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Assessment and Treatment of Distorted Schemas in Sexual Offenders

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Review

Abstract

The aim of this review is to examine the literature related to the assessment and treatment of sex offenders' distorted schemas. Where appropriate, the review draws upon current insights from the field of social cognition to aid in the critical evaluation of the findings. First, the review considers the various different methodologies for assessing distorted schemas, discussing their strengths and limitations. Second, the review examines the work related to the treatment of sex offenders' schemas. Suggestions for future research, and the implications for clinical practise, are highlighted in the paper.

Keywords: schemas, sex offenders, distorted cognitions, schema therapy, indirect measures

Introduction

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Researchers and clinicians have frequently noted that some sex offenders show evidence of distorted, offense-supportive thinking patterns. For example, a child molester may state that sexual activity causes no harm to children, or a rapist may describe how women exist to meet the needs of men. Such cognitions are regarded as an important dynamic (changeable) risk factor for sexual offending (Thornton, 2002) and are commonly referred to as *cognitive distortions* (Abel, Becker, & Cunningham-Rathner, 1984), and have been defined as post-offense rationalizations and justifications to account for their sexually deviant interests and behavior (Maruna & Mann, 2006). This popular conceptualization has guided treatment, in that, offenders, historically, have been encouraged to take responsibility for their offenses (Salter, 1988). Based on insights from the field of social cognition, more recently, the topic of sex offender cognition has developed into a more complex subject matter. For example, Ward, Hudson, Johnston, and Marshall (1997) note that *cognitive structures* (i.e., schemas) that give rise to *cognitive products* (i.e., conscious thoughts and self-statements) via *cognitive processing*. There is a growing consensus that [distorted] cognitive structures (i.e., schemas should be the primary target for clinicians (Dean, Mann, Milner, & Maruna, 2007; Ó Ciardha & Gannon, 2011). This is because they are regarded as more psychologically meaningful than post-offense rationalizations (Mann, Hanson, & Thornton, 2010). In that schemas are thought to give rise to distorted interpretations and thoughts (Mann & Beech, 2003), contribute to the onset of sexual offending (Ó Ciardha & Gannon, 2011), and influence sexual recidivism (Thornton, 2002). Therefore, in this review, we will focus specifically on the assessment and treatment of sex offenders' underlying schemas. We will now discuss the schema concept in more detail.

Schemas defined

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3 A *schema* is a cognitive structure defined as a network of learned associations (Bem, 1981)
4 that guide attention, inform perceptions, and save mental energy by providing shortcuts to
5 interpreting incoming stimuli (Fiske & Taylor, 1984). The processes that give rise to such
6 capabilities are said to occur automatically (Kahneman, 2011). That is, when a certain
7 stimulus is encountered, it automatically activates (or primes) a particular association in one's
8 cognitive network (i.e., schema). The pattern of activation will depend largely on the
9 cognitive availability of the schema (Tversky & Kahneman, 1973). Importantly, automatic
10 reactions resulting from the activation of schematic associations provide the basis for
11 people's *beliefs* (Gilbert, 1991; Gawronski & Bodenhausen, 2006; Kahneman, 2011). For
12 example, a response elicited by the activation of a child-sex association may be transformed
13 into the propositional belief "Children want sex". Such beliefs may be '*unbelieved*' if they
14 are rejected on the basis of deliberate evaluation - a more effortful process that involves
15 consciously evaluating whether the initial belief is true or false (Gawronski & Bodenhausen,
16 2006); Gilbert, 1991). Thus, according to this work, schematic associations are not
17 synonymous with beliefs, but instead provide the basis for beliefs. This difference indicates
18 that while schemas may exist outside of conscious awareness, beliefs do not (Gilbert, 1991).
19 The important point here is that an automatic, schema-driven belief can differ from a
20 propositional belief based on deliberate evaluation (see Moran & Bar-Anan, under review).
21 However, this does not mean that automatic, schema-driven cognition never influences
22 behavior, because under time pressure or during times of mental effort (i.e., when cognitive
23 resources are too busy or low to engage in controlled thought), people rely more on automatic
24 beliefs (Shiv & Fedorikhin, 1999). This distinction will be referred to where relevant when
25 discussing the assessment and treatment of schemas.
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55 56 **Schemas and sexual offending** 57 58 59 60

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3 In relation to sexual offending, distorted schemas produce distorted beliefs or evaluations
4 when a relevant stimulus is encountered (Mann & Beech, 2003). Ward (2000) proposed that
5 sex offender schemas should be thought of as *implicit theories*¹; constructs that, like scientific
6 theories, are used to explain, predict, and interpret interpersonal phenomena. According to
7 Ward (2000), sex offenders' schemas can give rise to beliefs at the *general* level (i.e., general
8 beliefs about the nature of people and world), the *middle* level (i.e., beliefs about categories
9 of people, such as women or children), and the *specific* level (i.e., beliefs about a particular
10 victim). Ward notes that general and middle-level beliefs are most important as they form the
11 foundation of offenders' interpretation of victims' actions and mental state.
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23 By examining the items of cognitive distortion questionnaires, Ward and Keenan
24 (1999) and Polaschek and Ward (2002) proposed five core schemas held by some child
25 molesters and rapists, respectively. For child molesters, these include: (1) *Dangerous world* –
26 generating beliefs that adults are hostile and threatening compared to children; (2)
27 *Entitlement* – generating beliefs that one is entitled to do what they want, due to feeling
28 superior and more important than others; (3) *Uncontrollability* – generating beliefs that the
29 individual has no control over their life circumstances; (4) *Children as sexual beings* –
30 generating beliefs that children both need and desire sexual pleasure, and are able to make
31 informed decisions related to sexual behavior; and (5) *Nature of harm* – generating beliefs
32 that sexual activity with children is essentially harmless (Ward & Keenan, 1999).
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45 For rapists, Polaschek and Ward (2002) proposed a set of schemas that have clear
46 parallels with those proposed for child molesters, these include: (1) *Dangerous World*; (2)
47 *Entitlement*; and (3) *Male Sex Drive is Uncontrollable*. The other two refer specifically to
48 women; namely, (4) *Women as Sex Objects* - generating beliefs that women constantly desire
49 sex, even if it is coerced or violent; and (5) *Women are Unknowable* - generating beliefs that
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58 ¹ Note, to remain consistent, we will continue to use the term 'schema' throughout the paper
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3 women are inherently different from men, and that these differences cannot be readily
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5 understood by men.
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7 From this, child molesters and rapists are seen to both hold schemas underpinning
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9 general-level beliefs about the world, a sense of entitlement, and a lack of control. These
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11 three schemas are non-sexual (Gannon, Keown, & Rose, 2009) and are thought to play a role
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13 in promoting a general anti-social orientation (Polasheck & Ward 2002), an important factor
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15 predictive of sexual reoffending in some offenders (Hanson & Morton-Bourgon, 2005).
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17 Conversely, the schemas that generate middle-level beliefs in child molesters (e.g., that
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19 children enjoy sex) and rapists (e.g., that women are constantly sexually receptive) are related
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21 more to their respective type of offending (Beech, Ward, & Fisher, 2006). We will now
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23 examine the literature related to their assessment.
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30 **Assessment of distorted schemas**

