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Men's Memory for Women's Sexual-interest and Rejection Cues

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Summary: The current work characterizes young men's memory for young women's heterosocially relevant affective cues (e.g. sexual interest and rejection) and examines characteristics of both the woman being perceived and the male perceiver as predictors of memory. Undergraduate men (n = 232) completed similarity-ratings and recognition-memory tasks with photos of undergraduate women who varied in attractiveness, provocativeness of clothing and expression of sexual interest. Participants also completed a control memory task and a measure relevant to the risk of exhibiting sexually aggressive behaviour, as well as indicating how many serious relationships they had experienced. Multilevel regression techniques revealed that (a) men's memory for women's sexual interest improved when women were sexually interested at encoding, attractive and dressed provocatively; (b) men who reported more frequent serious relationships showed better memory for women's sexual interest and (c) men at risk of exhibiting sexually aggressive behaviour showed worse memory for women's sexual interest. Copyright © 2010 John Wiley & Sons, Ltd.

Men's memory for women's heterosocially relevant affect (e.g. sexual interest and rejection) is a surprisingly understudied area of inquiry, given the hypothesized centrality of affective processing to social interactions, intimate relationships and sexual aggression among acquaintances (e.g. Abbey, McAuslan, & Ross, 1998; Casey, Garrett, Brackett, & Rivers, 2007; Mayer, Roberts, & Barsade, 2008; McFall, 1990). Nonverbal affective cues, particularly sexual-interest and rejection cues, frequently are used to communicate to a current or potential partner the likelihood that initial or continued sexual overtures will be received positively (e.g. Abbey, 1982; Fichten, Tagalakis, Judd, Wright, & Amsel, 1992; Muehlenhard, Koralewski, Andrews, & Burdick, 1986). Heterosocial competence requires not only accurate perception of these affective cues, however, but also recognition of changes in the cues, such as from positive to negative. Memory provides critical support for successful change detection, *via* adequate storage and retrieval of affective information. Successful initiation and maintenance of serious romantic relationships, for example, necessitate detection and retention of the fluctuations in a partner's emotions. Moreover, decreased attention and sensitivity to young women's affective cues have been linked to an increased risk of sexually coercive or aggressive behaviour towards acquaintances among college-aged males (see review by Farris, Treat, Viken, & McFall, 2008). Above and beyond impoverished encoding of women's affect, however, insufficient storage or retrieval of women's affective cues may decrease the likelihood that high-risk men recognize and respond appropriately to women's changing affect. In sum, careful characterization of the correlates of memory for young women's sexual interest may advance our understanding of the role of affective processing in both normative and problematic heterosocial interactions.

The present work uses multilevel modelling techniques to distinguish two classes of influences on men's memory: characteristics of the woman being perceived, and characteristics of the male perceiver. Researchers typically ignore either item- or participant-specific influences on cognitive processing by aggregating across either items or participants when conducting analyses (Rouder & Lu, 2005). Random-regression methods, however, allow researchers to integrate the stimulus-level analyses characteristic of cognitive psychology with the participant-level analyses that are more typical in social or clinical psychology. This approach provides a more complete picture of the multiple influences on cognitive processing, and it also enhances the power to detect them (Baayen, Tweedie, & Schreuder, 2002). In the current case, we anticipated that variation in men's memory for women would depend less on the characteristics of the women than on the characteristics of the male participants themselves, given the marked individual differences in men's processing of women's affect that have been observed in past work. The use of hierarchical linear modelling methods allowed us to examine women-specific effects after controlling for participant effects, however, thus enhancing our power to detect influences of women's characteristics on men's memory.

We asked whether young men better retain women's level of sexual interest if the women (a) display sexually interested or uninterested affect at study; (b) are dressed more or less provocatively and (c) are more or less normatively attractive. We focused on sexual interest and rejection cues, rather than a fuller range of affective cues, because detection of sexual interest and rejection is of central importance in heterosocial interactions and sexual coercion (Farris et al., 2008). We also used full-body photos of women, rather than head shots, as a burgeoning field of research demonstrates the role of nonverbal postural cues to emotion (e.g. deGelder, 2006). No prior work, to our knowledge, has examined whether men's memory for women's sexual interest is influenced by women's initial affective state (e.g. interested or rejecting) or other contextual factors, such as women's clothing style or attractiveness. Farris, Viken, Treat, and McFall (2006), however, evaluated whether men's sensitivity to women's affect varied as a function of the specific cue being emitted,

