



Sensational interests as a form of intrasexual competition

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Abstract

Sensational interests, i.e. a curiosity for the violent and macabre, are reputedly common in mentally disordered offenders. However, ostensibly well-adjusted individuals are also interested in these topics. We tested the hypothesis that individual differences in sensational interests may partially reflect intrasexual competition for status and have an underlying evolutionary function. Several predictions derive from this hypothesis. First, age and sex should be directly related to individual differences in mating effort (the degree that an individual devotes resources to finding and guarding sexual partners). Second, mating effort should directly influence sensational interests. Third, there should also be direct effects of age and sex on sensational interests. To test these predictions we collected data on 969 university undergraduates using the Revised Version of the Sensational Interests Questionnaire (SIQ-R) and the Mating effort Scale (MES). A structural equations model revealed that a single factor accounted for the majority of the variance of the three SIQ-R subscales, Paranormal, Militarism, and Criminal Identity. This model also included direct effects of age and sex on the MES and two SIQ-R subscales and direct effects of the MES on the SIQ-R. Model fit statistics indicated that this model was a good fit to the data. We conclude that, even in a non-clinical sample, an affinity for sensational interests might serve a form of intrasexual competition.

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Pathological and personality attributions are sometimes made about individuals who have ‘sensational’ interests (i.e., an interest in weapons, the occult, martial arts, the paranormal, and the military; Brittain, 1970). High profile serious offenders sometimes have these interests; thus Eric Harris and Dylan Klebold, instigators of the Columbine School massacre, allegedly had an

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inordinate interest in Nazism, knives, clubs, firearms, and violent computer games (Anton & Ryckman, 1999). More recently Auki Collins, an American citizen who became a mujahideen admitted that much of his attraction to this way of living reflected a long-standing love for weapons and the access to these his adopted faith and lifestyle afforded him (Collins, 2002). However, anecdotal reports of homicidal teenagers or radical extremists drawn into ostensible ‘political’ militancy by their fascination for weaponry do not make for scientific theories applicable to the range of individual differences (Egan, *in press*). One of the most basic criticisms that can be made of such observations is that such phenomena are also seen in non-offenders. Another objection is that ‘sensational’ interests are very much determined by the cultural milieu, and that the details and practicalities of violence, drug use, and fetishising paranormal and physical power are not cross-culturally valid. One might argue that it is the opposite that is the case, as body modification, drug use, weapons and paranormal or ‘transgressive’ beliefs are significant in both traditional and Western societies and may reflect general tendencies that unite the sociologist, anthropologist and psychologist (Vale and Juno, 1989; Presdee, 2000; Egan, *in press*). The current study seeks to overcome some of these objections and link sensational interests to evolutionary constructs associated with offending behaviour in a Western population.

Irrespective of their heuristic value in forensic settings, the sensational interests construct was, until recently, an arbitrary and atheoretical mix of generic psychopathology, common interests of no differentiating value, and constructs with more legitimate possible diagnostic utility. Egan, Auty, Miller, Ahmadi, Richardson, and Gargan (1999) sought to formally measure sensational interests so that the relationship between these interests and more general psychological factors such as personality could be better understood. They found that sensational interests reduced to two correlated dimensions; Militarism and the Violent Occult; these constructs were highly reliable, and led to the creation of a brief checklist, the Sensational Interests Questionnaire (SIQ; Egan et al., *op cit*). Although the correlations were not strong, scores on the SIQ were higher in males and correlated with low Agreeableness, low Conscientiousness, and younger ages. A subsequent study (Egan, Charlesworth, Richardson, Blair, & McMurrin, 2001) examined the SIQ in a cohort of mentally disordered offenders using the Sensation Seeking Scale (Zuckerman, 1984). This study found that there were correlations in the region of 0.50 between the SIQ sensational subscales and two dimensions of sensation seeking: Disinhibition and Thrill and Adventure Seeking, the Disinhibition scale arguably reflecting externalised behavioural pathology. The less risk-oriented sensation seeking subscales of Boredom Susceptibility and Excitement Seeking showed no such associations. This study seemed to suggest one should focus on more psychopathological individual differences to understand the basis of sensation interests. A third study of sensational interests examined their relationship to self-reported DSM-IV personality disorders and the “Big Five” (see Digman, 1996; Goldberg, 1990; and John, 1990 for reviews) personality traits (Egan, Austin, Elliot, Patel, & Charlesworth, 2003). Using confirmatory factor analysis to define the latent personality dimensions underlying both types of assessment in 155 referrals for forensic clinical psychology assessment, it was found that sensational interests were exclusively associated with a personality disorder factor dimension defined by high loadings on low Agreeableness, and anti-social, borderline and histrionic personality disorders. This suggests that primarily neurotic or mental illness-associated personality disorders are not systematically related to an interest in sensational topics.