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32 The accurate assessment of a schema is difficult as individuals are thought to lack
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34 introspective access to their content (Mann & Beech, 2003). Nevertheless, attempts have
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36 been made using a number of strategies. For example, there have been some attempts at using
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38 case file information to identify offense-supportive schemas, with some success (Bennett,
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40 2011; Smid, 2010). Also, 'life-maps' are reported as being useful as they can highlight
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42 recurring events that may be schema-driven or that may have created distorted schemas
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44 (Mann & Shingler, 2006; Milner & Webster, 2005). However, the most common forms of
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46 assessment within the literature are interviews, psychometrics, and indirect measures. These
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48 three main methodologies will be discussed.
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54 **Interviews**

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3 Interviews are a potentially useful way of assessing offenders' distorted schemas, as they
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5 elicit rich data. For example, by asking broad, open-ended questions about an offender's
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7 history, offense chain, and general daily functioning, information can be gained that may
8
9 suggest the influence of a schema. Questions can also be framed to directly address core
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11 schemas, such as asking about their views on adult relationships, whether they feel in control
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13 of their lives, and so forth. Further, asking about such topics are likely to activate the relevant
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15 schemas, (Keown et al., 2010) suggesting that that offenders' answers may be schema-driven.
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17 Indeed, interviews using these types of questions have been conducted with sex offenders, the
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19 results of which provide corroboration for the schemas previously described. For example,
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21 Marziano, Ward, Beech, and Pattison (2006) interviewed 22 child molesters and found
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23 evidence for all five of Ward and Keenan's schemas, with the most prevalent being *Children*
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25 *as Sexual Beings*. More recently, Keown, Gannon, and Ward (2010) interviewed 33 child
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27 molesters and found evidence for all five schemas, with *Children as Sexual Beings*, *Nature of*
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29 *Harm*, and *Uncontrollability* most prevalent. Beech, Parrett, Ward and Fisher (2009) found
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31 evidence for these five schemas in female child molesters.
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36 As for interviews with rapists, the schemas proposed by Polaschek and Ward (2002)
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38 have been corroborated. For example, Polaschek and Gannon (2004) found evidence for all
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40 five schemas, although they renamed *Women are Unknowable* as *Women are Dangerous* as
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42 women were often described as malevolent as well as unpredictable. The most prevalent
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44 schemas were *Women are Dangerous*, *Women as Sex Objects*, and *Entitlement*. In another
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46 study, Beech, Ward, and Fisher (2006) interviewed 41 rapists and found evidence for all five
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48 schemas, with *Dangerous World* and *Women as Sex Objects* most common. They also found
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50 that the presence/absence of certain schemas was related to certain rapist subtypes,
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52 demonstrating how cognition may differ due to offender heterogeneity. For example,
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54 violently motivated rapists predominantly held *Dangerous World*; sexually motivated rapists
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3 predominantly held *Women as Sex Objects*; and sadistically motivated rapists held both
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5 *Dangerous World* and *Women as Sex Objects*. In addition, these five rape-related schemas
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7 have been identified, via interviews, in sexual murderers (Beech, Fisher, & Ward, 2005).
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10 These studies suggest that interviews are useful for identifying schemas. However,
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12 there is variation regarding which schemas are most prevalent. Also, the data gained from
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14 interviews is based on offenders' self-statements and so could also reflect a deliberate,
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16 explicit attitude; socially desirable responding; excuse-making (particularly when speaking
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18 about their offense); an error in memory; or an effect of treatment. As there is no way to
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20 differentiate between these possibilities, researchers and clinicians should be cautious when
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22 interpreting interview data.
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24 25 26 27 **Psychometric assessment**

