

[in press, *Archives of Sexual Behavior*, August 2012]

Letter to the Editor: A response to “Reexamining individual differences in women’s rape avoidance”.

Recently, Snyder and Fessler (in press) published in *Archives of Sexual Behavior* an article entitled “Reexamining individual differences in women’s rape avoidance”. This article was written in response to an article we published in *Archives of Sexual Behavior* (McKibbin, Shackelford, Miner, Bates, & Liddle, 2011). Snyder and Fessler (hereafter referred to as S&F) criticized our work on both theoretical and empirical grounds. We thank these authors for their interest in our work. In this letter, we address their criticisms and problems associated with each criticism.

Theoretical Problems

We have argued that, in response to the severe physical, psychological, and genetic costs associated with sexual assault and rape, women may possess specialized and domain-specific evolved psychological mechanisms designed to motivate rape avoidance behaviors (McKibbin et al., 2009, 2011.) These mechanisms attend to the individual risks and costs associated with a given environment or behavior, and appear to be sensitive to individual differences in women. S&F suggest that the operation of “generalized learning” mechanisms provides a more parsimonious explanation than our explanation, which relies upon domain-specific mechanisms. For example, they argue that a positive relationship between attractiveness and rape avoidance behavior is explicable through general-purpose learning mechanisms. Specifically, they state that attractiveness is likely to be positively correlated to experiencing unwelcome sexual attention and, therefore, more attractive women will learn to be more cautious in this regard, including

(presumably) by performing more rape avoidance behaviors. S&F appear not to appreciate that invoking the operation of general-purpose mechanisms requires *additional* explanation than invoking the operation of domain-specific mechanisms. For example, the problems of unbounded rationality and combinatorial explosion render explanations using general-purpose learning mechanisms dubious. (See, e.g., Buss, 2012; Tooby & Cosmides, 1992, 2005 for an overview of these and related issues.) In fact, it is unclear whether truly domain-general mechanisms could evolve (Cosmides & Tooby, 2002). In this case, S&F must explain how a general-purpose learning mechanism can process and act upon the almost limitless sensory information in the world, including, in this case, unwanted sexual attention. An analogy makes the problem clearer. If one thinks of the brain as a computer, and psychological mechanisms as software, it is difficult to imagine a piece of software that could perform every function one may want to perform with a computer. Instead, computers are effective because they employ *specialized* programs to perform specific tasks. Thus, S&F bear the burden of describing how such a general-purpose mechanism could function as they describe in their article.

Instead, we argue it is more parsimonious to conceptualize, for example, unwanted sexual attention as a *proximate explanation*—that is, an explanation as to how evolved psychological mechanisms register the level of risk in an environment. One way to do so might be to attend to and process the amount of unwanted sexual attention received in a particular environment. This explanation is more parsimonious than an explanation invoking a general-purpose learning mechanism, which must somehow process not only this information, but also by definition a nearly unlimited amount of other types of information.

In conclusion, the theoretical critique provided by S&F does not provide a more parsimonious or compelling explanatory framework. Indeed, the assumptions presented

regarding general-purpose learning mechanisms reflect a misunderstanding of basic evolutionary psychological meta-theory (see e.g., Tooby & Cosmides, 1992, for an overview of these issues).

Empirical Critiques

Instruments

In addition to the theoretical problems plaguing the arguments presented by S&F, there are methodological and empirical problems in their research. The first problem is their choice of dependent variables, and how these variables are operationalized. S&F argue that self-reported fear of rape motivates actions to avoid rape. This is almost certainly true, to the point of spuriousness. Therefore, we question what useful information this provides. Nonetheless, S&F report correlations between the Fear of Rape Scale (FORS) and our Rape Avoidance Inventory (RAI), as well as single-item assessments of fear of being sexual assaulted and fear of being sexually harassed. It is unfortunate that S&F collect and report data on single-item assessments. Single-item assessments are low in empirical value, as their reliability and validity are more challenging to assess. No assessments of either are presented in S&F's research. Single-item assessments may or may not be valid, depending on the domain of information being assessed (see Bernard, Walsh, & Mills, 2005). Because the validity of these items has not been demonstrated, we question the use of these measures. In contrast, the multiple-item RAI used in our research has been demonstrated to be reliable and valid (McKibbin et al., 2009, 2011), although we recognize that this new instrument has been used in a limited number of studies to date. Although no measure is perfect, the RAI better captures the domain of rape avoidance than single-item assessments regarding fear of sexual assault or harassment.

S&F argue that the FORS represents an appropriate method of testing predictions originally tested using the RAI. Ignoring the spurious nature of the relationship between these

two variables, the FORS is empirically problematic. Briefly, responses of *don't know / not applicable* are coded at the midpoint of the response scale (4 on a scale of 1-7). Thus, a participant who recorded all their answers as “unknown” or “not applicable” would receive the same overall score as an individual who scored some FORS scale items quite high and others quite low. We question the results derived from the use of this scale.

Procedure

The research presented by S&F has procedural problems as well. The first problem is related to the sample. S&F used several online methods to recruit a “more diverse” sample than we recruited for our research. This is a laudable goal, and one we suggested in the Discussion section of our article (McKibbin et al., 2011, p. 348). S&F argue that their sample is more appropriate than our sample. However, the sample presented by S&F is undereducated relative to the general public, is self-selected, and has an especially high level of participant attrition. Although our sample was not without problems, (see McKibbin et al., 2009, 2011 for discussion) we disagree with S&F's suggestion that their sample is more appropriate than our own.