Ellis and Walsh (2000) note that despite minor exceptions to the general rule, offenders are disproportionately young, male and antisocial. Quinsey (2002) suggests that this forensic constant reflects an evolutionary strategy: the intrasexual competition for partners. Evolutionary psychologists have argued that organisms can devote resources to one of two general mating strategies: parental effort and mating effort. Having fewer sexual relationships and decreased investment in the offspring reflect the former strategy whereas the other reflects the investing of energy into the acquisition and guarding of many short-term mates. Rowe, Vazsonyi, and Figueredo (1997) hypothesized that high mating effort may often result in delinquency, especially if the individuals have no other means to acquire resources apart from crime.

One source of controversy has been whether parental effort and mating effort are conditional or alternative strategies. The former hypothesis states that whether an individual engages in parental effort or mating effort is conditional upon environmental circumstances, in particular the environment's stability. For example, some researchers (Belsky, Steinberg, & Draper, 1991; Draper & Harpending, 1982) claim that environmental conditions act as cues that trigger developmental paths leading to either parental effort or mating effort. These researchers predict and report evidence suggesting that the best strategy in an unstable environment in which there is little certainty involves the acquisition of mates and production of enough offspring so that some survive. By contrast, the best strategy to follow in stable environments would be to devote more resources to fewer children.

The alternative hypothesis is that these strategies are discrete and that individuals are not predisposed to them as a result of being exposed to some environmental trigger, but are innately predisposed to one or the other. Rowe and his colleagues (1997) used a sibling design and showed that individual differences in mating effort were highly heritable and that shared environmental effects were negligible. They also found that mating effort predicts delinquency even after social failure was accounted for and that an older sibling's mating effort successfully predicted a younger sibling's later delinquency. These findings supported their hypothesis that parental effort and mating effort reflect alternative rather than conditional strategies and that familial effects that might serve as cues did not contribute to variance in mating effort. Researchers (Mealey, 1995; Rowe et al., 1997) have pointed out that for alternative strategies such as delinquency to exist together in a population, the strategies must be equally successful with respect to survival and reproduction. Furthermore, the relationship between mating effort and delinquency showed that not only was mating effort a strong predictor of delinquency, but also that delinquency, and thus possibly crime, might represent an evolved alternative strategy.

A recent study of juvenile sex offenders (Hunter, Figueredo, Malamuth, & Becker, 2003) found that high mating effort led to a series of deviant behavioral strategies including hostile masculinity and general (non-sexual) delinquency, which culminated in sex offending. While Hunter and his colleagues (2003) did not take into account sensational interests, it is likely that these interests are another deviant behavioral strategy arising in individuals high in mating effort. This suggests that, while sensational interests may be a strategy that future offenders have attempted to use in the past, normal individuals who are not at risk of offending may also use such interests. For normal individuals sensational interests may be just one means of intrasexual competition that the individual has within his or her behavioral repertoire.

Why should sensational interests reflect greater mating effort? It has been proposed that high mating effort strategies among human males are likely to be expressed in symbolic dominance

contests that serve to avoid the risks of injury entailed by violent confrontations—although the former may sometimes escalate into the latter, as in the case of violence at sports events (Daly & Wilson, 1988). Such symbolic dominance contests may entail displays of fitness indicators (Miller, 2000), which are costly and difficult-to-counterfeit signals of genetic quality. We speculate that a mastery of sensational information with a content denoting some familiarity with the means of acquiring power may serve as a signal of motivation, commitment, and even excess mental capacity, and thus serve to impress certain males during symbolic displays of status. This could account for the symbolic significance of firearms in delinquent males. Excess mental capacity and expended effort may thus be displayed outside the bounds of mainstream academic achievement and a competency in conventionally valued skills by individuals for whom neither of the latter is a priority, and for whom the lurid content of sensational interests holds a more immediate emotional appeal.