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29 Psychometric measures are probably the most common method of assessing distorted
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31 cognition. Most of these measures involve a list of items thought to reflect a distorted belief.
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33 Respondents are required to state how strongly they agree or disagree with each item, usually
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35 on a Likert-type scale. A number of different measures have been constructed to assess the
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37 distorted cognition of both child molesters and rapists. Some of the most common measures
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39 for CM cognition include: the *MOLEST scale* (Bumby, 1996); *Abel and Becker's Cognition*
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41 *Scale* (ABCS, Abel et al., 1989); the *Hanson Sex Attitude Questionnaire* (HSAQ; Hanson,
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43 Gizzarelli, & Scott, 1994); the *Cognitive Distortions and Immaturity Scale (CDI)* from the
44
45 Multiphasic Sex Inventory (Nichols & Molinder, 1984); *Offenses Against Children Scale*,
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47 from the *Questionnaire on Attitudes Consistent with Sexual Offending* (QACSO; Lindsay,
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49 Whitefield, & Carson, 2007); and the *Cognitive Distortions Scale of the Children and Sex*
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51 *Questionnaire/Beliefs About Children scale* (Beckett, 1987). Studies using these measures
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53 indicate that child molesters produce higher scores relative to comparison groups (Beech et
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3 al., 1999; Craig, Thornton, Beech & Browne, 2007; Hanson et al., 1994; Keown et al., 2010).
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5 More recently, Mann, Webster, Wakeling, and Marshall (2007) developed a brief, 18-item
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7 measure the *Sex with Children* (SWCH) scale. Compared to rapists and non-offenders, child
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9 molesters scored more highly, as did high-risk molesters compared to low-risk molesters.
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12 Questionnaires commonly used to assess offense-supportive cognitions in rapists
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14 include: Burt's (1980) *Rape Myth Acceptance*, *Adversarial Sexual Beliefs*, and *Acceptance of*
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16 *Interpersonal Violence* scales; the *Hostility Towards Women* scale (Check, Malamuth, Elias,
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18 & Barton, 1985); the *Attitudes Towards Women Scale* (Spence, Helmreich, & Stapp, 1973);
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20 and Bumby's *RAPE scale* (Bumby, 1996). There is some limited research showing that
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22 rapists endorse the statements on these measures more than non-rapists (Scott & Tetreault,
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24 1987). However, the majority of the research indicates that rapists do not significantly differ
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26 from sexual murderers, violent offenders, or child molesters on these scales (Beech, Oliver,
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28 Fisher, & Beckett, 2005; Bumby, 1996; Pervan & Hunter, 2007; Scully, 1990). However, a
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30 meta-analysis of 39 studies found that rape-related cognition, as measured by some of the
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32 measures outlined above, was a strong predictor of sexual aggression (Murnen, Wright, &
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34 Kaluzny, 2002).
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39 The issue is that for these measures to be useful tools for assessing schemas, the items
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41 must reflect the schemas that sex offenders are thought to hold. To investigate this, Gannon et
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43 al. (2009) examined the extent to which the 167 items from the six CM distortion scales
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45 mentioned above (excluding the SWCH scale) reflected Ward and Keenan's five schemas.
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47 They found that the highest percentage of items were classified as relating to *Children as*
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49 *Sexual Beings* (32%), followed by *Nature of Harm* and 'Unclassified' (each 23%). The non-
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51 sexual schemas of *Entitlement*, *Dangerous world*, and *Uncontrollability* were greatly
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53 underrepresented (9%, 8%, and 5%, respectively). Similarly, a factor analysis of the SWCH
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55 scale produced two factors consistent with the *Children as Sexual Beings* and *Nature of*
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3 *Harm* schemas (Mann et al., 2007), further demonstrating the underrepresentation of non-
4 sexual schemas. Unfortunately, researchers have yet to group the items of rape-related scales
5 into the five rape-related schemas. However, by examining the questionnaire items more
6 closely and referring to the relevant literature, some of the measures do appear to reflect
7 factors consistent with rape-related schemas. For example, a factor analysis of Bumby's
8 RAPE scale produced two factors that both comprise items consistent with *Women as Sex*
9 *Objects* (Hermann, Babchishin, Nunes, Leth-Steensen, & Cortoni, 2012).
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18 From this research, commonly used psychometrics appear to primarily reflect middle-
19 level beliefs (i.e., those related to children/women and sex). This suggests that clinicians may
20 be unintentionally ignoring offenders' non-sexual distorted cognition during dynamic risk
21 assessments. A more recent psychometric – the *My Life* questionnaire – may be useful here
22 (Mann & Hollin, 2010). This scale is based upon offenders' self-reported explanations for
23 their offending and is thought to measure distorted schemas. Factor analysis shows the scale
24 is comprised of two factors; *Dominance* (related to a need for respect and desire for revenge)
25 and *Disadvantaged* (related to beliefs about being damaged and used by others). According
26 to the authors, the latter factor is consistent with the *Dangerous world* schema, and sex
27 offenders and non-sex offenders were found to score higher on this factor than non-offenders.
28 However, the Dominance factor also shares some parallels with *Dangerous World*, as people
29 with this schema find it necessary to fight back and achieve dominance over people (Ward,
30 2000). Thus, with further validation, this measure may be a useful addition to the assessment
31 of distorted cognition, as it provides a measure of non-sexual, general-level beliefs (such as
32 those related to 'grievance thinking' - see Barnett, 2011).
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51 There have also been some attempts made to construct questionnaires designed
52 specifically to measure all five of Ward and Keenan's schemas. For example, Goddard
53 (2006) developed the *Implicit Theories Questionnaire* (ITQ), a 204-item scale that measures
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3 how strongly respondents endorse statements that relate to one of the five schemas. Jones and
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5 Vess (2010) tested the ITQ on a sample of 30 child molesters and found *Dangerous World* to
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7 be most strongly endorsed. However, as there were no comparison samples, it is unknown
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9 how these scores compare to non-offenders or other sex offenders. Howitt and Sheldon
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11 (2007) devised a similar questionnaire comprised of 39-items and tested it on a sample of
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13 Internet offenders, contact child molesters, and mixed offenders (i.e., contact child molesters
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15 & internet offenders). They found that, across all offender groups, items related to *Dangerous*
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17 *World* and *Uncontrollability* were the most strongly endorsed. They also found that Internet
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19 offenders endorsed more statements related to *Children as Sexual Beings* than contact
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21 offenders. A consistent finding across both studies is that items related to *Dangerous World*
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23 are strongly endorsed. This demonstrates an advantage of using measures designed
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25 specifically to assess all five schemas; that is, they address non-sexual schemas that are
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27 underrepresented in other distortion scales.
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32 Despite these observations, there are a number of important issues regarding the use
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34 of psychometrics. First, despite the number of cognitive distortion psychometrics that exists,
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36 few have properly been empirically tested for their risk assessment and psychometric
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38 properties. For a psychological test to be useful it must have been standardized on the
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40 population it will be used with and provide normative data to which an individual can be
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42 compared (Craig & Beech, 2009). However, many tests that assess distorted beliefs in sex
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44 offenders frequently lack standardization with appropriate norms, making any comparisons
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46 questionable. Second, self-report measures are highly susceptible to social desirable
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48 responding. Gannon, Keown, and Polaschek (2007) showed that extrafamilial child
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50 molesters' responses on a distortion questionnaire increased after they were made to believe
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52 they were being monitored for faking. This suggests that offenders were initially being
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3 dishonest. Note, however, that the change in offenders' responses chiefly involved
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5 disagreeing less to items, as opposed to agreeing more (see also Keown et al., 2010).
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8 This leads on to the final problem, which is that using self-report measures to assess
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10 schemas is intrinsically problematic. While schemas are largely inaccessible to conscious
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12 awareness (Mann & Shingler, 2006), the reactions (i.e., cognitive products) elicited by the
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14 activation of schemas tend provide the basis for evaluative judgments, such as those asked on
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16 psychometrics (Gawronski & Bodenhausen, 2007). Thus, it is possible for questionnaires to
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18 tap schema content. However, "people also sometimes reject their affective reactions as a
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20 valid basis for an evaluative judgment when these reactions are inconsistent with other
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22 momentarily considered propositions" (Gawronski & Bodenhausen (2007, p. 696). Thus, an
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24 offender's positive reaction to the statement "Children are willing to have sexual activity with
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26 adults" may be rejected if it is inconsistent with other considered propositions (i.e., those
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28 learnt through treatment). On the surface, therefore, it may seem as though an offender does
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30 not harbor a distorted schema when in fact they do. The issue for clinicians is that there is no
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32 way to distinguish this kind of responding from that provided by someone who has no
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34 distorted schemas, or from someone who has lied. In light of this, it may be more beneficial
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36 to use indirect measures that are able to bypass deliberated responding.
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43 **Indirect measures**

