

# Heterosexual Men's Ratings of Sexual Attractiveness of Pubescent Girls: Effects of Labeling the Target as Under or Over the Age of Sexual Consent

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**Abstract** The study aimed to identify implicit and explicit processes involved in reporting the sexual attractiveness of photographs of the same pubescent girls labeled as either under or within the age of sexual consent in the UK, women, and men. In two studies, 53 and 70 heterosexual men (M age 25.2 and 31.0 years) rated the sexual attractiveness of photographs in each category presented via computer [seeing target photographs of girls labeled as either under- (14–15 years) or within the age of consent (16–17 years)], using a 7-point response box. Ratings in Study 1 were in response to a question asking participants to rate how sexually attractive the person in each photograph was. In Study 2, participants rated how sexually attractive they *personally* found the target. Response times were also recorded. Several findings were replicated in both studies (although the strength of findings differed). Mean ratings of the sexual attractiveness of the underage girls were lower than those of overage girls and women. In addition, correlations revealed significantly longer responding times when “underage” girls (and men) were rated as more highly sexually attractive. No such relationship emerged with the same girls labeled within the age of consent or women. Overall, these data suggest that men find pubescent girls identified as being under the age of consent sexually attractive, but inhibit their willingness to report this; the greater the attraction, the greater the inhibition.

**Keywords** Sexual attraction · Legal age of consent · Pubescent girls · Women · Heterosexual men

## Introduction

The age of sexual consent is socioculturally determined and has been subject to change over time and across countries. At the beginning of the twentieth century, Hirschfeld (1914/2000) found the age of consent to be 12 years in 15 countries, 13 in 7, 14 in 5, 15 in 4, and 16 in 5. Since then, the age of consent has increased in many countries although some countries or states have resisted this rise. The age of sexual consent in Canada, for example, rose from 14 to 16 years only in 2008 while in 2002 60 14-year old females were married in Texas (Salopek, 2004). In the U.S., the age of consent now varies between 16 and 18 years across states (Posner & Silbaugh, 1996) while, in the UK, the place of the present study, it is 16 years. The age of sexual consent has powerful implications—most notably, the risk of imprisonment for the act of rape or other sexual crimes should a male have sexual relations with a girl under the age of consent (an “underage” girl). There are also widely prevalent negative attitudes towards “underage sex” (Wasoff & Martin, 2005).

Despite these social constraints, many men find young, sexually developing adolescent girls attractive and may respond to them as a gestalt “female” rather than two separate stimuli components involving age and gender (Blanchard et al., 2012). Lykins et al. (2010), for example, found that plethysmographic measures of arousal indicated that men who reported themselves to be attracted to adult women evidenced some degree of erotic arousal while viewing images of pubescent females they were told were aged between 11 and 13 years. This arousal was less than for adults, but greater than that associated with pre-pubescent girls, men, and neutral stimuli. This attraction should not be surprising and evolutionary theory suggests that it may be, at least in part, biologically determined (Kendrick & Keefe, 1992; Thornhill & Gangestad, 1996).

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If men find “underage” girls sexually attractive but have also internalized social and legal norms stipulating this attraction as inappropriate, then the concurrent operation of social norms and evolved drives could lead to a state of psychological conflict in situations that permit expressing this interest. The present research comprised two studies both of which used explicit and implicit measures to identify whether this was the case. In both studies, participants were asked to make judgments about the attractiveness of images of the same girls identified as being either under the UK age of sexual consent (14–15 years) or within the age of consent (16–17 years), women aged 19–25 years, and men. In each case, they were asked to make their ratings as quickly as possible and to register them on a response pad linked to a computer.