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as well as the provocative *vs*. conservative nature of the woman's clothing. Farris et al. showed male undergraduates full-body photographs of college-aged women that varied in the women's affective expression (sexually interested, friendly, sad, or rejecting) and the provocativeness of the women's clothing (conservative or provocative). Participants classified the woman's affect as they viewed each photo. Luce's (1959, 1963) choice model was used to estimate each participant's sensitivity to the four affective cues, separately for women dressed provocatively and conservatively. Farris et al. found that young men on average displayed greater sensitivity to women's positive affect (i.e. sexual interest and friendliness) than to their negative affect (i.e. sadness and rejection). Young men also showed greater sensitivity to women's affect when women were dressed conservatively, rather than provocatively. These findings suggest that young men may remember women's affect better when the women initially express sexual interest, rather than rejection, and that provocative dress may function as a distractor that decreases attention to and retention of women's affect. In the current study, we speculated that attractiveness would distract from processing sexual interest in a fashion similar to clothing style. This pattern of findings, if observed, would have troubling implications for men's normative interactions with women, as it would suggest that men on average are less well-positioned to respond effectively to the sexual-interest cues of women whom they find more appealing or interesting.

We also examined four participant characteristics as simultaneous predictors of young men's memory: attention to women's sexual interest, rape-supportive attitudes, general memory and number of serious relationships. Formal mathematical models of cognitive processing stipulate that attention provides critical input to other higher-order processes, such as memory, decision-making and learning (see Nosofsky, 1992). Thus, men who attended to women's sexual interest to a lesser degree on an independent task were expected to show reduced memory for women's sexual interest. Inclusion of attention to sexual interest in our model of memory also facilitated control of individual differences in encoding of sexual interest in our examination of other participant characteristics as predictors of memory. It is possible that any observed relationship between risk status and memory for sexual interest might be attributable to individual differences in memory more generally. Thus, we included performance on a memory task with line drawings of neutral objects as a control variable in our analysis.

We also anticipated that men at risk of exhibiting sexual aggression towards acquaintances would show decreased memory for women's sexual-interest cues, as several studies have documented that high-risk men display impoverished processing of women's affect (e.g. Abbey et al., 1998; Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001; see also Keown & Gannon (2008) for an examination of memory processes in child sexual offenders). For example, Treat, McFall, Viken, and Kruschke (2001) demonstrated that high-risk men, in comparison to low-risk men, attended relatively less to women's affect than to women's physical characteristics. Farris et al. (2006) and Farris, Viken, and Treat (2010) also showed that endorsement of rape-supportive attitudes correlated negatively with sensitivity to women's affective cues. Above and beyond memory impairment due to impoverished encoding, however, deficits in the storage and retrieval of affective information also could play a role in sexual aggression. Such deficits might decrease the likelihood of detecting increasing or accumulating negativity in a woman's response or slow learning about the impact of a man's behaviour on women's affect across interactions with multiple women.

Finally, we examined whether memory for women's sexual-interest and rejection cues correlated positively with the reported frequency of serious dating relationships. Social information processing and emotional intelligence theorists contend that accurate perception of emotion is central to satisfying intimate relationships and selection of intimate partners (e.g. Brackett, Warner, & Bosco, 2005; Casey et al., 2007; McFall, 1982; Smith, Heaven, & Ciarrochi, 2008). Most of the work conducted within the emotional-intelligence framework has focused primarily on the link between global emotional intelligence and either relationship satisfaction or quality, and the findings have been mixed (e.g. Brackett et al., 2005; Smith et al., 2008). Research examining the association between performance-based assessments of emotional perception and relationship indices has been more encouraging (e.g. Carton, Kessler, & Pape, 1999; Fitness, 2001). Thus, the present investigation extends work in this area by evaluating whether memory for sexual interest—above and beyond attending to such information—is associated with the frequency of serious relationships, given that retention of a partner's level of sexual interest presumably is central to the initiation and maintenance of serious intimate relationships.

METHOD

Participants

Participants were 232 undergraduate males who received partial course credit for completing the study. Their average age was 19.59 years ($SD = 1.53$). 80.3% were Caucasian, 10.8% were Asian–American, 4.5% were African–American and 4.4% endorsed other ethnicities. Seven participants did not respond to the question about the number of serious relationships. Thus, the sample sizes for the results vary slightly across analyses.

Photo stimulus set

The photo stimuli (see Figure 1 for sample photos) were 116 images of 58 undergraduate women (two images per woman) who displayed sexual interest in one photo and rejection in the other. All models wore warm-weather clothing that varied in provocativeness. Models brought their own clothing to the photo shoot, so their outfits were reasonably representative of undergraduate women's clothing. All photos were taken in front of a fixed background. The photos were selected from a larger set of 1127 photographs of undergraduate women displaying a variety of affective cues in a number of clothing styles (see Farris et al., 2006).