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45 Indirect measures provide an outcome (i.e., response latency) that a researcher may infer as
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47 being indicative of an underlying schema (De Houwer & Moors, 2010). There are a wide
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49 range of indirect measures that have been used to assess cognition in sex offenders (for a
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51 review see Snowden, Craig, & Gray, 2011). Some of these measures have been adapted to
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53 specifically assess distorted schemas. For example, the *Lexical Decision Task* (LDT; Meyer
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55 & Schvaneveldt, 1971) has been adapted to specifically measure Ward and Keenan's five
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3 schemas in child molesters (Keown, Gannon, & Ward, 2008). For this task, participants must
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5 quickly decide whether a string of letters forms a word or not after having read an incomplete
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7 sentence (i.e., prime). Keown et al. (2008) hypothesized that once a schema was primed by
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9 an incomplete sentence, (i.e., “Having sex with children won’t do them any”), Child
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11 molesters would respond faster to words that completed the sentence in a schema-consistent
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13 manner (e.g., *harm*) relative to non-consistent words (e.g., *good*). However, the authors found
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15 evidence for only one of the schemas; namely, *Uncontrollability*. This suggests that the LDT
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17 may not be the best tool for identifying distorted schemas. However, more research is
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19 warranted before any solid conclusions are made.
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23 A recently developed indirect measure called the *Implicit Relational Assessment*
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25 *Procedure* (IRAP; Barnes-Holmes et al., 2006) was adapted to assess *Children as Sexual*
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27 *Beings* schema (Dawson, Barnes-Holmes, Gresswell, Hart, & Gore, 2009). In this task,
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29 offenders are presented with stimuli related to one of four category pairings (i.e., child-
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31 sexual, child-nonsexual, adult-sexual, and adults-nonsexual) and are required to respond with
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33 ‘true’ or ‘false’. These relational responses incite participants to deliberately evaluate the
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35 stimuli. For example, when “*Sexually Aware*” is presented during a trial with ‘child-sexual’
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37 as the category label (Dawson et al., 2009), participants will evaluate whether they consider
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39 children to be sexually aware. Child-sexual stimuli are presumed to produce an immediate
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41 response in child molesters that will provide the basis for their evaluation. Thus, under time
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43 pressure, offenders are likely to agree with the belief. Rather than freely responding,
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45 however, participants are instructed to respond in a manner that is either consistent or
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47 inconsistent with societal norms. Thus, using the example above, blocks involving trials that
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49 are inconsistent with societal norms would require participants to press ‘true’, whereas blocks
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51 involving trials consistent with social norms would require participants to must press ‘false’.
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3 Here, non-offenders would be expected to respond slower during inconsistent blocks
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5 compared to consistent blocks relative to child molesters.
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8 In their study, Dawson et al. (2009) found that both child molesters and non-offenders
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10 showed a bias towards adults as sexual and children as not sexual. However, the bias was
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12 significantly weaker in child molesters. Also, child molesters did not show any bias for
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14 confirming or denying child-sexual beliefs. It is important to highlight that, because the IRAP
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16 involves confirming and denying beliefs, it is targeted more at the deliberate (explicit)
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18 evaluation of a belief rather than its underlying associations (Dawson et al., 2009; Gawronski
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20 & De Houwer, *in press*). Thus, although child molesters neither affirmed nor rejected child-
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22 sexual beliefs, it does not rule out the possibility that they hold child-sex schematic
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24 associations. Therefore, tasks that target 'raw' associations may prove more useful in trying
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26 to assess offense-supportive schemas.
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30 The most popular indirect measure of this kind is the *Implicit Association Task* (IAT;
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32 Greenwald, McGhee, & Schwartz, 1998). Thus, on this basis, we will discuss the IAT in
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34 more depth. In brief, the IAT is a categorization task that uses response latencies to infer how
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36 strongly two concepts are associated in long-term memory (e.g., flowers and pleasant)
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38 relative to an opposing association (i.e., insects and pleasant). Since schemas are
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40 conceptualized as networks of associations held in memory, it can be argued that a sex
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42 offender holding the *Children as Sexual Beings* schema will harbor strong associations
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44 between children and sex. Arguably, the IAT would be able to assess this schema by
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46 measuring the strength of child-sex associations held in child molesters' memory.
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50 Mihailides, Devilly, and Ward (2004) were among the first to use the IAT to
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52 investigate the associative nature of schemas related to child molesters: *Children as Sexual*
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54 *Beings, Uncontrollability, and Entitlement*. Relative to non-sex offenders and non-offenders,
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56 child molesters were found to show stronger 'children-sex' and 'losing control-sex'
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3 associations. In addition, child molesters demonstrated stronger ‘mine-sex’ associations than
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5 non-offenders. These three associations can be seen as being indicative of the presence of
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7 their respective underlying schema. Since then, a number of researchers have used the IAT to
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9 find evidence for strong child-sex associations in child molesters (Banse, Schmidt, &
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11 Clarbour, 2010; Brown, Gray, & Snowden, 2009; Gray, Brown, MacCulloch, Smith, &
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13 Snowden, 2005; Nunes, Firestone, & Baldwin, 2007; Steffens, Yundina, & Panning, 2008).
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15 Each of these IAT studies differ on some methodological point, such as stimuli type (words,
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17 pictures), category labels (‘sex’, ‘sexy’, ‘erotic’, ‘sexually exciting’), and number of blocks
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19 (two, five, or seven). However, Babchishin, Nunes and Hermann (*in press*) conducted a
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21 meta-analysis on these six published studies, as well as five other unpublished IAT studies,
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23 and found that child-sex IATs (regardless of their methodological differences) can efficiently
24
25 distinguish child abusers from non-abusers. There is also some support for child-sex
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27 associations (albeit using a pen-and-paper IAT) in non-offending males who report sexual
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29 arousal towards low-force child abuse (Gannon and O’Connor, 2011).
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35 There is also evidence that the IAT is sensitive to the heterogeneity among sex
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37 offenders. For example, using Brown et al.’s (2009) IAT design, Bartels, Harkins, and Beech
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39 (*in preparation*) found a marginally significant difference between exclusively extrafamilial
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41 child molesters and a group of non-extrafamilial sex offenders, with the former