This hypothesis generates several predictions. First, mating effort should be higher in males and should diminish with increasing age. Second, mating effort should be related to sensational interests and, hence, age and sex should be indirectly related to sensational interests. This paper will also explore the possibility that different facets of sensational interests are directly related to sex and age.

1. Methods

1.1. Participants

Nine hundred and sixty-nine participants in introductory psychology classes at the University of Arizona completed a mass survey at the beginning of the semester. All participants received one credit towards their research participation requirement. Of this cohort 26 participants were excluded because they did not provide either age or sex. Of the remaining 943 participants, 377 were male and 566 were female. The sample age ranged from 16 to 45 years (mean = 18.89; S.D. = 2.27); male age ranged from 17 to 45 years (mean = 19.07; S.D. = 2.41), female from 16 to 41 years (mean = 18.77; S.D. = 2.16).

1.2. Measures

1.2.1. The Mating Effort Scale (MES)

The MES is a 10-item scale designed to assess individual differences in mating effort, this being defined as the inclination to invest energy in the procurement and guarding of short-term sexual partners. Mating effort, as measured by this scale, has been shown to be heritable and related to delinquency in adolescent males (Rowe et al., 1997). The original scale was used to assess mating effort in heterosexual males. We modified the scale so individuals could base their ratings on the sex they dated. This made the scale applicable for males or females of any sexual orientation. Each item is rated using a five-point Likert scale with responses ranging from -2 (Strongly Disagree) to $+2$ (Strongly Agree). The internal consistency in our sample was 0.76, which did not differ from the internal consistency reported in Rowe et al. (1997). The MES correlates 0.59 ($P < 0.001$) with self-reported primary psychopathy in normal adults (Egan and Angus, in press). The questions from the scale are shown in Table 1.

Table 1
Mating Effort Scale items

1.	FEMALE: MALE:	When I see an attractive boy with his girlfriend, I might try to get his attention When I see an attractive girl with her boyfriend, I might try to get her attention
2.	FEMALE: MALE:	I would rather date several boys at once than just one boy I would rather date several girls at once than just one girl
3.	FEMALE: MALE:	I think boys find me naturally attractive I think girls find me naturally attractive
4.	FEMALE: MALE:	I like boys more for their good looks than for their companionship I like girls more for their good looks than for their companionship
5.	FEMALE: MALE:	I would get back at someone who looked at my boyfriend in the wrong way I would get back at someone who looked at my girlfriend in the wrong way
6.	FEMALE: MALE:	I would start a relationship with another boy before ending one with my current boyfriend I would start a relationship with another girl before ending one with my current girlfriend
7.		My friends respect me because they know I'm a little wild and crazy
8.	FEMALE: MALE:	If other girls think I am attractive to boys, they will stay away from my boyfriend If other boys think I am attractive to girls, they will stay away from my girlfriend
9.	FEMALE: MALE:	Other girls respect me because they know I have a lot of friends who would support me Other boys respect me because they know I have a lot of friends who would support me
10.	FEMALE: MALE:	If other girls think I am "tough," they will stay away from my boyfriend If other boys think I am "tough," they will stay away from my girlfriend

1.2.2. *The Revised Sensational Interests Questionnaire (SIQ-R)*

The SIQ-R was based on Egan et al.'s (1999) Sensational Interests Questionnaire (SIQ). The reason for the revision to the SIQ was that the initial instrument elicited a simple self-report of interest intensity. This made no allowance for how important the interest was to the subject or how much they knew about the topic. To address this, one major revision included using multiple indicators (interest, knowledge, and importance) for each item. These indicators indexed greater levels of engagement with the individual topics and reduced the amount of error variance associated with a single indicator. Interest for all topics was rated using a five-point Likert scale with responses ranging from -2 (Great Dislike) to $+2$ (Great Interest). Importance for all topics was rated using a five-point Likert scale with responses ranging from -2 (Completely Unimportant) to $+2$ (Completely Important). Knowledge for all topics was rated using a five-point Likert scale with responses ranging from -2 (None or Passing) to $+2$ (Advanced).

