

ASSESSING COGNITIVE DISTORTIONS IN SEX OFFENDERS: A REVIEW OF COMMONLY USED VERSUS RECENTLY DEVELOPED INSTRUMENTS

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Researchers studying cognitive distortions of sex offenders have focused most of their efforts into developing psychometrically robust measures of dysfunctional beliefs and attitudes. In this paper research is discussed concerning four commonly accepted and widely used measures, and four recently developed instruments. We conclude that although some questionnaires are able to discriminate between the target group and control groups, several are open to social desirability bias. For only one scale, the Child Molest Scale, ability to discriminate between a target group not promised anonymity and a control group was reported. Although this instrument may announce a new step in the domain of assessment of cognitive distortions, it is argued that future tests should tap automatic processing in an attempt to avoid contamination by social desirability factors.

Sexual offences against women and children constitute a distressingly and unfortunately actual prevalent social problem. The psychological and emotional costs to victims and their families, the high reoffending rates of some types of offenders, and the financial costs of incarceration all highlight the urgent need for effective research and treatment of this problem behavior (Furby, Weinrott, & Blackshaw, 1989; Hanson, Steffy, & Gauthier, 1993; Ward, Hudson, Johnston, & Marshall, 1997).

The research domain of sexual assault dealing with the offender part of the crime has adopted the study of cognitive factors since little more than a decade. Previously, research efforts were mainly dominated by theoretical constructs of deviant sexual arousal, heterosexual social skills, or the sexual and drug history of the offender (Marshall, 1996; Murphy, 1990; Segal & Stermac, 1990). Stimulated by the cognitive revolution in clinical psychology (Ingram & Kendall, 1986) and the switch from unidimensional to multi-factorial models in the study of sexual assault (Abel & Rouleau, 1989 in Abel, Gore, Holland, Camp, Becker, & Rathner, 1989; Malamuth, 1986; Segal & Stermac, 1990), research on cognitive factors gained in importance. This research in the domain of sex offending has typically concentrated on

The authors thank Stef Decoene and Luk Warlop for their valuable comments on earlier versions of this manuscript.

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cognitive distortions (Ward, McCormack, Hudson, & Polaschek, 1997).

After clarifying what may be understood by the concept 'cognitive distortions', its conceptual relevance will be highlighted. Next, eight scales designed to assess cognitive distortions in sex offenders are discussed: four widely used and commonly accepted and four recently developed questionnaires.

Cognitive Distortions

The concept 'cognitive distortions' is not only used in the literature of sex offending. It is widely used across domains in clinical psychology. To name only a few: the domain of the eating disorders (Krahn, 1990), the domain of anger (e.g., Deffenbacher, McNamara, Stark, & Sabadell, 1990), the domain of depression (e.g., Krantz, & Gallagher, 1990) and the domain of AIDS prevention (e.g., O' Gorman, Bownes, & Dinsmore, 1989). The overall meaning of cognitive distortions can be characterized in a first definition as *an incorrect mental transformation of reality*. They are termed cognitive distortions because they are not congruent with what is judged to be 'objective reality' by outsiders.

In the literature concerning sexual offending the term 'cognitive distortions' is used with regard to victims (e.g., Ryan, 1989) as well as to offenders (e.g., Abel, Becker, & Cunningham-Rather, 1984). Cognitive distortions of sex offenders are also labeled *offense supportive attitudes and beliefs* (Ward, McCormack, et al. 1997; Ward, Hudson, et al., 1997). Rogers and Dickey (1991) describe the use of cognitive distortions by sex offenders as *defensiveness*. These two descriptions lead us to a more specific definition of cognitive distortions in sex offenders: *learned assumptions, sets of beliefs and attitudes, or at least statements about deviant sexual behaviors such as child molestation and rape which serve to deny, justify, minimize and rationalize an offender's action* (Abel et al., 1984; Bumby, 1996; Murphy, 1990; Stermac & Segal, 1989). These general beliefs and attitudes about women and children are described as relatively conservative and traditional (Howells & Wright, 1978) and arguably consistent with more controlling beliefs that endorse views concerning the sexual entitlements of males (Hanson, Gizarelli, & Scott, 1994; Ward, Hudson, et al., 1997).

The content of the beliefs of child molesters has been categorized by a limited number of themes. For example, Neidigh and Krop (1992) found that the majority of the responses to an open-ended questionnaire they collected fitted into ten categories: "She enjoyed it", "This won't hurt her or affect her in any way", "This is not so bad, it's not really wrong", "I was high on drugs or alcohol at the time", "I wasn't thinking at all or I wouldn't have done it",

"No one will ever find out, so I won't get caught", "She is flirting and teasing me, so she wants me to do it", and "We love each other, so this is ok", "She didn't say no or tell, so it must be ok with her" and "There is no force involved, so this must be mutual".

In an attempt to delineate the range of thematic content and logical structure of the excuses of child molesters Pollock and Hashmall (1991) examined over 250 justificatory statements from the clinical records of 86 child molesters referred for psychiatric assessment. A total of 21 distinct excuses and six thematic categories were identified: situational mitigating factors (e.g., deprived of conventional sex, intoxication), sex with children is not wrong (e.g., the victim consented), incident was nonsexual (just being affectionate, just trying to help the victim), psychological mitigating factors (e.g., fear of adult females, don't know what's wrong with me), blaming the victim (victim initiated) and denial (e.g., nothing happened, victim was lying).