S&F may have inadvertently created links between some of the variables measured, rather than simply measuring existing relationships between them. Specifically, S&F may have introduced confounding priming effects. The researchers asked women 32 questions about their fear of rape, sexual assault, or sexual harassment. These questions appear to have been administered *prior* to asking women about their rape avoidance behavior, as measured by the RAI. Given that the RAI asks about rape avoidance in a retrospective fashion, the numerous questions about fear of rape may have primed women to think about such issues and caused them to report inaccurately their rape avoidance behavior. Because there is no evidence of counter-

balancing in the study by S&F, it is not possible to assess whether or to what degree some of the results might be affected by order effects.

Results

S&F test each of the predictions we tested in our work, using both the RAI and their own measures of fear of rape, sexual assault, and sexual harassment. Several problems are apparent in their analyses. First, S&F generally report results using only *overall* RAI scores (with Prediction 4 an exception), whereas we reported results for each prediction using total scores as well as the individual scores for each of the four categories of rape avoidance behaviors. We regret that S&F chose not to report results associated with subcategory scores in most cases, making comparisons between the studies difficult.

Regarding Prediction 1, S&F argue that concern with sexual harassment explains the negative correlation between age and rape avoidance behavior. Again, the sexual harassment item is a single-item assessment of unknown reliability and of unclear validity. In addition, the negative relationship between age and *concern* with sexual harassment does not necessarily mean women experience less *actual* harassment. For example, the relationship might also reflect less personal concern or upset regarding being sexually harassed. As women age, they are perceived as less attractive by men (Buss, 1989; Shackelford, Schmitt, & Buss, 2005). Perhaps as women age, sexual harassment (an indicator of attraction) is perceived less negatively, and rather as an indication of continued attractiveness. S&F's results cannot rule out this alternative explanation. We also note that when using the RAI, and not the problematic single-item assessments or FORS, S&F report findings that parallel our own. That is, two subscales of the RAI are correlated with self-perceived attractiveness.

Regarding Prediction 2, S&F find different response patterns in mated versus unmated women. These findings parallel our own. In addition, S&F report a more nuanced test of relationship status, examining the effect of co-residence along with relationship status. We thank the authors for following our suggestion to more carefully assess relationship status, mentioned in the Discussion section of our paper (McKibbin et al., 2011, p. 248).

S&F suggest that their findings regarding Prediction 2 may reflect a methodological artifact, due to the nature of some of the RAI items. (Briefly, according to S&F, some items reflect behavior in mated women which has been “culturally proscribed”—e.g., “Avoid blind dates”). Similarly, we speculated that these types of behaviors were less likely to be performed by women as they age (McKibbin et al., 2011, p. 348). This purported methodological artifact may explain the relationship with items of this “culturally proscribed” type (typified in the *Avoid appearing sexually receptive* category of RAI behaviors), but cannot explain why mated women also perform more behaviors in the *Awareness and Preparedness* category of rape avoidance behaviors. (Relatedly, S&F again do not report correlations with RAI category scores.) In addition, S&F test this methodological artifact hypothesis by removing a number of the “culturally proscribed” items from the RAI and re-analyzing their data. However, this would presume that all married women never seek out extra-pair copulations or otherwise interact with men other than their partner. This is a problematic presumption, given significant evidence to the contrary. (e.g., Gangestad, 2006; Gangestad & Thornhill, 1997; Greiling & Buss, 2000).

Regarding Prediction 3, S&F test our prediction that the number of women’s family members living in close proximity will correlate positively with the frequency with which women perform rape avoidance behaviors. There are several problems with S&F’s test of this prediction, however. First, S&F use co-residence with a family member as the predictor of rape

avoidance, fear of rape, and concern with sexual assault, rather than using the number of family members living close by, as we did (guided by Figueredo et al., 2001). S&F may be measuring a different construct altogether. The effects of co-residence are difficult to parse. If (as S&F note) fear drives proximity, this may drive women who are more fearful to live with those who can best protect them. Yet, in doing so, fear would likely be diminished. Given the unclear nature of these variables, the results of these tests should be interpreted with caution.

Regarding Prediction 4, we thank the authors for following our suggestion (McKibbin et al., 2011, p. 348) and attempting to collect a more diverse sample, especially with regard to age. As evident in S&F's results, age may be positively correlated with some categories of rape avoidance behavior. For similar reasons mentioned earlier, these may be spurious relationships reflecting changing behavioral patterns in women as they age (e.g., less likely to go to parties, drink, etc.). Yet again, this spuriousness fails to explain the relationship between age and the *Awareness and Preparedness* category of rape avoidance behavior. S&F also note, as we did (McKibbin et al., 2011, p. 348), that the RAI may be most relevant to the relatively affluent Western sample from which it was developed. S&F argue in the General Discussion that this means the RAI is of questionable utility. We agree that the RAI in its current form is most useful when applied to relatively affluent, Western samples. But we consider the initial development of the RAI as an important first step only. We encourage researchers attempting to collect data from more diverse samples to consider modifying the RAI to exclude items less relevant to the particular sample. For example, if studying a sample of hunter-gatherers, one should remove items pertaining to one's car or meeting a man from the internet. Researchers might also consider developing a similar instrument which reflects behaviors most relevant to the sample at hand (see McKibbin et al., 2009 for details of RAI development.)

Conclusions

In conclusion, S&F offer several theoretical and empirical critiques of our research. However, S&F's invocation of general-purpose learning mechanisms as an explanation for our results and for their own results is more problematic and less parsimonious than the more domain-specific mechanisms we proposed (McKibbin et al., 2009, 2011). Furthermore, S&F's research is plagued by several problems, including possible priming effects, poor operationalization of variables, and failure to report key analyses. We encourage readers to critically examine the research presented by S&F as well as our own research before drawing any conclusions.

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