Figure 1. Sample photos of women varying along sexual-interest and provocativeness-of-dress dimensions

Normative ratings of the stimuli along affect, clothing style and attractiveness dimensions were obtained from two sets of raters. First, three expert raters (the first and second authors, as well as Farris, another member of our research team) provided judgments of each woman's sexual interest and provocativeness of dress on 9-point scales. When judging how much sexual interest the woman was expressing, the raters were instructed 'to focus only on the degree to which the woman is expressing sexual interest, and to ignore her clothing style, her attractiveness, your personal reactions to the woman or her clothing, etc.' When judging the sexual provocativeness of the woman's clothing, raters were asked 'to focus only on the sexual provocativeness of the clothing and to ignore characteristics of the model completely, including her affect, her attractiveness, how she looks in the clothing, your personal reactions to the woman or her clothing, etc.' Second, a separate sample of undergraduate men rated the photos on attractiveness on a 10-point scale. We used undergraduate men rather than experts as raters because young men are better positioned to evaluate the attractiveness of women of a similar age. An average normative rating of sexual interest, provocativeness of clothing style and attractiveness was computed for each photo. These normative ratings then were used to evaluate whether men's memory for young women's affect depended on whether the woman displayed sexual interest or rejection at encoding and whether the woman was dressed provocatively and was normatively attractive.

Correlations between normative ratings of the three dimensions were minimized to the extent possible during stimulus selection, but it was impossible to eliminate them completely. Ratings of sexual interest and provocativeness of clothing were uncorrelated, $r(56) = -.046$, and young men's ratings of attractiveness showed moderate correlations with sexual interest, $r(56) = .412$, and provocativeness of clothing style, $r(56) = .276$.

Tasks and measures

Photo preview

The photo preview ensured that participants were exposed to all of the to-be-remembered women and that they were aware of variation in the stimulus set before making similarity ratings. Participants viewed a single photo of each of 58 different women for 1 second each on a computer screen. For half of the women, their sexually interested photo was previewed; for the remainder, their rejecting photo was previewed. Participants were asked to study the photographs and became familiar with them; they were not told about the upcoming memory test. Photos were presented in a different random order for each participant.

Similarity ratings task

The similarity ratings task provided an index of implicit attention to sexual interest. Participants viewed 100 randomly selected pairs of all possible pairs of photos of the 58 women viewed in the Photo Preview for 2 seconds apiece. They judged the similarity of the photos on a 9-point scale, where '1' = 'very different' and '9' = 'very similar'. Participants were instructed to work quickly and were told that we were interested in their first impression of the women's similarity.

Line drawing preview

The line drawing preview provided participants an opportunity to study the neutral line drawings prior to the memory assessment. Participants viewed 50 black-and-white drawings of common objects (Snodgrass and Vanderwart, 1980) for 1 second each and were told that they later would be tested on their memory for the objects.

Recognition memory task (women)

The recognition-memory task for photos of women afforded assessment of both woman-specific and participant-specific predictors of young men's memory for women's sexual interest. Participants viewed 116 photos; half were identical to those seen in the preview and similarity-ratings tasks (i.e. 'old' stimuli). The remaining 58 photos depicted previously viewed women, but the woman's level of sexual interest differed (i.e. 'new' stimuli; e.g. a previously sexually interested woman appeared rejecting). The average sexual interest rating of the women was significantly and substantially greater when the women conveyed sexual interest ($M = 6.97$, $SD = 1.01$), rather than rejection ($M = 1.83$, $SD = .92$), $t(57) = 24.73$, $p < .001$, $d = 3.25$. Participants were told that 'half of the photos are exactly the same as the ones you've already seen', and 'the other half are photos of women you've seen before, but the woman's expression has changed'. Each participant viewed all 116 photos one at a time and responded to the question, 'Have you seen this EXACT photo previously?' Participants made a 'perceived newness' rating on a 6-point scale, with anchors of '1 = definitely yes', '2 = probably yes', '3 = maybe yes',

'4 = maybe no', '5 = probably no', and '6 = definitely no'. Photos were presented in a random order for 1.5 seconds apiece.

Recognition memory task (line drawings)
The recognition-memory task for line drawings provided an index of individual differences in men's memory for neutral, non-social stimuli. Participants viewed 100 line drawings; half were previously viewed objects, and the rest were new objects. For each drawing, participants made a 'perceived newness' rating on the same 6-point scale used in the previous task. Drawings were presented in a random order for 1.5 seconds apiece.