In addition Pollock and Hashmall (1991) developed a hierarchical model, or excuse syntax. The further you move down the hierarchy the more subtle is the denial and avoidance of responsibility. From top to bottom there is (1) denial of fact, "Nothing happened"; (2) denial of responsibility, "Something happened but it wasn't my idea"; (3) denial of sexual intent, "Something happened and it was my idea but it wasn't sexual"; (4) denial of wrongfulness, "Something happened and it was my idea and it was sexual but it wasn't wrong"; and (5) denial of self-determination, "Something happened and it was my idea and it was sexual and it was wrong but there were extenuating factors".

Research with rapists has focused primarily on the issue of responsibility, rather than acceptability of the behavior (Ward, Hudson, et al., 1997). For example, rapists are more likely to believe that women are responsible for rape and that accused rapists are likely to be innocent (Marolly & Scully, 1986). Other research in this area has typically investigated rape supportive beliefs in relation to other constructs, such as acceptance of interpersonal violence and hostility towards women (e.g., Burt, 1980).

Thus, it appears that sexual offenders hold traditional beliefs about women and are likely to perceive children in sexual terms. Sex offenders also strongly endorse attitudes supportive of male sexual entitlement. It is very likely that child molesters differ within themselves with respect to the types of beliefs held, with extrafamilial offenders holding the most pro adult/child sex beliefs, and that rapists are likely to be different again (Ward, Hudson, et al., 1997).

Conceptual Relevance of Cognitive Distortions

The relevance of the concept of cognitive distortions is stressed by Langevin and Lang (1985) when they suggest that treatment of sexual molesters should initially focus on overcoming the rationalizations and cognitive distortions sexual offenders hold about their motives and reasons for sexual involvement with children. Abel et al. (1989) argue that experimental studies have shown that cognitive distortions are an important factor in the etiology and maintenance of juvenile delinquency (Gibbs, 1989). Yochelson and Samenow (1977) discuss the existence of numerous cognitive distortions or "thinking errors", which become a way of life for criminals, and claim that the only effective way to prevent a chronic offender from relapsing is to identify and modify these distorted thinking patterns. More recently, Bumby (1996) has argued that cognitive restructuring, in which offenders' cognitive distortions are confronted and challenged, involves an integral component of current treatment. In their integrative review, Ward, Hudson, et al. (1997) suggest that an understanding of the cognitive processes underlying the initiation, maintenance and justification of sexual offending is a vital pre-requisite to the understanding of sexual offending and the development of successful treatment programs.

There are a variety of approaches to describe the role of cognitions, and hence cognitive distortions, in sexual abuse (Murphy, 1990). These approaches do share many aspects, but have slightly different focuses. They all deal with the way individuals perceive (or misperceive) and attend to environmental cues, as well as the way they process information and evaluate or misevaluate the consequences of the behavior. Some differences in focus are specificity vs generalizability, causative of sexual behavior vs secondary to sexual offending, major and most important area of treatment focus versus one of a number of areas.

Although the idea that cognitive distortions of sex offenders are relevant factors in the etiology and maintenance of sexual offending is widely accepted, there remains a lack of controlled research on these cognitive distortions (Bumby, 1996). The progress in therapy of an offender with regard to his cognitive distortions can be measured (e.g., Barbaree, 1991; Marshall, 1994; Pithers, 1994). However, little is known about the relation of this progress in therapy to the risk of reoffending (Hanson et al., 1991), just as little as about which kind of cognitive distortion (justification, minimization or denial) is most indicative of treatment need, or how many cognitive distortions need to be endorsed before treatment is recommended. At the present, assessment of cognitive distortions should be confined to the area of therapy planning and therapy evaluation. And even then justification is provided by theoretical and experiential arguments rather than by empirical evidence. Assessing a sex

offender's risk of reoffending is not recommendable when using only measures of a sex offender's cognitive distortions. Neither is identification or diagnosis of a sexual offender. As yet, measuring the cognitive distortions of a subject does not provide the adequate information to judge whether that subject is a sex offender or not.

Questionnaires Assessing Cognitive Distortions

Researchers studying cognitive distortions in the sexual offending domain have focused most of their efforts into developing psychometrically robust measures of dysfunctional beliefs and attitudes that discriminate sex offenders from others (Abel et al., 1984; Abel et al. 1989; Hanson, Gizzarelli & Scott, 1994; Bumby, 1996). The focus of this research has been on the content of relevant cognitions and their measurement (Ward, Hudson, et al., 1997; for some exceptions see Johnston & Ward, 1996; Ward, Hudson, & Marshall, 1995; Ward, Hudson, et al., 1997; Ward, Keenan, et al., 1997). This article reviews a considerable part of these efforts.

Some commonly accepted measures for assessing cognitive distortions of sex offenders will be discussed - the Abel and Becker Cognitions Scale (Abel et al., 1989), the Rape Myth Acceptance Scale (Burt, 1980) and the Cognitive Distortions/Immaturity and the Justification subscales of the Multiphasic Sex Inventory (Nichols & Molinder, 1984)-, as well as some, at the present, less widely used but more recently developed exemplars: the Molest Scale and the Rape Scale (Bumby, 1996), the Sex Attitude Questionnaire (Hanson et al., 1994) and the Child Molester Scale (McGrath, 1998).