42
43 demonstrating a stronger child-sex association. In addition, hebephiles (i.e., those with child
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45 victims above 12 years) do not appear to show stronger child-sex associations (Brown et al.,
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47 2009) nor do female child molesters (Gannon, Rose, & Williams, 2009).
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51 This research indicates that the IAT is a promising tool for assessing offense-
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53 supportive schemas. However, there are a number of important issues to address. The first is
54
55 that IAT effects may be due to strong adult-not sex associations, rather child-sex associations
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57 (Snowden et al., 2011). Due to the IAT’s relative, rather than absolute, nature, researchers are
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3 unable to rule out this possibility. However, other measures have been devised to allow for
4
5 the assessment of all four possible associations, such as the *Sorting Paired Features* task
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7 (SPF; Bar-Anan, Nosek, & Vianello, 2009). This task allows all four associations to be
8
9 assessed in a single block. Stimuli are presented in pairs (e.g., 'School' and 'Orgasm') in the
10
11 middle of the screen and are sorted into their appropriate category pairing (i.e., child-sex,
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13 child-not sex, adult-sex, and adults-not sex) located in the four corners. Thus, in the example
14
15 above, the correct category would be 'child-sex'. In a recent study, Bartels et al. (*in*
16
17 *preparation*) used the SPF with child molesters to assess the four possible associations
18
19 described above. The results showed that exclusively extrafamilial child molesters associated
20
21 children and sex more strongly than the other three associations, whereas non-offenders and a
22
23 group of non-extrafamilial abusers associated adults and sex most strongly. Furthermore, the
24
25 strength of the child-sex association in extrafamilial child molesters was significantly
26
27 different to that of non-offenders ($p = .009$) and non-extrafamilial abusers ($p = .024$). The
28
29 non-offenders and non-extrafamilial abusers did not differ. This implies that some child
30
31 molesters' may harbor less cognitively accessible schemas or no distorted schemas.
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36 The second issue with the IAT is that all studies have found differences at the group
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38 level, when, to be useful as an assessment tool, the IAT needs to be meaningful at the
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40 individual level (Brown et al., 2009). A problem with trying to detect differences at the
41
42 individual level comes from counterbalancing the blocks of an IAT. This is common practice
43
44 to cancel out order effects at the group level. However, such effects still remain at the
45
46 individual level. Thus, while some have attempted to discriminate offenders at the individual
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48 level in studies using between-subjects counterbalancing (e.g., Gray et al., 2005), this should
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50 be avoided as order effects are present at the level of the individual (Messner & Vosgerau,
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52 2010). Brown et al. (2009) attempted to avoid this by holding blocks constant for all
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54 participants; a strategy that Messner and Vosgerau (2010) advise against because switching
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3 between fixed blocks will simply inflate or diminish IAT scores. They suggest
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5 counterbalancing blocks *within*-subjects up to 3-4 times, as they found that this eliminates
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7 order effects at the individual level. It is worth noting that in Brown et al.'s study, the adult-
8
9 sex block was always presented first, suggesting that an association between adults and sex
10
11 would have been inflated. However, they still found pedophilic child molesters evidenced
12
13 stronger child-sex associations. Thus, this is an important area to research further as it has
14
15 direct implications for the clinical assessment of offender cognition.
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19 Third, there are issues with regards to what the child-sex IAT is actually measuring.
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21 This has major implications because if the child-sex IAT becomes capable of discriminating
22
23 offenders at the individual level, assessors will need to know on what basis this occurs.
24
25 Traditionally, the IAT was designed to assess associations that may underlie implicit attitudes
26
27 (Greenwald et al., 1998). From this perspective, the child-sex IAT arguably measures
28
29 associations that underpin attitudes about children and sex. Despite this, many researchers
30
31 view the child-sex IAT as measuring deviant sexual interests (e.g., Banse et al., 2010).
32
33 Acknowledging the overlap, Ó Ciardha (2011) argues that the IAT most likely assesses the
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35 schemas that underlie deviant interests. Thus, more research is needed to determine the
36
37 construct validity of child-sex IATs.
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41 Fourth, it is clear that most IAT studies have focused on assessing cognition related to
42
43 sex. Even in Mihailides et al.'s (2004) study, where two non-sexual schemas were assessed
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45 (*Entitlement* and *Uncontrollability*), the authors operationalized each schema in a sexual
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47 manner (i.e., 'entitlement to sex' and 'uncontrollability of sexuality'). Therefore, future IAT
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49 studies should aim to assess non-sexual schemas. For example, an IAT designed to assess
50
51 how strongly trust is associated with children relative to adults may be indicative of a
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53 *Dangerous world* schema (see Gervais, 2011 for an example of a trust-IAT). Furthermore,
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55 the focus on child-sex associations has also meant that schemas related to other sex offenders
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3 have been ignored. The IAT has been used to show that rapists hold a less negative attitude
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5 towards rape than non-rapists (Hermann, McPhail, Nunes, & Sewell, 2010), although it is
6
7 unclear whether this is indicative of an underlying schema (e.g., *Women as sex objects*).
8
9 Similarly, more attention should be paid to offender heterogeneity, given that only a few IAT
10
11 studies have addressed this issue. This is important because not all sex offenders hold
12
13 distorted schemas and there is heterogeneity within different offender groups. For example,
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15 Beech et al. (2006) found that different rapist subtypes held certain schemas more strongly
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17 than others. Thus, researchers should endeavor to use the IAT to assess the schemas of other
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19 sex offenders and of sex offender subtypes.
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23 To summarize, there are an array of methods that can potentially be used to identify
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25 distorted schemas. The use of interviews allows a range of topics to be explored, providing
26
27 possible clues to schematic content. Questionnaires, particularly those designed to assess all
28
29 of the proposed schemas, also provide some indication of distorted schemas. However, the
30
31 data from both of these approaches have to be interpreted cautiously as they require
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33 deliberate thought processes, which can lead to dishonest responding or a response that
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35 reflects a consciously derived belief. Indirect measures, such as the IAT, offer a promising
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37 means for assessing distorted schemas as they target the associations that underlie schemas;
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39 are less susceptible to faking; and do not allow for deliberated thought. So far, IAT research
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41 has focused on male child molesters, with results demonstrating that they associate children
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43 and sex. However, more research is still needed to determine the construct validity of the
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45 child-sex IAT; whether it can discriminate offenders at the individual level; whether the IAT
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47 can assess non-sexual schemas; and whether it is useful with other sex offenders.
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51 Additionally, there are other indirect measures that need to be tested and developed further
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53 (e.g., LDT, SPF), as well as some promising new measures that are yet to be tested with sex
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55 offenders (e.g., the *Function Acquisition Speed Test* or FAST; O'Reilly, Roche, Ruiz, Ryan,
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3 & Champion, *in press*). In the next section, we will briefly review the literature pertaining to
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5 the treatment of distorted schemas.
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8 9 10 **Treatment of distorted schemas**

