense-supportive cognitions and lower levels of cognitive and affective empathy will be related to more distorted attributions of child complicity, child responsibility, and child benefit in child molestation incidents.

METHODS

Participants

A total of 47 CSOs participated in this study. CSOs were sampled from three forensic psychiatric outpatient and day treatment centers and three penitentiary institutions in the Netherlands. These forensic outpatient and day treatment centers not only provide mandatory treatment as part of a judicial sanction but also provide treatment on a voluntary basis, when a person suffers from intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activity with a prepubescent child. CSOs were approached by their psychologists to inform them about the study and to ask them to

participate voluntarily. CSOs were guaranteed that noncooperation would have no consequences, and they were informed that their responses would not be communicated to the treatment staff. They received an incentive.

CSOs were included if they (a) were currently in treatment or imprisoned for a sexual offense against a child under 16 years of age in which there was physical contact and (b) had never committed any sexual offenses against an adult. All CSOs were of Dutch ethnicity. Half of the CSOs had male victims only, 45.7% had female victims only, and 4.3% had both male and female victims. Only 10.6% were intrafamilial offenders (offenders who sexually abused a child that is related to the family), and 89.4% were extrafamilial offenders (offenders who sexually abused a child that is not related to the family). Of the CSOs, 8.9% completed elementary school only, 19.9% completed lower vocational education, 51.2% completed middle vocational education, and 20% of the CSOs completed higher vocational education or university. At the time of this study, one-third of the CSOs were married or living with a partner (32.6%), 37.2% were single and living alone, 13.9% were living with their family, and 16.3% were detained or lived in an assisted living residence for ex-detainees. Almost half of the CSOs had children (47.8%). Of them, 45.5% lived with their minor aged children.

Procedure

This study was part of a larger assessment battery on cognitions of CSOs that was approved by the Medical Ethics Review Committee (METC) of the Erasmus University Medical Center Rotterdam. All participants provided written informed consent that warranted voluntarily participation without any consequences of noncooperation for the treatment process or prison placement. In addition, CSOs were informed that their responses would not be communicated to their treatment staff or to authorities and that withdrawal during the assessment did not have any consequences for treatment or sentencing decisions. CSOs were tested at the institution where they were in treatment or imprisoned, and nonoffenders were tested at the Erasmus University Medical Center. Participants received €15 for participation.

Materials

OFFENSE-SUPPORTIVE COGNITIONS

To measure offense-supportive cognitions regarding sex with children, the Molest Scale was used (Bumby, 1996; Dutch translation and validation: De Doncker, Van Beek, Decoene, Luyten, & Koeck, 2003). Thirty-eight statements such as “sometimes victims initiate a sexual activity” are scored on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Responses yield a total score ranging from 38 to 152, with higher scores

indicating more distortions concerning sexual activities with children. Bumby (1996) reported excellent internal consistency ($\alpha = .97$) and test-retest reliability ($r = .84$). In our sample, the internal consistency was excellent ($\alpha = .91$).

AFFECTIVE AND COGNITIVE EMPATHY

In order to measure both affective and cognitive empathy, the Basic Empathy Scale (BES) was used (Jolliffe & Farrington, 2006; Dutch translation and validation: Van Langen, Stams, & Van Vugt, 2009). This self-report measure is based on four basic emotions—anger, sadness, fear, and happiness—and assesses both the ability to feel or sympathize with someone's emotions (affective empathy) and the ability to understand another's emotional state (cognitive empathy) (Cohen & Strayer, 1996; Jolliffe & Farrington, 2006). The cognitive empathy scale includes 9 statements such as "I often understand how someone feels, before they tell me," and the affective empathy scale includes 11 statements such as "I do not feel anything when a friend is sad." These statements are rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), resulting in a total scale score ranging from 20 to 100. Higher scores indicate higher levels of empathy. A confirmatory factor analysis revealed satisfactory reliability ($\alpha = .79$ and $.85$ for cognitive empathy and affective empathy, respectively; Jolliffe & Farrington, 2006). Van Langen and colleagues (2009) found comparable results in their study of 1,789 adolescents and young adults ($\alpha = .72$ and $.81$ for cognitive empathy and affective empathy, respectively). In our sample, the internal consistency for the cognitive scale was good with $\alpha = .85$, and marginal for the affective scale $\alpha = .67$.