We do not pretend to provide an exhaustive review of all measures designed to assess cognitive distortions in sex offenders. We are aware of other available instruments (e.g., Hogue, 1994; Horley & Quinsey, 1994; Hunter, Becker, Kaplan, & Goodwin, 1991; Stermac & Segal, 1989) but do not discuss them here. We confine this paper to the discussion of regular questionnaires and more specifically to the evolution between some older but more widely used exemplars and some more recently developed scales we found in the literature.

As far as possible, information will be provided for each scale with respect to the target (child molesters - rapists), the number of items, the way the items are scored (reverse or not), the reliability, the validity and the extent to which the scale is open to social desirability. When available, data on the predictive validity and on the construct validity will be reported. When dealing with risk management, the strongest test of a measure is its ability to predict future sexual (non-)offending: the predictive validity of a

measure. The predictive validity is examined in recidivism studies in which sexual reoffending is related to variables considered to have a link with sex offending. Unfortunately, there have been few recidivism studies (Hanson et al., 1991a), and the results tend to be inconclusive (Hall, 1990).

Another strategy for establishing validity in our domain is to compare known groups of sexual offenders with nonsexual offenders (Hanson et al., 1991a, 1991b). When differences are found in the expected direction, then the construct or characteristic assessed receives some support as being related to sexual offending or even being of causal or explanatory value (Ward, Hudson, et al., 1997), and hence the construct validity receives confirmation. With regard to the evaluation of validity of an instrument as potential risk indicator, the ability of that measure to distinguish between sexual offenders and nonsexual offenders is often considered as a minimum criterion (Hanson et al. 1991a), i.e. a necessary although not sufficient criterion. However, as mentioned above, information can be gathered with regard to risk potential without having to compare sex offenders with nonsexual offenders when the relation is studied between test scores and reoffending rates. Nevertheless, the discriminative power may be a useful tool to provide information about the potential predictive validity (reoffending) of a measure in absence of data on the relation between test scores and reoffending.

Abel and Becker Cognitions Scale (Abel et al., 1989)

The Abel and Becker Cognitions Scale (ABCS), originally introduced in the Abel, Becker, Cunningham-Rathner, Rouleau, Kaplan, and Reich (1984) treatment manual for child molesters, has gained widespread use for assessing cognitive distortions of child molesters (Milner & Murphy, 1995). The ABCS addresses the rationalizations and cognitive distortions that child molesters may use to justify adult-child sexual relationships (Hanson et al., 1991b; Prentky & Edmunds, 1997). The instrument consists of 29 items that are answered using a 5-point Likert scale (from 'Strongly Agree' to 'Strongly Disagree') and it takes about 10 minutes to complete. All the items are worded in the same direction, with agreement (lower scores) indicative of the endorsement of deviant cognitions.

The content of this questionnaire is based on the author's clinical experience evaluating hundreds of child molesters (Abel, Gore, Holland, Camp, Becker, & Rathner, 1989). The scale includes such items as: "A child who doesn't resist an adult's sexual advances really wants to have sex with the adult", "Having sex with a child is a good way for an adult to teach the child about sex". These questions seem to have good face validity. However, it was not until 1989 that basic psychometric information on the scale was published (Abel et al., 1989), based on Gore's (1988) doctoral dissertation.

Although Abel et al. (1989) assume that the scale is essentially unidimensional, they nevertheless extract and interpret six factors based on a factor analysis. The six subscales are: "Child-adult sex helps the child", "Children initiate child-adult sex for specific reasons", "Adults initiate child-adult sex for specific reasons", "The child's behavior shows their desire child-adult sex", "Adults can predict when child-adult sex will damage the child in the future", and "Child-adult sex is or will be acceptable in society". The one to three week stability of the subscales (test/retest reliability) ranged from .64 to .77, with the stability of the overall score being .76 (Abel et al., 1989). These are reasonable stability scores providing evidence that whatever may be measured with the ABCS, its measurement is acceptably reliable.

With regard to construct validity Abel et al. (1989) report that cognitive distortions measured with the ABCS seem to increase as child molestation behavior continues and as the total number of different categories of child molestation increases. With a population of child molesters Gudjonsson (1990) reports a positive relation between cognitive distortions as measured with the ABCS and external attribution of blame as measured with the Gudjonsson Revised Blame Attribution Inventory (Gudjonsson & Singh, 1989), suggesting that the cognitions regarding child molestation are related to the tendency of the offender to externalize blame for his illegal sexual behavior. Further evidence for the construct validity of the ABCS was found in the observation that child molesters scored more deviantly on all six subscales than did normal controls, even after control for educational level (Abel et al., 1989). However, no significant differences were found between child molesters and a nonpedophilic sexual offender comparison group. The non-child molester paraphiliacs did score significantly lower (more deviant) than the controls on factors 1 (child-adult sex helps the child) and 3 (adults initiate child-adult sex for specific reasons). Stermac and Segal (1989) partially replicated these findings: child molesters endorsed more items indicative of permissive beliefs and attitudes towards adult sexual contact with children than all others. Contrary to the findings of Abel et al. (1989), Stermac and Segal (1989) did observe that the child molesters in their study scored more deviantly than did the rapists. No significant differences were found between rapists and community controls. In addition, Abel et al. (1989) found that their factor 1, "Child-adult sex helps the child", was statistically significant in discriminating child molesters from the general population. Hayashino, Wurtele, and Klebe (1995) found that extrafamilial offenders scored higher on cognitive distortions than did incest offenders, rapists, incarcerated non-sexoffenders, and lay persons.