11 Most sex offender treatment programs (SOTPs) in North America and the UK use a
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13 cognitive-behavioral approach (Beech, Fisher, & Beckett, 1998; McGrath, Cumming,
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15 Burchard, Zeoli, & Ellerby, 2010), as there is strong empirical support for its efficacy
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17 compared to other approaches (Hanson et al., 2002; Lösel & Schmucker, 2005; Robertson,
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19 Beech, & Freemantle, in preparation; Woodrow & Bright, 2011). The main aim of the
20
21 cognitive-behavioral approach is to change problematic behavior by addressing the
22
23 cognitions that underlie it. Thus, addressing distorted schemas, and the beliefs and cognitions
24
25 they generate, falls central to a cognitive-behavioral approach. Surprisingly, there is a paucity
26
27 of research examining the effects of cognitive-behavioral treatment on distorted cognition
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29 and schemas. However, some empirical evidence does exist. For example, sex offenders who
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31 completed a cognitive-behavioral program in Australia showed post-treatment reductions on
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33 Bumby's RAPE and MOLEST scales, as well as the subscales of Burt's Rape Myth scale
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35 (Mamone, Keeling, Sleeman, & McElhone, 2002). Also, in the UK, Beech et al. (2005) found
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37 that rapists and sexual murderers undergoing SOTP demonstrated reduced scores on
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39 Bumby's RAPE scale.
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45 A common procedure for treating sex offender cognition is 'cognitive restructuring'
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47 (Bumby, 1996). For example, in the USA, 90 % of community programs ($n = 329$) and 91%
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49 of residential programs ($n = 79$) use cognitive restructuring (McGrath et al., 2010). This
50
51 procedure typically involves helping offenders identify and challenge their distorted beliefs
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53 so that new ways of thinking can develop. A few studies have shown this method to be
54
55 effective. For example, Bumby (1996) found that, in combined sample of child molesters and
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3 rapists that underwent nine months of cognitive restructuring, scores on both the RAPE and
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5 MOLEST scales decreased in the first three months and again in the period between three and
6
7 six months. Similarly, in a sample of child molesters that underwent cognitive restructuring,
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9 Bickley and Beech (2003) found that approach-goal offenders showed a reduction in
10
11 distorted beliefs about sex and children. Also, the efficacy of an SOTP designed for sex
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13 offenders with deficits in cognitive and social functioning – which includes a component on
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15 modifying offense-supportive thinking – was recently evaluated (Williams, Wakeling, &
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17 Webster, 2007). Results showed that child molesters showed a marked reduction in their
18
19 beliefs about children and sex.
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23 Drake, Ward, Nathan, and Lee (2001) proposed a four-step framework for cognitive
24
25 restructuring designed to address Ward and Keenan’s five schemas that underlie distorted
26
27 thinking patterns. They argued that distorted cognitions should first be elicited, for example,
28
29 by having offenders describe their offense chain. Second, the identified cognitions should be
30
31 reframed as reflecting a particular schema (e.g., *Dangerous World*). Third, once identified,
32
33 the schemas should be addressed by helping offenders develop more realistic interpretations
34
35 of certain events and apply these interpretations to future situations. The final step is to
36
37 review whether any change has taken place. Thus, instead of focusing solely on surface-level
38
39 cognitions, this form of cognitive restructuring aims to address their underlying cause. As
40
41 Drake et al. (2001) note, this framework is analogous to schema-focused therapy (e.g.,
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43 McGinn & Young, 1996).
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48 Schema therapy is form of cognitive treatment that is now strongly advocated for use
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50 with sex offenders given the emphasis placed on addressing distorted schemas (Mann &
51
52 Shingler, 2006). It usually involves four stages of therapy: *Cognitive* (teaching basic
53
54 cognitive techniques to identify and contradict schema-driven thoughts); *Interpersonal*
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56 (where the clinician and group further challenge identified schema-driven thoughts);
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3 *Experiential* (e.g., having offenders role-play past experiences to recognize how their
4
5 schemas have developed and guided their subsequent processing of social and environmental
6
7 information); and *Behavioral* (practicing new adaptive schemas in real life using behavioral
8
9 experiments). In the UK, Her Majesty's Prison Service runs an Extended SOTP that employs
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11 this form of schema-focused therapy (Mann & Beech, 2003) and there is some, albeit limited,
12
13 support for its efficacy. For example, Thornton and Shingler (2001) found that program
14
15 completers demonstrated reductions in schema-related cognitions related to entitlement and a
16
17 view that women are deceitful.
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21 More recently, in a mixed sample of rapists and child molesters, Barnett (2011) found
22
23 that the Extended SOTP reduced self-reported grievance thinking, particularly for those who
24
25 scored highly on the measures. This is important because grievance thinking reflects a
26
27 *Dangerous World* schema (Mann et al., 2007; Ward, 2000). For example, Beech et al. (2006)
28
29 found that grievance-motivated rapists hold *Dangerous World* most strongly. In addition to
30
31 these few positive findings, some have reported less successful results. For example,
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33 Eccleston and Owen (2007) describe a treatment program that was developed just for rapists,
34
35 which involved identifying and modifying underlying schemas. In their initial group they
36
37 found evidence for *Dangerous World*, *Women as Dangerous* and, *Women as Sex Objects*, all
38
39 of which manifested in their attitudes towards female therapists. These schemas and the
40
41 cognitions they elicited were described as "intractable and extremely resistant to change" (p.
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43 148). However, this may have been largely due to process issues, such as offender collusion
44
45 and a lack of motivation (Eccleston & Own, 2007).
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50 It should be noted, however, that schemas have been acknowledged as being difficult
51
52 to change, particularly within structured, time-limited programs (Mann & Shingler, 2006).
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54 Thus, while attempts are made to help offenders create new schemas, such as via role-plays,
55
56 there is more emphasis on schema recognition and management (Mann & Shingler, 2006). In
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3 other words, offenders are instilled with the knowledge and skills necessary to recognize
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5 occasions when a distorted schema may be activated so as to interrupt or resist its influence.
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8 Based on the limited empirical research, schema-therapy appears to be useful for
9
10 treating distorted schemas. The major advantages are that it aims to directly tackle underlying
11
12 schemas, as opposed to post-hoc rationalizations, and that it offers a more tailored approach
13
14 to the treatment of offender cognition (Beech et al., 2006; Beech et al., 2005). However, there
15
16 are some issues that should also be addressed. First, there is a clear shortage of empirical
17
18 research investigating the treatment of sex offenders' distorted schemas. Second, the results
19
20 that do exist are all based upon psychometric assessment. As discussed earlier, the use of
21
22 psychometric measures to assess schemas is highly problematic. Treatment evaluators may
23
24 want to consider using indirect measures to assess schema changes. Third, it appears as
25
26 though process variables can have an effect on the treatment of distorted schemas (Eccleston
27
28 & Owen, 2007). Some notable examples include therapeutic style, group composition,
29