Limitations on the length of the questionnaire necessitated focusing on sensational interests and eliminating earlier SIQ filler items and those items that did not tap the latent construct. Thus, the SIQ-R included additional items: Special Forces/Green Berets/SEALS; mercenaries and pirates; gangsters and mobsters; and pyrotechnics and bomb making. These items measured other putative sensational interest topics and eliminated topics unrelated to sensational interests (e.g. hill walking, fishing). Finally, some topics familiar to British participants, e.g. Special Air Services (an elite commando unit) were changed to equivalent constructs familiar to American participants such as Green Berets/Navy SEALs.

1.3. *Procedure*

Participants in two introductory psychology classes were given MES and SIQ-R as part of a mass survey. As part of these questionnaires, age and sex were recorded. The MES score for any participant was computed by taking their mean score on non-missing items. This overcame any potential difficulties associated with skipped items (Figueredo, McKnight, McKnight, & Sidani, 2000). For the purposes of the analysis we dummy coded sex (females = 0; males = 1). This step enabled us to interpret the path coefficient of sex to any variable as indicating how much higher or lower the mean for males was.

The mean of the participants' interest, knowledge, and importance score for each topic item was used to overcome potential problems with missing data. Three subscales of the SIQ-R were then constructed using these mean scores. These subscales were a priori constructed based on face content of the items.

The first subscale assessed Militarism and comprised 10 topics: armed forces, body-building, crossbows and swords, guns, martial arts, mercenaries and pirates, motorbikes, pyrotechnics and explosives, Special Forces, and survivalism. The second subscale assessed Paranormal Interests, and included six topics: astrology, black magic, flying saucers, paganism, the paranormal, and vampires and werewolves. The third subscale, Criminal Identity, comprised three topics: drugs, gangsters, and tattoos and body piercing. The Militarism subscale was equivalent to the Militarism scale discovered in the original SIQ study (Egan et al., 1999). The Paranormal Interests subscale assessed some of the elements found in the Violent Occult factor identified in the original SIQ study (Egan et al., 1999).

1.4. Statistical analysis

We tested our hypotheses using a statistical model, fitting age, sex and MES to the latent Sensational Interests factor (itself made up of the measured variables of Militarism, Paranormal Interests, and Criminal Identity). This structural equation model was tested using EQS (Bentler, 1995). We tested whether we needed to include additional paths using Lagrange Multiplier tests.

2. Results

Table 2 shows the correlations between the mean of the interest, knowledge, and importance for each topic and the Militarism, Paranormal Interests, and Criminal Identity subscales. Table 3 shows the correlations among the Militarism, Paranormal Interests, and Criminal Identity subscales and their internal consistency alphas. The correlations among subscales are high, suggesting that they are measures of a latent Sensational Interests factor. The unadjusted internal consistency alpha reliabilities for these subscales were 0.92, 0.90 and 0.78, respectively. Simple correlations between the MES and total SIQ-R score, and the SIQ-R subscales of militarism, paranormal interests, and criminal identity were all significant and positive; 0.29, 0.20, 0.16, and 0.32, respectively (all P s < 0.001, one-tailed).

Fig. 1 presents our hypothesized model and the direct effect effects of sex on militarism and criminal identity. After including direct effects of sex on Militarism and Criminal Identity that were indicated by Lagrange Multiplier tests, the overall fit of this model was rejectable by the

Table 2
Lambda matrix of correlations between specific sensational interests and the three subscales^a

Interest	Militarism	Paranormal interests	Criminal identity
Special Forces	0.76	0.42	0.35
Crossbows	0.76	0.45	0.30
Guns	0.71	0.33	0.36
Motorbikes	0.70	0.42	0.35
Mercenaries	0.70	0.62	0.45
Martial Arts	0.67	0.42	0.26
Pyrotechnics	0.65	0.48	0.51
Armed Forces	0.63	0.21	0.18
Survivalism	0.62	0.35	0.21
Body Building	0.52	0.14	0.13
Vampires	0.47	0.79	0.51
The Paranormal	0.46	0.77	0.37
Flying Saucers	0.44	0.76	0.33
Black Magic	0.35	0.76	0.37
Paganism	0.52	0.72	0.37
Astrology	0.22	0.63	0.24
Drugs	0.27	0.34	0.78
Gangsters/Mobsters	0.48	0.45	0.73
Tattoos/Piercings	0.23	0.31	0.71

^a All correlations significant at $P < 0.0001$. Loadings in boldface indicate the subscale an item belongs to.