Despite some encouraging results, it has been reported by several authors (e.g., Horley & Quinsey, 1994; Marshall, 1996) that the ABCS is rather

transparent and open to subjects representing themselves in a positive, but perhaps inaccurate manner. Although no correlations with social desirability scales are available, Murphy (1990) also points to the social desirability problem of the ABCS. Much if not all of the data reported by Abel and his colleagues were based on a sample of voluntary offenders promised confidentiality. In addition, all the offenders admitted to their sexual deviation. Whether this scale reveals the same distortions among sex offenders under legal pressure to appear normal can at least be questioned.

Of relevance in this regard is the study of Langevin (1991) in which the ABCS was administered with a sample of 45 sex offenders referred for pre-trial assessment. These subjects were promised neither confidentiality nor anonymity. With only 7.2% of responses in alternatives 1-3 (agree or neutral), response bias was so strong in this sample that correlations of the ABCS with other measures could not be examined. Even if a control group had been included in this study, it appears unlikely that community controls should have scored significantly less deviant than did the child molester group. The reason for the discrepancy in results with the Abel et al. (1989) study are obvious. Clinical (forensic) assessments are not anonymous and offenders who appear at risk for reoffending can face serious consequences related to sentencing, conditional release, prosecution, etc. Offenders who face this kind of assessment may try to determine the socially acceptable response and respond similarly to those who have not sexually assaulted children.

The ABCS is an historically important scale because it addresses cognitive factors that are consistent with current theory concerning the etiology and the maintenance of child molesting (e.g., Hanson et al., 1991b; Ward, Hudson, et al., 1997). When considering the available evidence, we can summarize the findings as follows: the ABCS discriminates between child molesters and community controls. Although this is based on very little empirical research it has been demonstrated that, under conditions of confidentiality, child molesters endorse significantly more cognitive distortions than do community controls (Abel et al. 1989; Segal & Stermac, 1989). In addition, the number of cognitive distortions a child molester endorses is positively related to the number of years he has been active and to the number of different categories of child molestation. However, the homogeneity of the itempool can be improved, the scale should be shortened (Hanson et al., 1991b) and serious questions arise about the validity of the ABCS in a situation in which confidentiality towards subjects is omitted (Langevin, 1991).

Rape Myth Acceptance Scale (Burt, 1980)

The Rape Myth Acceptance Scale (RMAS) was originally developed for use in a community survey (Malamuth, 1981; Muehlenhard & Linton, 1987; Newman & Colon, 1994; Prentky & Edmunds, 1997; Rapaport & Burkhart, 1984; Spence, Losoff, & Robbins, 1991). The RMAS (Burt, 1980) is a 19-item scale that measures a variety of attitudes toward women and aggression thought to be supportive of rape. The scale includes 11 items related to justification of rape and victim blaming, with each item scored on a 7-point Likert-type scale ranging from 'strongly agree' to 'strongly disagree'. These 11 items are worded in the same direction, with agreement (higher scores) indicative of the endorsement of deviant cognitions. Eight additional items relate to false accusations and the respondent's likelihood to believe various individuals' claim of rape (e.g., best friend, black woman, white woman).

Burt (1980) reports a Cronbach Alpha of .88, suggesting the RMAS has good internal consistency. However, congruent with the description of the item pool given above, Briere, Malamuth and Check (1985) found the RMAS to be multifactorial. Their first two factors concerned 1) disbelief of rape claims (the last question of the scale, counting as 6 items), and 2) victim responsible for being raped (almost all the other questions). Gillis (1991, in Hanson et al. 1991b) reported internal consistency measures of these factors to be .86 and .80, respectively.

Greendlinger (1985) found the stability over time of the RMAS to be .74 in a sample of college males (one to two weeks). In a study designed to change RMAS scores, the stabilities of the scores were found to be .77 (pretest to post manipulation) and .69 (pretest to two week follow-up) (Intons-Peterson, Roskos-Ewoldsen, Thomas, Shirley & Blut, 1989). Higher stabilities would be expected if no intervention was provided.

Regarding the construct validity of the RMAS Gillis (1991; in Hanson et al., 1991b) found that the "victim blaming" factor of the RMAS correlated with the Hostility Towards Women Scale (Check, 1985), the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957), the Rape Empathy Scale (Deitz et al., 1982), and the Cognitive Distortions and Immaturity Scale from the MSI (Nichols & Molinder, 1984). Gillis (1991) found that the RMAS "credibility" factor showed smaller correlations than did the "victim blame," correlations that were only significant for the Hostility Towards Women and Rape Empathy Scale. In a study of Hogue (1994) the RMAS was positively related to the Justification scale and the Cognitive Distortion and Immaturity scale of the Multiphasic Sex Inventory (Nichols & Molinder, 1984), indicating these three measures tap one and the same construct.

Intons-Peterson et al. (1989) found that the RMAS was sensitive to attitude changes produced by exposure to sexually violent films (increase), and

education debunking rape myths (decrease). Malamuth, Check and Briere (1986) found that it was associated with self-reported arousal to forcing women to do things that they didn't want to do. The RMAS is related positively to self-reported likelihood of raping and negatively to judgements that a man who forces sex has raped and should be convicted (Burt & Albin, 1981; Greendlinger & Byrne, 1987; Malamuth, 1981).