Rape myth endorsement
Participant responses to this 11-item scale measured beliefs that rape is justified and women are responsible for their victimization by men (Burt, 1980). Endorsement of rape myths is a well-established correlate of self-reported perpetration of sexual coercion and aggression (e.g. Bohner, Siebler, & Schmelcher, 2006; Hersh & Gray-Little, 1998; Koss & Dinero, 1988; Muehlenhard & Linton, 1987; Murnen, Wright, & Kaluzny, 2002). The total score was natural-log transformed for analyses.

Procedure

After completing an informed-consent statement, each participant was seated in a private room in front of a computer. He then completed the tasks in the order described above. Finally, he answered questions about demographic characteristics and a question about dating background: 'How many serious dating relationships have you had? In other words, how many women have you had a relationship with that lasted 1 month or longer OR in which you mutually referred to one another as partner, spouse or boyfriend/girlfriend?' The number of serious relationships was natural-log transformed for analyses.

RESULTS

Attention to sexual interest

If a participant attended only to sexual interest when making similarity judgments, his judgments of the similarity of stimuli should correspond strongly to differences between experts' ratings of sexual interest for those stimuli. A unidimensional, non-metric scaling model was fit to participants' similarity-ratings data, with the coordinates for the single dimension fixed to the average expert ratings of women's sexual interest. The variance accounted for (RSQ) by this single fixed dimension was used in subsequent analyses as an indicator of a participant's attention to or encoding of sexual interest. The RSQ value expected by chance alone was quite large, given the non-independence of the similarity ratings and the large number of observations missing by design. To estimate the RSQ value expected by chance alone, we created 10 random one-dimensional configurations, in which each of the 58 stimulus coordinates was generated randomly from a uniform distribution between 0.0 and 1.0. We then fit each of the 10 random configurations to participants' similarity-ratings data. The average RSQ for these random configurations was .895 ($SD = .005$), with a 95% confidence interval estimate ranging from .893 to .898. The average RSQ when sexual interest norms instead were fit to the similarity-ratings data ($M = .922$, $SD = .024$) fell well above this confidence interval, and participants' RSQ values ranged from below-chance values (.875) to 18.4 *SD*s above chance (.987). Thus, sexual interest was quite salient to the average participant, and marked individual differences in attention to sexual interest were present. The RSQ index of attention to sexual interest was included as a participant-specific predictor of men's memory for women's sexual interest in subsequent analyses.

Memory for drawings

The average newness rating for 'new' drawings ($M = 5.09$, $SD = .63$) was greater than the average newness rating for 'old' drawings ($M = 1.84$, $SD = .62$), $t(231) = 49.18$, $p < .001$, $d = 5.2$, documenting substantial recognition memory for drawings. The difference between the average newness ratings each participant gave for 'old' versus 'new' stimuli was used as an index of memory for neutral, non-social information ($M = 3.25$, $SD = 1.01$). This index also was included as a participant-specific predictor of men's memory for women's sexual interest.

Memory for women

Hierarchical linear modelling (HLM; Raudenbush & Bryk, 2002) with robust standard errors was used to analyse the men's memory for women's sexual interest. A three-level regression analysis was conducted, consisting of participants' repeated newness ratings of women (Level 1), which were nested within the women depicted in the photos (Level 2), which were nested within participants (Level 3). Thus, the number of Level-1 units was 26 100 (225 participants × 58 women × 2 ratings), the number of Level-2 units was 13 050 (58 women × 225 participants), and the number of Level-3 units was 225. This analytic approach allowed us to represent simultaneously but separately the hypothesized influences of woman-specific characteristics and participant-specific characteristics on men's memory for women's sexual interest.

Level-1 equation for newness ratings of photos of women:

$$\text{Newness rating} = \pi_0 + \pi_1(\text{old/new status}) + e$$

The Level-1 equation specified a linear association between the old/new status of a woman's photo (effect coded, such that '−1' = old and '+1' = new) and the participant's newness rating on the 6-point scale described earlier ('1' = definitely seen before, '6' = definitely have not seen before). The intercept for the Level-1 equation, π_0, corresponded to the average newness rating. The coefficient for old/new status, π_1, indexed memory for sexual interest. Given the effect coding of old/new photo status, twice the

value of π_1 corresponds to the increase in the newness rating for new stimuli, relative to old stimuli.