ATTRIBUTIONS

Eight written vignettes were developed by the authors to assess the attribution of responsibility, benefit, and complicity in hypothetical child molestation incidents between an adult male and a child that ended in sexual contact. Vignettes were based on clinical case descriptions examined by Stermac and Segal (1989) and studies about the modus operandi of CSOs by Elliot, Brown, and Kilcoyne (1995) and Lang and Frenzel (1988). Each vignette described a situation between an adult male and a child between 8 and 12 years old that ended in sexual contact. This age range represents a population that is old enough to be able to communicate but too young to make their own decisions. The vignettes varied in the child's emotional response: crying, refusing, passive, or giggling. Depending on the sexual preference of the participant, a heterosexual or homosexual version of the vignettes was administered by varying the gender of the child. An example of a vignette is as follows:

Annie's parents are going on a night out. Peter, a close friend of the family, has offered to babysit Annie. After the parents have explained where Peter can find everything, they leave. Annie is upstairs, playing. Peter asks if she shouldn't be in bed already but Annie wants to stay up for a little while. "Shall I bathe you?" "I've already taken a bath yesterday," she says. "It is fresher when you also do it now too." Peter fills the bathtub and helps Annie in it. Peter touches her vagina. "Do you like it this way?" Annie giggles a little bit and looks down.

Written questions following each vignette resembled three types of offense-supportive attributions that CSOs often hold and were adopted from Stermac and Segal (1989), including *child responsibility* (Do you think that the man was responsible for what happened? Do you think the child was responsible for what happened?), *complicity by the child* (Do you think the child wanted this to happen? Do you think the child enjoyed what happened?), and *benefit for the child* (Do you think that the child could benefit from this experience? Do you think the child could be harmed from this experience?). After reading the vignettes, these questions had to be answered on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*definitely*), resulting in 3-dimension scores: adult responsibility, complicity by the child, and benefit for the child. Higher scores represented more distorted attributions. The child complicity and child benefit scales both have excellent internal consistencies of respectively $\alpha = .90$ and $\alpha = .94$. The adult responsibility scale has a good internal consistency of $\alpha = .89$. To every participant, the 8 vignettes were presented in a fixed order. The victim responses in the vignettes were counterbalanced or presented in a varied order.

Statistical Analyses

To test for normality of the scores, Kolmogorov-Smirnov tests were performed. Scores on the offense-supportive cognitions (Molest) scale ($W(47) = .09$) and the affective empathy scale ($W(29) = .10$) were normal, whereas scores on the attribution scales (child benefit: $W(41) = .19$; child responsibility: $W(42) = .33$; child complicity: $W(42) = .29$) and the cognitive empathy scale ($W(28) = .16$) were significantly nonnormal ($p < .05$).

To examine the relationships between offense-supportive cognitions, empathy, and attributions, parametric or nonparametric correlational analyses were performed. For the attribution scales and the cognitive empathy scale, Spearman correlations were performed. All analyses were one tailed, and the alpha was set on .05.

RESULTS

Table 1 shows a moderate negative association between higher levels of offense-supportive cognitions and lower levels of cognitive empathy

TABLE 1 The Relationships between Offense-Supportive Cognitions, Empathy, and Attributions ($N = 47$)

Scale	OSCs	Cognitive empathy	Affective empathy	Child benefit	Child responsibility	Child complicity
OSCs	1					
Cognitive empathy	-.40*	1				
Affective empathy	-.02 ^a	.73**	1			
Child benefit	.32*	.03	-.01	1		
Child responsibility	.43**	-.37*	-.09	.36*	1	
Child complicity	.34*	-.26	.06	.60**	.55**	1

Note. Spearman correlations; ^aPearson correlation; OSCs = offense-supportive cognitions.