With regard to discriminative power, the RMAS was able to distinguish men from women, with males scoring more deviantly than females (Ashton, 1982; Muehlenhard & Linton, 1987; Spence et al., 1991). However, when comparing *a priori* groups of sex offender (rapists) with controls, no clear differences are found on RMAS scores in the available literature. Despite the fact that subjects, as in the Abel et al. (1989) study, were promised anonymity, Burt (1983) failed to report a significant difference on RMAS score between sex offenders (rapists) and a randomly selected sample of adults. Overholser and Beck (1986) similarly found no differences between rapists, child molesters, low socioeconomic status community controls, and minimal dating college males. Gillis (1991) also found no differences between rapists, nonsexual offenders and low socioeconomic control subjects. On the other hand, Muehlenhard and Linton (1987) found that psychology students reporting sexual aggression towards a female in a previous date scored significantly higher on the RMAS than did men not reporting such aggression, who in turn scored higher on the RMAS than did women who had or had not been involved in sexual aggression.

With respect to social desirability, Spohn (1993) observed a non-significant correlation between RMAS scores and scores on the Marlowe-Crowne Social Desirability Scale in university student sample. These findings were replicated by Hogue (1994) with a sex offender sample.

In summary, although it has often been argued by clinicians and researchers alike that convicted rapists accept more rape myths than the general population (e.g., Malamuth, 1981; Muehlenhard & Linton, 1987), these postulated differences are not similarly displayed in research using the RMAS. The temporal stability of the scale is acceptable (Greendlinger, 1985; Intons-Peterson et al., 1989) and susceptibility to social desirability seems to be low (Hogue, 1994; Spohn, 1993), but the homogeneity may be questioned (Briere et al., 1985; Gillis, 1991). To the extent that one wants to pinpoint eventual differences between groups, this lack of homogeneity may be a problem.

The Cognitive Distortions and Immaturity Scale (MSI; Nichols & Molinder, 1984)

Two of the scales of the Multiphasic Sex Inventory (MSI; Nichols & Molinder, 1984), Justification and Cognitive Distortions and Immaturity, were developed explicitly to measure cognitive distortions in sex offenders in general (Ward, McCormack, et al., 1997). The Cognitive Distortion and Immaturity Scale (CDIS) consists of 21 items (19 true, 2 false) designed to assess the perpetrator's self-accountability for his sexual offense, as well as the extent to which the offender adopts a victim stance, e.g., "In some ways I was used by the person who reported me." The items, however, appear quite heterogeneous (Hanson et al., 1991b): there are items that address identification with children, feeling generally misunderstood, delayed development of sexual interest, and feeling unloved by one's parents. The heterogeneity of the CDIS is confirmed by the low standardized alpha coefficient (.53) reported by Kalichman, Henderson, Shealy, and Dwyer (1992). In addition, the mean inter-item correlation was only .06, being the lowest value of all MSI scales. Gillis (1991) reports an internal consistency (KR) of .73, Ward, McCormack, et al. (1997) an alpha of .82. The stability over time of the CDIS is acceptable (.71 over three months; Simkins et al., 1989).

A positive relation was observed by Kalichman et al. (1992) between scores on the CDIS, IQ scores, and several measures of emotional distress (i.e. trait anger, trait anxiety, and anger held inwardly). CDIS scores were negative correlated with self-esteem. Hogue (1994) found a positive correlation with the Justification Scale of the MSI, the RMAS, the Hostility Towards Women Scale of Check (1985) and his own Sex Offence Information Questionnaire, designed to measure cognitive distortions in sex offenders. Gillis (1991) reported reasonably strong correlations of the CDIS with other measures typically used to assess sexual offenders, such as the Hostility Towards Women Scale (Check, 1985) and The Buss-Durkee Hostility Inventory (Buss & Durkee, 1957) but he reported a failure of the CDIS in distinguishing between rapists, nonviolent nonsexual, and nonsexual violent offender groups. Congruent with findings reported by Abel et al. (1989) using the ABCS, Simkins et al. (1989) found that child molesters who offend inside and outside the family scored higher than subjects offending only inside or outside the family. Low scores predicted positive outcome in their family oriented treatment of child molesters, but the scores did not change with treatment.

Two studies examined the social desirability susceptibility of the CDIS. Kalichman et al. (1992) reports a significant correlation (.32) with the Marlowe Crowne Social Desirability Scale (Crowne & Marlowe, 1960). In contrast, Hogue (1994) found a zero correlation (.005).

Although the CDIS shows a positive correlation with measures assessing closely related constructs, suggesting an acceptable construct validity, the scale did not succeed in discriminating between rapists, nonviolent nonsexual, and nonsexual violent offender groups. In addition, the heterogeneity of the items makes the interpretation of this scale problematic (Hanson et al., 1991) as far as the goal is to pinpoint eventual differences between groups. Some of the items of the CDIS may be related to sexual offending and cognitive distortions - to child molesting more than to rape (Hanson et al., 1991) -, but basic psychometric research (e.g., factor analysis) needs to be conducted before the scale can be considered clinically useful (Hanson et al., 1991; Murphy, 1990). To resolve this heterogeneity, it has been argued (Marshall, 1996) to separate out issues concerned with victim harm from other minimizing and denying tendencies. Another limitation with using the CDIS is that the scale presumes that the test taker has committed a sexual offense (Hanson et al., 1994) and, consequently, the items are inappropriate for nonoffending comparison groups in research (e.g., 'My sexual offense occurred because of stresses in my life').