Level-2 equation for women's influences on men's memory:

$$\pi_1 = \beta_{10} + \beta_{11}(\text{sexual interest}) + \beta_{12}(\text{provocativeness of dress}) + \beta_{13}(\text{attractiveness}) + r_1$$

The Level-2 equation for π_1 specified the woman-specific predictors of variability in this index of sexual-interest memory, and the estimated parameters indexed the magnitude of the associations between sexual-interest memory and each of the three characteristics. Three standardized woman-specific predictors were examined: average expert normative ratings of each woman's sexual interest, average expert normative ratings of the provocativeness of each woman's dress and average undergraduate men's normative ratings of each woman's attractiveness. In each case, the normative ratings of each of the 58 women were of the 'old' photos that had been viewed in the Photo Preview and Similarity Ratings Tasks. The regression coefficients for these three predictors indicated the extent to which men's memory for women's sexual interest varied as a function of the three woman's characteristics highlighted in the introduction. For example, twice the value of β_{12} (given the effect coding of old/new photo status) indexed the change in men's memory for sexual interest that was associated with a 1-*SD* increase in the provocativeness of the woman's dress, controlling for the influences of initial affect and attractiveness. Thus, the statistical significance of this parameter indicated whether provocative dress was a reliable predictor of men's normative memory for women's sexual-interest cues, as hypothesized. Note that β_{10} indexed average memory for sexual interest (i.e. how much the newness rating increased for new stimuli, relative to old stimuli), assuming average values of woman-specific influences.

Level-3 equation for participant influences on men's memory:

$$\beta_{10} = \gamma_{100} + \gamma_{101}(\text{rape myth endorsement}) + \gamma_{102}(\text{memory for drawings}) + \gamma_{103}(\text{attention to sexual interest}) + \gamma_{104}(\text{serious relationships}) + u_{10}$$

The Level-3 equation for β_{10} specified the participant-specific predictors of variability in this index of sexual-interest memory, and the estimated parameters indexed the magnitude of the associations between sexual-interest memory and each of the participant characteristics. Four standardized participant-specific predictors of memory were evaluated: rape myth endorsement, memory for drawings, attention to sexual interest and number of serious relationships. The regression coefficient for rape myth endorsement (γ_{101}), for example, indicated half the change in sexual-interest memory associated with a 1-*SD* increase in rape-myth endorsement, controlling for other participant characteristics. Note that γ_{100} indexed average memory for sexual interest (i.e. how much the newness rating increased for new stimuli, relative to old stimuli), assuming average values of participant characteristics.

The parameters in this three-level model that are crucial to understanding the hypothesized correlates of men's memory are at Level 2 (β_{11}, β_{12}, and β_{13}) and at Level 3 (γ_{101}, γ_{102}, γ_{103} and γ_{104}). The statistical significance of each of these parameters indicates whether the relevant influence exerts the hypothesized influence on men's memory for women's sexual interest. The Level-1 equation is just a computational convenience for feeding differences in newness ratings for 'old' and 'new' stimuli into higher levels of the model.

Table 1 presents the results of the modelling. The top half of the table presents the parameter estimates at Level 2. The parameter estimates indicated that all three characteristics of women (at Level 2) correlated reliably with men's memory, as hypothesized, controlling for all other influences: sexual interest was remembered better when the woman was sexually interested at encoding ($\beta_{11} = .08$), provocatively dressed ($\beta_{12} = .03$), and normatively attractive ($\beta_{13} = .05$). The coefficients can be interpreted readily, given the standardization of the three predictors. For example, as women's initial sexual interest increased by 1 *SD*, the difference in the average rating between old and new stimuli increased by .16 (i.e. $.08 \times 2$, given the effect coding of old/new photo status). These three woman-specific predictors accounted for 45.66% of the woman-specific variability in memory for sexual interest, when added to an unconditional model with no Level-2 or Level-3 predictors.

Figure 2 presents the model-predicted values of sexual-interest memory (i.e. the difference between the predicted newness ratings for old and new stimuli), separately for each woman-specific predictor. To illustrate the effects, we divided the 58 women into terciles based on their normative values of sexual interest, clothing style and attractiveness. For example, the average model-predicted sexual-interest memory for the women with the lowest-tercile sexual-interest ratings at study was 1.76, indicating that the average predicted newness ratings for old and new stimuli differed by 1.76 on the 6-point newness rating scale. In contrast, the average predicted memory for the women with the highest-tercile sexual-interest ratings at encoding was 2.22. In other words, men better remembered women's level of sexual interest when the women displayed higher levels of sexual interest at study.