Table 3

Correlations among and internal consistencies of the militarism, Paranormal Interests, and Criminal Identity Subscales^a

	Militarism	Paranormal interests	Criminal identity
Militarism	0.92	0.55	0.43
Paranormal Interests		0.90	0.49
Criminal Identity			0.78

^a The off diagonal numbers are Pearson's correlation coefficients indicating the strength of the correlation between factors. The diagonal elements are unstandardized internal consistency alphas.

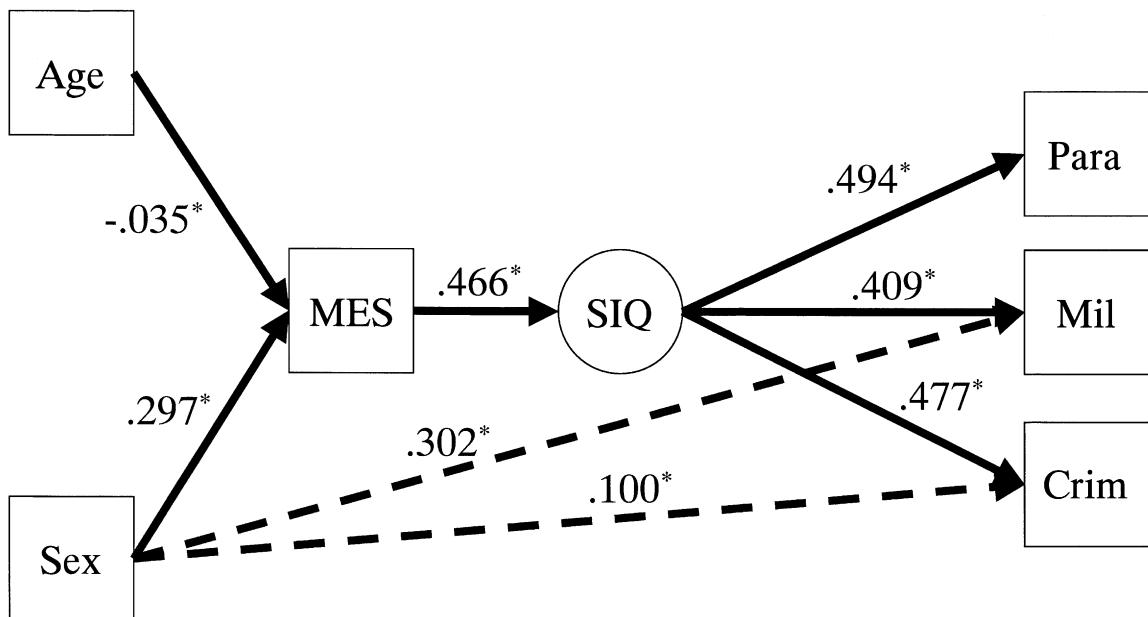


Fig. 1. Solid arrows indicate the a priori hypothesized paths. Dashed arrows indicate the two paths that were determined by Lagrange multiplier tests. MES = Average of all items on the Mating Effort Scale; SIQ = The latent sensational interests factor; Para = Average of all items in the Paranormal Interests subscale; Mil = Average of all items in the Militarism subscale; Crim = Average of all items in the Criminal Identity subscale.

strict statistical criterion, but ranged from acceptable to excellent by the practical indices of fit (χ^2 [df=6]=39.872; $P<0.001$; $RMSEA=0.079$ [90% $CI=0.057, 0.103$], Bentler–Bonett $NFI=0.957$, $CFI=0.963$).

We predicted that mating effort should be higher in males and should be lower in older subjects. We also predicted that MES, in turn, should cause SIQ-R, a latent factor measured by the Militarism, Paranormal Interests, and Criminal Identity subscales.

The factor analytic structural equations model used to test these predictions was composed of a measurement model and a structural model. The measurement model included paths from the latent SIQ-R factor to each of the three measured subscales: Militarism, Paranormal Interests, and Criminal Identity. The structural model includes the effects of age and sex on MES and the effects of MES on SIQ-R, indicating there were indirect effects of age and sex on SIQ-R.