Justifications Scale (MSI; Nichols & Molinder, 1980)

The Justifications Scale (JS) of the MSI includes 24 offense items (all true) labeled 'psychological justifications', such as 'My sexual offense occurred as a result of my wife's lack of understanding of me' and 'My sexual offense occurred because of stresses in my life.' There are also a number of items related to attribution of blame to the victim's behavior, such as 'My sex offense would not have occurred if the victim had not been sexually loose,' to stress, alcohol and/or some other external factor. As the name implies, the JS is intended to measure the degree to which an offender attempts to explain or justify committing sexual crimes (Nichols & Molinder, 1984). The JS has, as does the CDIS, the advantage of being applicable to all types of sex offenders and not only child molesters or rapists as is the case with respectively the ABCS and the RMAS. No reliability data were presented by the authors (Nichols & Molinder, 1984), and it has been questioned whether the scale is unidimensional (Hanson et al., 1991b). However, Kalichman et al. (1992) observed a .82 standardized alpha coefficient and a .22 mean inter-item correlation. Simkins et al. (1989) found the three month stability of the JS to be .78.

The JS is weakly correlated with positive treatment outcome, but did not change with treatment (Simkins et al., 1989). Offenders in this study showing less denial tended to report more justifications. In contrast with this, Miner et al. (1990) found that the JS scores decreased with treatment and the posttreatment scores of child molesters were lower than the scores for an

untreated control group. Similar differences were not noted for rapists, but there was an insufficient number to provide an adequately powerful test. Scores on the JS were negatively related to suicide attempts, and positively with self-esteem and anger control (Kalichman et al., 1992), and with scores on the RMAS, Hostility Towards Women Scale (Check, 1985), and the Attitudes Towards Sex With Children Scale (Cortoni, 1991), a scale based on the ABCS (Hogue, 1994) research. As is the case for the CDIS, the JS was related to the Marlowe Crowne Social Desirability Scale (Crowne & Marlow, 1960) in the Kalichman et al. (1992) study, but Hogue (1994), again, found no relation with social desirability.

A major restriction of both the CDIS and the JS is that these scales cannot be used to adequately compare sexual offenders and non-(sex) offenders because the scales presume that the respondent has committed a sexual offense. Hence examining the discriminative power (comparing scores of sex offenders vs scores of non sex offenders) becomes nearly impossible. It is unclear whether the CDIS and the JS are susceptible to social desirability response style. These scales have not been subjected to factor analysis, and therefore clinically one must cautiously interpret elevated scores on these scales (Hanson et al., 1991a; Murphy, 1990) because it is not clear which particular factor(s) caused the elevated scores.

Sex Attitude Questionnaire (Hanson et al., 1994)

The Sex Attitude Questionnaire (SAQ) of Hanson et al. (1994) contains the following scales: Frustration, Affairs, Sexual Entitlement, Sex/Affection Confusion, Sexy Children, and Sexual Harm. Respondents are asked to rate their agreement to all of the items using a 5-points scale from completely disagree to completely agree. Items from each scale are intermixed to create a 47-item scale. Ten items are reverse scored.

The Hanson et al. study (1994) was aimed at extending previous research on incest offender attitudes by using some new scales to assess a wider range of attitudes than were considered in previous studies (e.g., ABCS in Abel et al., 1989). The items for the SAQ were developed from interviews with child molesters (mainly incest offenders) and through repeated administration of various versions of the scales to child molesters and community comparison groups. The Sexy Children and Sexual Harm scales resemble some of the other attitudinal scales developed for child molesters (Abel et al., 1989; Hanson et al., 1994).

The attitude scales of the SAQ were internally consistent (coefficient alphas ranging from .81 to .92), with the exception of the Sex/Affection Confusion Scale (.62) and the Affairs Scale (.67), which were only marginally internally consistent. No retest was reported and hence no stability over

time calculated. The Marlowe-Crowne Social Desirability Scale was related with the Frustration, Sex/Affection Confusion and Sexual Harm scales.

The SAQ differentiated between incest offenders and two control groups, domestic male batterers and community comparison subjects. This difference was attributable to the incest group scoring higher on the Sexual Entitlement, Sexy Children, and Sexual Harm scales. The incest offenders were most likely to perceive children as sexually attractive and as sexually motivated; they minimized the harm caused by the sexual abuse of children, and they often endorsed attitudes supportive of male sexual entitlement. There was no difference between the incest offenders and the other groups on the measures of attitudes toward affairs, sexual frustration, and confusion between sex and affection. The two control groups did not differ significantly on any of the scales.

The Hanson et al. (1994) study extends previous research by identifying a specific type of cognitive distortion - sexual entitlement - that has not been documented empirically in other studies (Hanson et al., 1994). However, because the questionnaire was administered under instructions of anonymity, it is unclear whether similar results would be found in applied assessment settings when the respondents could face serious legal or social consequences if they received a "negative" assessment. Hence more research is needed before conclusions with regard to construct validity of the SAQ can be drawn.

MOLEST and RAPE scale (Bumby, 1996)

Two other recently developed instruments are the Molest Scale (MS) and Rape Scale (RS) of Bumby (1996) designed to respectively assess the cognitive distortions of child molesters and rapists. Some items in the MS and RS are derived from the ABCS and the RMAS, respectively, although none are identical. Items on the MS and RS are scored on a 4-point Likert-type scale ranging from "strongly disagree" to "strongly agree." None of the items is reverse scored.