30 therapeutic climate, and motivation. Regarding *therapeutic style*, Thornton, Mann, and
31
32 Williams (2000) found, while hostile/confrontational therapists helped reduce offense-related
33
34 beliefs, warm/supportive therapists achieved this as well as changes in more general distorted
35
36 beliefs, such as those relating to the mistrust of women (c.f., *Women are Dangerous*) and
37
38 sexual entitlement (c.f., *Entitlement*). In terms of *group composition*, it has been suggested
39
40 that mixing rapists and child molesters decreases the risk that offenders will collude with one
41
42 another regarding their distorted beliefs (Harkins & Beech, 2008). Indeed, in their rapist-only
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44 program, Eccleston and Owen (2007) observed that rapists colluded with each other in terms
45
46 of supporting their distorted beliefs about women. However, Eccleston and Owen also note
47
48 that mixing rapists with child molesters may lead to certain beliefs not being effectively
49
50 addressed. Regarding *therapeutic climate*, Beech and Hamilton-Giachritsis (2005) found that
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52 a reduction in pro-offending beliefs (which included distorted beliefs about children and sex)
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3 was correlated with higher levels of group cohesiveness and expressiveness (i.e., the freedom
4 to act and express feelings in the group). Finally, *motivation* has been linked to successful
5 changes in distorted cognition. For example, Terry and Mitchell (2001) found that child
6 molesters who were not motivated to participate in treatment were less likely to show
7 changes in distorted cognition.
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14 Fourth, there are external elements to distorted cognition that also need to be
15 addressed. For example, Ward (2009) argued that the internal elements (e.g., schemas) of
16 human cognition form a functional relationship with certain elements of the external world,
17 resulting in a hybrid cognitive system. For sex offenders, external elements include
18 offenders' social and cultural environment; technologies such as deviant pornography; and
19 other people (e.g., consider the rapists' collusion and support of one another's distorted
20 beliefs reported by Eccleston and Owen, 2007). Thus, Ward advises that external elements
21 should also be identified and addressed when treating offenders' distorted cognition, so that
22 the therapeutic question turns from "How can I think differently" to "How can I live
23 differently" (p. 255).
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36 Fifth, there are some aspects of schema therapy that differ to the recent work on
37 cognitive structures. For example, drawing upon early work on schema therapy, Dean et al.,
38 (2007) state that therapists should help offenders weaken old schemas and strengthen new
39 ones. However, recent research in social cognition may require this to be reconceptualized.
40 As discussed earlier, activated schemas give rise to automatic beliefs that are endorsed unless
41 rejected on the basis of being false. Rejection of an automatic belief requires an individual to
42 momentarily (and consciously) reflect on other propositions (Gawronski & Bodenhausen,
43 2006). Indeed, it has been found that schema content (i.e., stereotypes) is more likely to
44 change if individuals are trained to consciously confirm counter-beliefs as opposed to reject
45 schema-driven beliefs (Gawronski, Deutsch, Mbirikou, Seibt, & Strack, 2006). Thus, it may
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3 be better to think of schema treatment as providing offenders with new, counter-schema
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5 propositions that: 1) can help in rejecting schema-related beliefs; and 2) if frequently
6
7 confirmed, will lead to changes in the original, distorted schema.
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10 Finally, despite many advocating the targeting of schemas (Dean et al., 2007; Maruna
11 & Mann, 2006; Ó Ciardha & Gannon, 2011; Drake et al., 2001), it would appear that very
12
13 few programs employ schema-therapy in North America (McGrath et al, 2010). In McGrath
14
15 et al.'s report, only 11% of 329 community programs and 9% of 79 residential programs in
16
17 the USA use schema therapy with adult sex offenders. Curiously, McGrath et al. found that
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19 90% of the community and 74% of the residential programs use schema therapy with
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21 adolescents and children who have sexually offended. Thus, more programs need to start
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23 incorporating schema therapy for adults.
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28 There are also some other relevant considerations to note. For example, there has been
29
30 increasing recognition that sex offender treatment should be delivered in a manner that
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32 promotes the values and rights of the offender, such as that outlined by the 'Good Lives
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34 Model' (GLM; Ward, Mann, & Gannon, 2007; Ward & Stewart, 2003). The GLM states that
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36 human beings all seek a set of primary "goods", which Ward and Maruna (2007) define as
37
38 states of mind, personal characteristics, activities, or experiences that are sought for their own
39
40 sake. For sex offenders, certain goods are sought in an inappropriate manner (e.g., seeking
41
42 *relatedness* through a sexual relationship with a child), are blocked, or are prioritized over
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44 others. According to the GLM, treatment should therefore involve assisting offenders in
45
46 devising a 'good lives plan' and equipping them with the necessary skills to appropriately
47
48 acquire their goods. Ward and Marshall (2007) state that an offender's good lives plan helps
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50 them construct a more adaptive 'narrative identity' that involves desisting from offending.
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52 Ward and Marshall note how this demonstrates peoples' ability to be reflective and an active
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54 agent in shaping their lives.
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3 Ward et al. (2007) note that many existing treatment modules already address an
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5 overarching good, which in the case of distorted schemas is the good of *knowledge*. This is
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7 because offenders are gaining an insight and understanding of their thinking patterns. Ward et
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9 al. (2007) also state that changing schemas that generate hostile beliefs (i.e., *Dangerous*
10
11 *World*) will help offenders acquire the good of *relatedness* and *inner peace*, as they will
12
13 experience more harmonious relationships and so experience less anger, respectively. They
14
15 also argue that treating schemas such as *Uncontrollability* will result in the acquisition of
16
17 *agency*, as offenders will feel more in control of their lives. Importantly, agency has recently
18
19 been shown to be a factor associated with ‘desistance’ (Farmer, Beech, & Ward, 2012). It
20
21 should be noted that Harkins, Flak, Beech, and Woodhams (2012) compared relapse
22
23 prevention and GLM approaches within a community-based SOTP and found no differences
24
25 in the proportion of individuals who demonstrated treatment change for pro-offending
26
27 attitudes. However, offenders who received GLM-based treatment did report that their
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29 attitudes about themselves and the future were more positive, which appeared to influence
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31 their motivation for future personal work.
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36 Some final considerations relate to addressing schemas in an indirect manner by
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38 treating different, yet related, factors. For example, Wood and Riggs (2009) found that child
39
40 molesters with an insecure attachment style (both preoccupied and fearful) showed more
41
42 distorted cognitions than those with a secure attachment. Thus, addressing attachment issues
43
44 in therapy may bring about positive changes in schemas. Similarly, Marziano et al. (2006)
45
46 found that child molesters who had been sexually abused during childhood evidenced
47
48 *Dangerous World* more than those who had not been abused. This suggests that effectively
49
50 addressing early abuse may help ameliorate these schemas (see Ricci, Clayton, & Shapiro,
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52 2006). Also, addressing self-regulatory problems that increase the probability of acting on
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3 schema-driven beliefs/thoughts (e.g., impulsivity; Mann & Beech, 2003) is likely to be a
4
5 useful strategy for schema-management.
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9 10 **Conclusions**

