

POSTER

Comparing Multiple Indirect Measures of Sexual Interest with Implicit but Direct Eye-Tracking and Pupil Dilation

Dr Caoilte Ó Ciardha, University of Kent, UK
Dr Markus Bindemann, University of Kent, UK
Janice Attard, M.Sc., University of Kent, UK

Recent research with offending populations has examined the development of alternatives to penile plethysmography in assessing deviant sexual interest. This research has specifically explored implicit cognitive measures to covertly assess offenders' sexual interest. The most common measures include viewing time, Implicit Association Tests (IATs) and Choice Reaction Time (CRT) tasks. As a result several tasks are commercially available (e.g. the Abel Assessment of Sexual Interest, Affinity, NRP Choice, NRP Stroop). Despite increasing application in forensic settings, the development of measures remains an ongoing task. For example, a vacuum still exists in the literature regarding the theory and mechanisms underpinning these tasks (Ó Ciardha, 2011). Moreover, replication of methodologies across laboratories has yielded inconsistent results for apparently analogous tasks (e.g. CRT; Mokros et al. 2010; Gress, 2006; Ó Ciardha & Gormley, 2012). This raises concerns regarding the application of implicit measures of sexual interest to offending populations. An additional concern relates to the extent to which various implicit measures of cognitive activity are, in fact, direct measures of sexual interest. Consider that these tasks typically require overt responses from participants, such as button presses in reaction time paradigms. Participants can manipulate the outcome of such tasks by adjusting the speed or accuracy of their own responses. This could be achieved if a participant guesses or knows the task aims and chooses to respond in a non-sensical pattern or even if a person simply fails to adhere closely to task instructions. These factors are likely to influence the effectiveness of implicit measures of sexual interest. As a result, the validity of such tasks for use in real world assessment of offenders may be open to question.

Existing implicit measures, such as the IAT and CRT, therefore provide implicit but indirect measures of cognitive processing. As an alternative, we have developed a new measure that is both implicit and direct. Specifically, we tracked the eye-movements of observers to photographs of women, men, and children. Eye movements provide a real-time index of ongoing cognitive processing and have been used widely to study person perception and visual preferences. With this technology, it may be possible to determine not only which age and gender captures an observer's attention (e.g., adults or children), but also which part of a person's body they are drawn to (Bindemann et al., 2010). Eye movements might therefore provide a remarkably direct and detailed measure of an observer's sexual attention. However, for the implicit assessment of sexual interest, eye tracking offers an additional measure that might confer an even greater advantage. During visual processing, observers' pupils increase in size (dilate) as arousal increases. This is an involuntary behavior that is outside an observer's control. In eye-tracking, pupil size can be recorded with millisecond timing and linked directly to the material that a person's is viewing. Pupil dilation should therefore provide a robust implicit and direct index of a person's sexual interest

The aim of the project was to explore the possibility that eye tracking and, specifically, pupil dilation can offer an implicit and direct method for assessing deviant sexual interest. Moreover, the study

seeks to compare this approach with three indirect implicit measures of sexual interest to examine the sensitivity of existing methods, namely viewing time, the CRT and a pictorial IAT. These tasks were chosen as they have yielded some of the most robust assessments of sexual deviance to date. Participants additionally complete a child molestation proclivity measure (Gannon & O'Connor, 2011) to determine the relationship between all our tasks and self-reported problematic sexual interest. Using a large sample of non-offenders allows us to have sufficient statistical power in our analyses to properly tease out our research questions. The ability of the task to provide an alternative, more direct, measure of sexual interest, will be discussed as will implications regarding the sensitivity and specificity of the CRT, viewing time, and IAT paradigms. These findings will directly impact on the development of such tasks for use in assessment by practitioners.