The internal consistency of the MS (38 items) is excellent (alpha coefficient of .97). As with the RS, the homogeneity of the scale was optimized by computing item-remainder correlations and omitting items with item-to-total correlations of less than .40. The test-retest reliability is .84 over a 2-week interval indicating an acceptable temporal stability. Sexual offenders who endorsed more cognitive distortions on the MS also subscribed to a greater number of cognitive distortions on the ABCS. In addition, subjects with higher scores on the MS reported more cognitive distortions and immature beliefs related to self-accountability as measured by the CDIS of the MSI. Furthermore the MS was significantly correlated with the MSI Lie

Scale for Child Molesters, which assesses the tendency to defend sexual deviance by dishonesty and denial. No correlation was found with the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), or with JS of the MSI. Scores on the MS were highly significantly correlated with RS scores, with the number of victims and with years of offending. The MS discriminated between a child molester group and both a rapist and non-sexually offending inmate group. Child molesters endorsed significantly more cognitive distortions on the MS than either the rapist or the inmate groups, which did not differ significantly on the measure.

The RS (36 items) showed an excellent coefficient alpha of .96, suggesting its measurement of one primary construct. Temporal stability of the RS was high as well, with a test-retest correlation of .86 over a 2-week interval. Rapists' scores on the RS and number of victims were positively related, but no significant relationship was found between rapists' scores on the RS and the number of years of sexually assaultive behavior. In addition, sexual offenders who adhered to a greater number of cognitive distortions on the RS also endorsed more cognitive distortions and immature beliefs related to self-accountability as measured by the CDIS of the MSI and justifications for sexual offending behaviors on the JS of the MSI. The RS did not correlate significantly with the RMAS, or with the Marlowe Crowne Social Desirability Scale. It did discriminate between a rapist and a nonsexually offending inmate group with rapists endorsing more cognitive distortions about rape. Although the rapists' mean score on the RS was higher than the mean score of the child molesters, the difference was not significant. The child molesters endorsed significantly more items on the RS than the non-sexually offending inmates.

The data available on the MS and the RS (Bumby, 1996) suggest that the MS and the RS are reliable and valid measures of the cognitive distortions of sexual offenders. Both measures display a considerable discriminative power, suggesting they may be useful as potential risk indicators (Hanson et al., 1991a). In addition, positive correlations were found with other measures assessing cognitive distortions in sex offenders. However, the observation that scores on the RS were not related to scores on the RMAS, needs to be further explored. No evidence was found for social desirability bias with the MCSDS. It is not clear whether subjects in this study were promised confidentiality or not. However, it seems not unlikely they were, since subjects were aware of their act as participation in a research and as such they participated voluntarily (p. 41). Probably, the research context may have contaminated the validity of the results.

The Child Molester Scale (McGrath et al., 1998)

Twenty-two items describe cognitive distortions about adult-child sex and offer justifications for this aberrant sexual behavior on a 5-point Likert scale. For example, "Children usually outgrow any problems resulting from a sexual experience they had as a child" and "Play-wrestling with children which includes some tickling and touching between the child's legs is not sexual assault." These items are embedded among unrelated questionnaire items to reduce the ability to respondents to determine the purpose of the measurement. In addition the direction of the appropriate answers is varied in order to make the scale less transparent: nine out of the 22 items of the CMS are reverse scored.

McGrath et al. (1998) report only a marginal internal consistency of the CMI, with a coefficient alpha of .65. The CMI was completed by a part of one offender group for a second time after a 24-week interval. However, the test-retest was not calculated nor interpreted in reliability terms. Rather McGrath et al. (1998) were looking for a treatment effect and they calculated not a correlation but compared scores between groups. During the 24-week interval a relapse prevention program was completed. Child molesters reported significantly fewer cognitive distortions about the acceptability of adult-child sexual activity.

Subjects endorsing more cognitive distortions about adult-child sex showed less empathy for victims of sexual abuse in general (i.e. not the victim of the own offense). All (sex) offender groups responding to the CMS showed significantly more cognitive distortions than controls, i.e. male university students who were promised anonymity. When looking more closely to the data McGrath et al. (1998) observed that a sexual offender group offered anonymity endorsed more cognitive distortions than a similar sexual offender group not promised anonymity. Nevertheless, these sex offenders who were assessed non-anonymously, endorsed still more cognitive distortions than did community controls. The sex offender group not offered anonymity and the nonsexual offender group promised confidentiality did not differ significantly. However, when sex offenders were also offered anonymity, they endorsed significantly more cognitive distortions than did nonsexual offenders. Scores on the CMS and the sexual social desirability scale of McGrath et al. (1998) were correlated. The more cognitive distortions the higher the score on their scale developed to measure the tendency to deny negative yet likely characteristics specific to sexual issues.

The CMS does reveal cognitive distortions in sex offenders promised anonymity and even in sexual offenders who respond defensively (non-anonymous condition). In addition the CMS is able to distinguish between those two groups and between them and the control group. Although these results

provide support for the construct validity of the CMS, they suggest as well that sexual offenders tested with no offer of anonymity probably hold more cognitive distortions than their scores on this test suggests. The homogeneity of the items is only moderate and the scale seems to be susceptible to social desirability bias.