The bottom half of Table 1 presents the parameter estimates at Level 3. The parameter estimate for the intercept of the Level-3 equation for sexual interest memory ($\gamma_{100} = 0.99$) differed significantly from zero. Because old/new status was effect-coded, this estimate indicates that the average newness rating for old and new stimuli differed by 1.98 points (on a 6-point scale). Thus, men's average memory for women was substantial. The four characteristics of male participants (at Level 3) also showed significant associations with men's memory. Memory for sexual interest increased significantly as rape myth endorsement decreased, ($\gamma_{101} = -0.05$), as memory for drawings increased ($\gamma_{102} = 0.12$), as attention to sexual

Table 1. Multilevel modelling results for men's memory of women's sexual interest

Parameter	Estimate	Standard Error	*t*-value	*df*	*p*-value
Level 2 (influence of women's characteristics on men's memory)					
β_{11} (sexual interest effect)	0.08	0.01	7.19	13046	0.000
β_{12} (clothing style effect)	0.03	0.01	3.09	13046	0.002
β_{13} (attractiveness effect)	0.05	0.01	4.01	13046	0.000
Level 3 (influence of participant's characteristics on men's memory)					
γ_{100} (average memory)	0.99	0.02	43.00	220	0.000
γ_{101} (rape myth effect)	−0.05	0.02	−2.18	220	0.030
γ_{102} (relationship effect)	0.06	0.02	2.98	220	0.004
γ_{103} (general memory effect)	0.12	0.02	4.84	220	0.000
γ_{104} (attention effect)	0.14	0.02	5.90	220	0.000

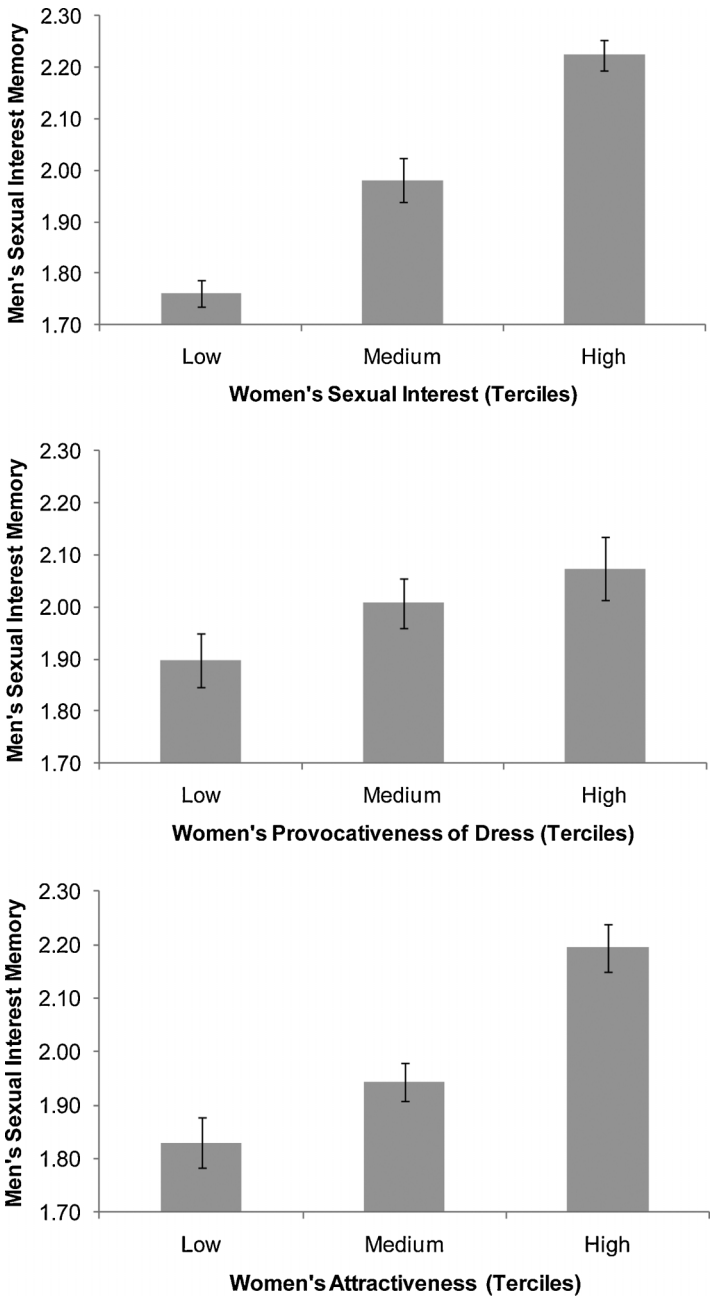

Figure 2. Model-estimated values of men's sexual-interest memory for terciles of female models for all three women-specific characteristics. See text for further information. Bars correspond to standard error of mean