* $p < .05$. ** $p < .01$.

($r_s = -.40$, $p < .05$). No association was found between offense-supportive cognitions and affective empathy. In line with our hypothesis, moderate positive associations were found between offense-supportive cognitions and the attribution of child benefit ($r_s = .32$, $p < .05$), child responsibility ($r_s = .43$, $p < .01$), and child complicity ($r_s = .34$, $p < .05$). Lower levels of cognitive empathy were negatively related to the attribution of more child responsibility ($r_s = -.37$, $p < .05$). No association was found between cognitive empathy and the attribution of child benefit or child complicity or between affective empathy and the attribution of child responsibility, child benefit, or child complicity.

DISCUSSION

This study showed a relationship between CSOs' cognitions that justify sexual offending against children (offense-supportive cognitions), their understanding of another's emotional state or context (cognitive empathy), and their interpretation of hypothetical child molestation incidents. CSOs' higher levels of offense-supportive cognitions were related to lower levels of cognitive empathy and the attribution of more child benefit, more child responsibility, and more child complicity in hypothetical child molestation incidents. Lower levels of cognitive empathy were related to the attribution of more child responsibility.

The finding that cognitions that justify sexual offending against children were related to problems with understanding another's emotional state (cognitive empathy) but unrelated to the ability to feel or sympathize with another's emotional state (affective empathy) are partly in line with the theories of Fernandez and colleagues (1999), Marshall and colleagues (1995), and Marshall and colleagues (2001). While Marshall and colleagues (2001) found that higher levels of offense-supportive cognitions were related to both lower levels of cognitive and affective empathy toward victims of sexual abuse, we

have only found this relationship to cognitive empathy in general. However, it was suggested that empathy deficits were primarily due to a failure to recognize harm (Fernandez et al., 1999; Marshall et al., 2001). According to Marshall and colleagues, "An important aspect of the cognitive component of empathy (i.e., recognition of distress in another person) is the initial element in the chain of responses that is described as empathy. If this initial stage does not occur in sexual offenders, as a result of their distorted perceptions, then the whole process involved in empathy is prevented from occurring" (p. 124–125). It was further stated that the ability to feel compassion with their victims is of separate importance. However, it remains remarkable that, although cognitive and affective empathy were positively related, only cognitive empathy was related to offense-supportive cognitions. This finding needs further examination.

Nevertheless, the relation between offense-supportive cognitions and cognitive empathy in general is in line with Ward and colleagues' (2006) hypothesis that deficits in empathy should already be present prior to the offense because the offender had already taken some steps toward the abuse before the distress of a victim could be recognized. Furthermore, our finding that CSOs' offense-supportive cognitions are related to the attribution of more child benefit, more child responsibility, and more child complicity in hypothetical child molestation incidents is also in line with Ward's (2000) theory. According to Ward (2000), networks of offense-supportive cognitions underlie the predictions made by the CSO about their victims' desires and intentions and affect how CSOs interpret interpersonal cues. These offense-supportive interpretations in turn could lead to the sexual abuse of a child. However, cognitive and affective empathy were unrelated to attributions except for having problems with understanding another's emotional state (cognitive empathy) and the attribution of more child responsibility.

Nevertheless, in line with Ward's theory (2000), we tend to view offense-supportive cognitions and cognitive empathy as preceding an offense. Note that Gannon and colleagues (2007) stated that to support the concept of implicit offense-supportive cognitions that exist prior to an offense, researchers need to demonstrate that distorted beliefs lead to the misinterpretation of social information. Our study indeed showed that distorted beliefs are related to the end-stage products of misinterpretations, namely distorted attributions. However, offense-supportive cognitions may precede distorted attributions, follow from distorted attributions, or both. Yet, theoretically, it is unlikely that such cognitions merely follow from attributions. In the literature, cognitions and empathy are placed before an attribution or interpretation phase (Blake & Gannon, 2008; Ward, 2000; Ward et al., 1997), notwithstanding the possibility that attributions further strengthen preexisting offense-supportive cognitions or deficits in empathy.