Conclusion

Although researchers studying cognitive distortions in the sexual offending domain have focused most of their efforts into developing psychometrically robust measures of dysfunctional beliefs and attitudes that discriminate sex offenders from others (Bumby, 1996), these efforts have met with only partial success. In our review eight measures are discussed, four of which are at present commonly accepted and widely used for assessing cognitive distortions of sex offenders: the Abel and Becker Cognitions Scale, the Rape Myth Acceptance Scale, and the Cognitive Distortions and Immaturity Scale and the Justifications Scale of the MSI. Although the stability over time may be acceptable, the homogeneity among items in these questionnaires tends to be weak or at least not unequivocal (cf. Table 1). The rather poor homogeneity among items or the ambiguity about it negates or weakens the claim that one central dimension is measured, but despite this inconvenience the ABCS succeeded in discriminating between child molesters and both controls (Abel et al., 1989) and rapists (Stermac & Segal, 1989). The RMAS was not able to discriminate between rapists and controls. Rapists responding to the CDIS of the MSI did not score significantly different from nonsexual criminals (Gillis, 1991). For the JS of the MSI no data are available regarding discriminative power. Actually, adequately comparing sex offenders with non sex offenders is hardly possible with the MSI since the items of this instrument are not all equally applicable to non sex offenders. Hence, of the most widely used instruments measuring cognitive distortions in sex offenders only the ABCS succeeded in discriminating between the target group (i.e. child molesters) and controls, indicating the ABCS has at least acceptable construct validity and potential usefulness as risk predictor. However, the strength of this conclusion is weakened by findings of Langevin (1991) suggesting that the results of Abel et al. (1989) are not generalisable to situations in which subjects may face serious consequences when responding veracious. The issue of social desirability was addressed in all four recently developed instruments.

In how far did Bumby (1996), Hanson et al. (1994) and McGrath et al. (1998) resolve the problems of the older measures? The homogeneity of the items in Bumby's scales is by far the best reported for an instrument measu-

Table 1
Overview of Tests with Respect to Discussed Criteria

Test	Target	n	R	E	H	T	D	S	NA	CV
Older										
ABCS	child mol.	29	0	-	?	+	+	n	n	+
RMAS	Rapists	19	0	-	?	+	-	+	n	+
CDIS	sex offenders	21	2	-	?	+	-	?	n	+
JS	sex offenders	24	0	-	+	+	-	?	n	+
Recent										
SAQ	intrafam. Child mol.	47	10	-	+	n	+	-	n	n
MS	child molesters	38	0	-	+	+	+	+	n	+
RS	Rapists	36	0	-	+	+	+	+	n	+
CMS	child molesters	22	9	+	-	n	+	-	+	+

Note. + = positive evaluation on criterion; - = negative evaluation on criterion; ? = available evidence is not unequivocal; n = no information; n = total number of items comprising the scale; R = the number of items scored reverse; E = items embedded between neutral items or not; H = homogeneity of scale (SAQ) or test (other tests) items as determined by factor analysis and/or alpha coefficient or KR; T = test-test reliability; D = ability to discriminate between target group and a nonsexual offender control group; S = social desirability; + = no correlation with MCSDS; - = correlation with MCSDS; NA = significant difference between non anonymous administered sex offender group and community controls; CV = construct validity

ring cognitive distortions in sex offenders and indicates more than in any other measure that one central dimension is being tapped. As did the ABCS (Stermac & Segal, 1989), the Molest Scale did differentiate between child molesters and non-child molesters. Contrary to findings with the RMAS, rapists responding to the Rape Scale scored significantly more deviantly than did non rapists. The Sex Attitude Questionnaire of Hanson et al. (1994) and the Child Molest Scale of McGrath et al. (1998) also succeeded in differentiating between their target group and controls (see Table 1 for a summary of the reported findings). The strength of findings with the Child Molest Scale is that this questionnaire discriminated between a sex offender group *not* promised anonymity and the control group. No other instrument developed for assessing cognitive distortions ever accomplished such a discriminative power.

It is remarkable that for only one test a difference is reported between a not anonymous tested index group and control groups. In all other studies it appears that sex offenders are promised anonymity or confidentiality with regard to test results. Because assessment in 'real life situations' is never anonymous and because (non)anonymity is considered an important determining feature of the test situation, the validity of at least the ABCS may be questioned (Langevin, 1990). If susceptibility to social desirability bias of the ABCS is too large, even the therapy progress evaluation function of this scale is fading away and the scale's usefulness may be disputed. To what extent the same conclusion holds for the other scales (MS, RS, SAQ) is unclear at the moment. Research with subjects not promised anonymity is needed to examine this issue. Moreover, future research in the domain of assessment of cognitive distortions in sex offenders should address the issue of social desirability systematically.

Maybe McGrath et al. (1998) are on the right track with their Child Molest Scale being able to discriminate between sex offenders not promised anonymity and controls. Analysis of differences with other scales needs to be performed in order to find out which feature(s) of the CMS are producing its discriminative power. Possibly, the embedded items could be an important feature diminishing the face validity and hence susceptibility to social desirability. Maybe the CMS announces a new era in our domain in which questionnaires assessing cognitive distortions in sex offenders can indicate in individual cases whether a subject is or is not a sex offender, or whether a sex offender will reoffend or not. However, in order to accomplish this aim we have a long way to go, preferably along a way where we can tap automatic processing in an attempt to avoid contamination by social desirability factors (Hudson & Ward, 1997). In addition, more fundamental research is needed to examine and confirm the determining relation between cognitive distortions and sex offending. As long as this relation is not established by

empirical evidence the usefulness of assessing cognitive distortions in sex offenders remains questionable.

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