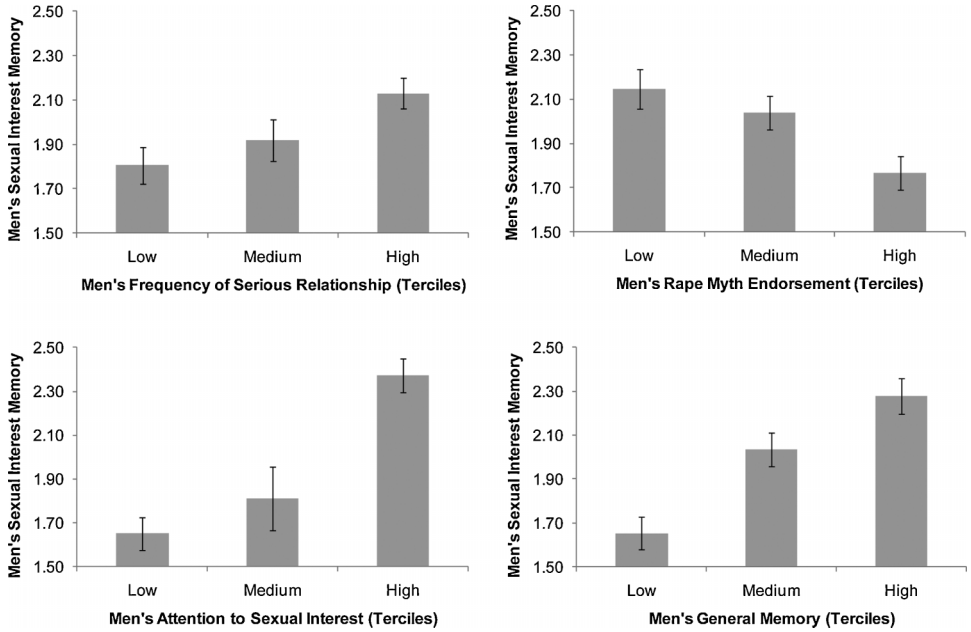

Figure 3. Model-estimated values of men's sexual-interest memory for terciles of male participants for all four participant-specific characteristics. See text for further information. Bars correspond to standard error of mean

interest increased, ($\gamma_{103} = 0.14$) and as number of serious relationships increased ($\gamma_{104} = .06$). The standardization of the predictors again facilitates interpretation. A 1-*SD* increase in rape myth endorsement is associated with a .10 (.05 × 2) *reduction* in the difference in the ratings for old and new stimuli, for example. The set of four predictors accounted for 32.88% of the participant-specific variability in memory for sexual interest, when added to an unconditional model with no predictors at Levels 2 or 3. Figure 3 presents the model-predicted values of sexual-interest memory for terciles of participants for all four participant-specific predictors. Here, too, sexual-interest memory refers to the model-predicted difference in the newness ratings for old and new stimuli.

DISCUSSION

The present work investigated young men's memory for young women's sexual-interest and rejection cues, as expressed in full-body photos. Both characteristics of the male perceivers and of the women being perceived were examined as potential predictors of memory. Regarding women's characteristics as predictors, men better retained information about women's sexual interest if the women dressed provocatively and were normatively attractive, and if the women expressed sexual interest (rather than rejection) at encoding. Moreover, these three characteristics of women accounted for almost half of the woman-specific variation in memory for sexual interest.

Previous work demonstrated that men display lower sensitivity to women's affect cues when the women's clothing style is provocative (Farris et al., 2006), leading us to propose that provocative dress and attractiveness might function as distractors that result in impoverished processing of sexual interest and rejection cues. The current findings, however, suggest that men are *more* likely to remember the sexual interest of women whom they initially find more interesting or appealing. The inconsistency may be attributable to a significant discrepancy between prior work, which directed participants' attention to women's affect (in an explicit identification paradigm), and the present study, which did not. The current results suggest that when young men are not directed to attend to women's level of sexual interest (i.e. under incidental encoding conditions), they are more likely to retain such information when the women are more appealing or interesting to them (i.e. when they dress provocatively or are normatively attractive).

More generally, the present results suggest that provocative dress, attractiveness and sexual interest at study may reflect a more general factor of appealingness and that young men better retain the affect of more appealing or interesting women. Overall, the observed pattern of woman-specific influences on men's memory can be construed as broadly adaptive, as men presumably are more likely to benefit from tracking and retaining the affect of women whom they find attractive or appealing and who initially are interested in them.