Limitations

This study has a few limitations. First, this study took place in a neutral setting; however, it is possible that the expression of distorted cognitions and empathy deficits into behavior is indeed context dependent. The internal belief systems that offenders hold might be distorted; however, the external context might influence whether or how these internal beliefs are expressed behaviorally (Gannon & Polaschek, 2006; Ward & Casey, 2010). This context dependency may also hold for the empathy or interpretation process, which might be more deficient when a CSO is sexually aroused (Ward et al., 2006) or in a real-life situation. However, as we did not measure the degree to which the CSOs experienced sexual arousal or emotions during the study, we cannot conclude about the influence that certain affective states could have had on the different cognitive processes.

In addition, a hypothesized social interaction with a described emotion may not enable a CSO to actually experience the child's emotion, which could explain the absence of relations between empathy and the interpretation process. Second, questions about empathy, offense-supportive cognitions, and interpretations relied on self-reports and were general and not related to the offenders' own victim(s) or offense experience(s). However, CSOs' cognitions have been found to be particularly distorted when they talked about their own offense (Neidigh & Krop, 1992), and self-reports are prone to social desirability. Third, the fact that no distinction could be made between different subtypes of child CSOs may hinder the generalizability of the findings across a broader spectrum of CSOs. On the other hand, it would be almost impossible to obtain a representative sample of this CSO population, so the current sample is a good start to study the relationships between CSOs' offense-supportive cognitions, empathy, and interpretations. Nevertheless, a larger sample might not only represent a broader spectrum of CSOs but also detect significant relationships that could not be detected with the current sample.

Clinical Implications

Although the current focus of sex offender treatment programs is already aimed at detecting and restructuring offense-supportive cognitions and distorted schemas, the importance of changing such cognitions is further highlighted by our study. Another clinical implication is that treatment programs should focus more intensely on changing the distortions with respect to understanding the emotional state of another and the interpretation of children's behavior. Clinicians should detect which faults CSOs make in their attributions, what is driving these faulty attributions, and offer multiple alternative attributions of children's behavior. Furthermore, as offense-supportive cognitions and empathy deficits might only be activated in certain risk

situations, it is also very important to detect which contextual factors then have resulted in the sexual abuse of a child and identify situational aspects for treatment (Ward & Casey, 2010).

Conclusions

Results of this study suggest that CSOs' cognitions that justify sexual offending against children and problems with understanding another's emotional state indeed affect how CSOs interpret behavior of children, as hypothesized by Ward (2000) and Gannon and colleagues (2007). Although this study could not examine when maladaptive cognitive processes have developed, having cognitions that justify sexual offending against children, having problems with understanding another's emotional state, and attributing more child responsibility, child benefit, and child complicity in child molestation incidents could contribute to the offending process. Once offense-supportive cognitions have been developed, either before or after an offense, such cognitions seem to diminish the threshold for sexual assault by facilitating distorted interpretations (assigning more cooperation and willingness of the victim in a child molestation incident). Such distorted processes could support and facilitate preconditions that have to be met to commit a future offense, as theorized by Finkelhor (1984).

Future Research

To further clarify the role of offense-supportive cognitions, empathy, and the interpretation process in the offending process of CSOs, future studies should examine these constructs in more realistic situations or with more realistic test stimuli. For example, cognitive processing might be more strongly driven by maladaptive schemas, offense-supportive cognitions, or empathy deficits by showing videos or virtual reality simulations using child avatars in which the offenders are sexually aroused than in experimental settings. A further advantage of using child avatars is that they can be developed according to the sexual preference of each participant (e.g., age, gender, skin color). This way, we can identify the processes that lead to an offense more carefully and aim treatment at prevention of the activation of such processes. The use of child avatars in virtual reality simulations can also be a promising tool in the treatment and evaluation of CSOs.

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