The causal paths from the latent SIQ-R factor to Paranormal Interests ($b=0.494$; $SE=0.022$), Militarism ($b=0.409$; $SE=0.021$), and Criminal Identity ($b=0.477$; $SE=0.023$) subscales were significant and high indicating that these subscales all measured a common sensational interests factor (SIQ-R). Our predictions concerning the relationships between sex, age, and mating effort were confirmed. The path from sex to MES was positive and significant ($b=0.297$; $SE=0.040$) indicating that males had higher MES scores than females. The path from age to MES was negative and significant, but small ($b=-0.035$; $SE=0.009$) indicating that MES scores were lower in older individuals. The weak association might be attributable to the marked restriction of ages in the sample. Our second prediction, that mating effort would be related to sensational interests and, hence, age and sex should be indirectly related to sensational interests, was confirmed. There was a significant relationship between the MES and the SIQ-R ($b=0.466$; $SE=0.065$). The direct, positive effects of sex on the Militarism ($b=0.302$; $SE=0.036$) and Criminal Identity ($b=0.100$; $SE=0.040$) indicated that sex contributed to these subscales over and above the degree to which it was related to them via mating effort.

3. Discussion

Testing the relationship between mating effort and sensational interests in a sample of young people with a relatively restricted range of ability and personality is a strong empirical test that this phenomenon is not exclusive to mentally disordered offenders and reflects one of many means of intrasexual competition. Mating effort caused sensational interests and moderated sex and age effects on sensational interests. It thus appears that because males were higher in mating effort they were also higher in sensational interests. On the other hand, older participants were lower in mating effort and, consequently, lower in sensational interests. There were also direct effects; perhaps unsurprisingly, these involved the direct effects of sex such that males had a higher interest in Militarism and Criminal Identity.

These results suggest that sensational interests may be one of many strategies used in intrasexual competition. Other strategies that may be used in intrasexual competition by those high in mating effort including resource acquisition by legal or illegal means, wholesome activities indicating health or intelligence, or fitness displays of more or less social acceptability (e.g. sports, physical combat, or active aggression). The relationship between mating effort and sensational interests complements the research by Egan et al. (1999, 2001, 2003) showing that normal personality traits are related to sensational interests in mentally disordered offenders by offering a predictor variable that is based on evolutionary theory. This suggests that including mating effort in future assessments of mentally disordered offenders as an outcome of personality and a direct cause of sensational interests is likely to increase the amount of variance explained. Candidate personality traits functioning in synergy with mating effort include low agreeableness, low conscientiousness, Eysenckian Psychoticism, and high sensation seeking. These findings also reflect Figueredo, Sales, Russell, Becker, and Kaplan's finding (2000) that juvenile sex offending stems from the attempts of competitively disadvantaged males to acquire mates using various criminal and non-criminal tactics before resorting to offending.

There were some shortcomings of the study. First, students were self-selected for intelligence and other personality traits that contribute to high educational attainment and protect against

delinquency or deviant interests. Moreover, irrespective of any mild subcultural deviance expressed by some members of the student population, they are very different from young people in the community, for whom the later years of adolescence reflect the peak age of offending. Measuring self-reported delinquency in conjunction with the other measures may provide a future means of testing whether these assumptions are justified.

Other future directions for this research should include a study to determine whether the relationship between mating effort and sensational interests generalizes across cultures and whether these relationships hold up or increase in non-student populations. In addition, the routine inclusion of personality measures will help to determine whether mating effort exerts a direct influence on sensational interests or whether it reflects personality alone. A third possible study is to include normal interests to determine whether individuals high in mating effort, but not predisposed to criminal behavior, use less flagrantly sensational interests such as poetry, sport, or the expressive arts as a means of intrasexual competition.

The study has practical value in that it demonstrates one can assess sensational interests in a systematic and reliable way, and within a non-pathological sample. Furthermore, the relationship between the SIQ-R and mating effort provides a way of understanding why individuals are interested in sensational topics. If this is identified in individuals with concurrent psychopathology, at-risk individuals may be more easily detected, and interventions designed to enable the individual to develop less potentially dangerous interest patterns (e.g. sports, the creative or expressive arts) implemented. One helpful step in this direction would be to apply item response theory to determine whether any items are particularly able to discriminate between normal and offender populations.

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