The four participant-specific characteristics also accounted for substantial variability in men's memory for women's sexual interest. As expected, men who attended more to women's sexual interest in the similarity-ratings task showed much better memory for this information when tested later. Future research should examine whether directing participants' attention to women's level of sexual interest enhances their memory for such information and potentially diminishes the predictive power of other participant characteristics. To the extent that inadequate attention to and memory for women's sexual interest increase the likelihood of acquaintance-initiated sexual aggression, attempts to modify men's encoding of women's characteristics might prove to be a useful contributor to prevention efforts in this area.

Endorsement of rape myths predicted worse memory for sexual interest, consistent with our expectations. The poorer memory for sexual interest by men who endorse more rape myths than their peers might be attributed to generally poorer

memory among such men. However, the inclusion of a general memory assessment as a control variable in our analyses substantially decreases the likelihood that the specific observed association between risk status and memory for sexual interest reflects either a global deficit in memory or more general motivational factors that presumably would be tapped by this control task. Furthermore, individual differences in encoding of sexual interest do not appear to account for the association, given the simultaneous inclusion of attention to sexual interest in the model. In conjunction with past research, this suggests that men at risk of exhibiting sexual aggression towards acquaintances display not only decreased attention and sensitivity to women's heterosocially relevant affective cues but also impoverished storage and/or retrieval of this information. The latter deficits could increase further the likelihood of sexual aggression by making it more difficult to detect and respond appropriately to a particular woman's repeated or increased negativity. More generally, at-risk men presumably would learn far more slowly than their peers about differentially effective responses to women's affective cues, if they are not storing, synthesizing and capitalizing on their social learning history.

Better memory for women's sexual interest was associated positively with more frequent serious relationships, consistent with the presumed centrality of retention of nonverbal affective cues to the initiation and maintenance of serious relationships. Here, too, neither individual differences in general memory nor attention to sexual interest accounted for this relationship, potentially implicating enhanced storage and retrieval of sexual-interest and rejection cues in the procurement of more frequent serious relationships. This finding highlights the benefits of moving beyond examination of perception of emotion to explore other component cognitive processes when characterizing emotional intelligence, as social information-processing theorists have done. Moreover, the association between component cognitive processing of sexual-interest information and more direct indices of relationship satisfaction and quality should be investigated.

Future research also should examine the extent to which the observed findings regarding the prediction of young men's memory for sexual-interest and rejection cues from characteristics of both women and participants generalize to other affective cues such as friendliness and sadness. If our interpretation of the current findings as broadly adaptive holds, then we would find that women's affect is remembered better when the women initially express positive affect (sexual interest or friendliness), when the women dress provocatively, and when the women are normatively attractive. We also would expect that men at risk of exhibiting sexual aggression would show worse memory for women's affect, whereas men reporting more frequent serious relationships would show better memory for women's affect, given that past research has demonstrated risk- and relationship-linked differences in attention to, sensitivity to and perception of affect more generally (e.g. Carton et al., 1999; Farris et al., 2006, 2010; Fitness, 2001; Treat et al., 2001).

Multilevel modelling techniques afforded the simultaneous analysis of both woman-specific and participant-specific predictors of variation in men's memory for women's sexual interest. In the present application, partitioning the variability in memory performance into that associated with the women being perceived and that associated with the participants doing the perceiving substantially enhanced the power to detect the influence of women's characteristics on men's memory. In fact, additional analyses indicated that neither sexual interest, provocativeness of dress, nor attractiveness reliably predicted men's memory in a two-level model that omitted the participant-specific level of the model. Thus, even in circumstances in which predictors of stimulus- or participant-specific variability are not hypothesized or evaluated, estimating an appropriate three-level model can enhance the precision of estimated effects (Baayen et al., 2002; Rouder & Lu, 2005).

Overall, the current study documents the relevance of memory for women's sexual-interest levels to both normal and problematic heterosocial interactions. The woman-specific findings advance our understanding of memory for others' affect by focusing on full-body affect, rather than facial affect (e.g. deGelder, 2006), by examining processing of heterosocially relevant affective cues, and by documenting characteristics of women that are associated with better memory. Our findings also indicate for the first time that young men at greater risk of exhibiting sexually coercive or aggressive behaviour display a memory deficit for young women's sexual-interest cues, and young men who report more frequent serious relationships with women display a specific memory advantage for women's sexual interest. Moreover, the inclusion of an index of participant attention to sexual interest in analyses suggests that these effects are attributable to individual differences in storage or retrieval of sexual interest. Future research should examine whether individual differences in the detection, retention and appropriate response to variability in women's sexual-interest cues prospectively predict both normative and non-normative heterosocial interactions. Future research also profitably can focus on the role of accurate memory for various kind of emotion in both positive and negative relationship outcomes, as well as examining the potential of training approaches to enhance memory.

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