11
12 It has been proposed that when assessing and treating sex offenders' cognition, therapists
13
14 should target the underlying schemas that generate distorted beliefs rather than focus on post-
15
16 offense rationalizations. Thus, the aim of this review was to examine what is currently known
17
18 about the assessment and treatment of sex offenders' schemas. Current work from social-
19
20 cognitive psychology was drawn upon and referred to in order to facilitate informative
21
22 discussions on the two topics. With regards to schema assessment, there are a number of
23
24 available methodologies, with psychometrics being the most widely used. However, an
25
26 important observation is that general, non-sexual schemas are greatly underrepresented on
27
28 many self-report measures. This is an important point because such schemas promote general
29
30 anti-sociality, which is a strong predictor of sexual recidivism. Thus, by not being sufficiently
31
32 assessed, offenders who harbor non-sexual distorted schemas may leave therapy with
33
34 important criminogenic factors unaddressed. Recent measures such as the 'My Life
35
36 Questionnaire' offer some promise for assessing non-sexual schemas. Also, while
37
38 psychometrics offer some indication of schema content, it is difficult to differentiate low
39
40 endorsements based on propositional (conscious) processing from low endorsements based
41
42 dishonesty. A more promising route may be to use indirect measures, as they are less affected
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44 by these two factors. Thus, researchers should continue in to design, test, and develop a
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46 reliable and standardized indirect measure.
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52 The empirical literature on treating distorted schemas is a lot less than that on schema
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54 assessment. However, there is some indication that schema-focused therapy can reduce
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56 distorted, schema-driven beliefs that are measured psychometrically. However, as to whether
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3 these findings reflect a change in schema content is difficult to tell given the issues
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5 surrounding the use of psychometrics to assess schemas. Some recent suggestions have been
6
7 made that may increase the efficacy of schema-focused therapy. These include addressing
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9 external elements that are integrated into offenders' cognitive system, and delivering
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11 cognitive treatment in an approach-goal manner that focuses on promoting clients' strengths
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13 (i.e., acquiring primary goods). The idea of helping offenders become more reflective in
14
15 order for them to construct an adaptive narrative identity may be a particularly useful
16
17 treatment strategy for treating distorted cognition. This is because it shares some parallels
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19 with the social-cognitive idea of overriding schema-driven beliefs by considering alternate
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21 propositions (a reflective process). For instance, a person who has constructed a 'healthy
22
23 narrative identity' may reject/resist positive, schema-driven beliefs towards chocolate using
24
25 new propositions related to their new identity (e.g., "I want to get healthy"). Arguably, sex
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27 offenders with a new 'redemptive narrative identity' will be able to do same in relation to
28
29 their schema-driven beliefs about children/women.
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34 Other research indicates that certain process issues (e.g., motivation, therapeutic style)
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36 are important to consider when treating distorted beliefs, as are factors empirically associated
37
38 with distorted cognition (e.g., attachment, sexual abuse). Finally, it should also be noted that
39
40 not all sex offenders show evidence of distorted cognition suggesting that not all offenders
41
42 harbor distorted schemas. Thus, schema therapy should only really be offered to those who
43
44 demonstrate schema-driven beliefs. In sum, the treatment of distorted schemas is an
45
46 important and promising therapeutic goal. However, a lot of more work in this area needs to
47
48 be done to better understand the nature of sex offender cognition so that more sophisticated
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50 assessment tools and more effective treatment strategies can be developed.
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