The key hypotheses assumed a degree of conflict would exist between finding an “underage” girl sexually attractive and normative influences (both internal and external) that oppose the acceptability of making such judgments. If correct, then ratings of sexual attraction may be lower for the same pictures of girls identified as either being aged 14–15 or 16–17 years. In addition, it was predicted that, among the “underage” girls, higher ratings of attraction would be associated with greater psychological conflict. This would be evident through increasing response times as ratings of attraction increased. If proximity to the age of consent was an influence on judgments, even among the older (borderline) girls, a moderated, but similar relationship may be found. However, among women aged 19–25, no association between attraction ratings and response time was expected. Although the pictures of men were meant essentially as fillers to obfuscate the nature of the investigation, because heterosexual men making judgments about the attractiveness of other men may provoke some degree of conflict, we also predicted that higher ratings of male attractiveness would be associated with longer response times.

Two studies are reported here. In both, participants were asked to rate the attractiveness of the same photographs of girls labeled as being above and below the UK age of consent, men, and women. The important difference between the two studies was the instructions given to participants. In Study 1, participants were asked “to rate the sexual attractiveness of the person in each photograph...” This instruction allowed participants, if they chose, to make judgments based on perceived normative expectations of attraction rather than personal ratings. In Study 2, they were asked to rate “how sexually attractive you find each individual...” constraining them to personal judgments about attractiveness. It was expected that this would increase the degree of conflict experienced while making this judgment.

## Method

Apart from the difference in instruction, both Studies 1 and 2 followed the same method. Accordingly, the two studies are described together.

## Participants

In both studies, participants were UK born, heterosexual, adult men recruited in a university sports center (Study 1) or general locations within a university campus (Study 2). In Study 1, participants were 53, UK born, heterosexual, adult men (M age = 25.2 years, range 18–42 years). Study 2 participants were 70, UK born, heterosexual, adult men (M age = 31.0 years, range 19–78 years). Data from one participant in Study 2 were dropped because they were not properly attending the task, resulting in their latency data being excessively long and distorting group means.

## Procedure

All participants completed a sexual orientation questionnaire to confirm their heterosexual orientation and computer task. The computer task comprised 61 trials presented on a screen involving a short pseudo-biography (age, home town, star sign, and favorite color), presented for 5 s, followed immediately by a photograph of an individual to whom the biography related.

To obtain an explicit measure of attraction, participants in Study 1 were asked to “rate the sexual attractiveness of the person in each photograph as quickly as you can” using a 7-key response pad (from extremely sexually unattractive to extremely sexually attractive). In Study 2, the instructions explicitly asked for the participants’ own judgments of attraction, with the instructions being to rate “how sexually attractive you find each individual as quickly as you can.” The time taken to respond was used as an implicit measure of decision ease, where shorter latencies (quicker responding) indexed an easier decision and longer latencies indexed a more effortful decision (due to interference/conflict). Trials were presented on a Dell Latitude D600 Laptop with a 14 in. display via E-Prime software (Version 2.0). Response time measurements were obtained through a Cedrus Response Pad (Model RB-730), with data recorded using E-Data Aid software in conjunction with E-Prime.

Age labels applied to the photograph were grouped into four image categories: target underage (14–15 years), target within age (16–17 years), distracter women (19–25 years), and distracter men (16–27 years). Photographs for target underage and within age females were counterbalanced: for half the participants in Study 2 (and 27 of 53 in study 1), half of the target photographs were identified as underage, the other half as within age, with labeling reversed for the remaining participants. In this way, participants only saw the target girl photographs once—identified as either 14–15 years old or 16–17 years old. However, when taking all participants together, the same photographs appeared in underage and overage sets (other pseudo-biographical details remained constant in both conditions). In Study 2, there were 12 target underage pictures,

12 target overage pictures, 7 distracter female pictures, and 30 distracter male pictures. Picture sets in Study 1 were essentially the same as this, but with some minor variation. All photographs were obtained from publicly available open sources. All individuals were presented wearing swim-wear or underwear. Adobe Photoshop cs5 was used to edit the photographs, so all depictions were of a similar size and presented mid-screen on a white background. No participant reported being aware of the purpose of the study nor did they question the ages of the young women as presented during the study. All aspects of the research were approved by the relevant Ethics Committee.

### Plan of Analysis

For each study, two key analyses were conducted. In the first, comparisons of mean attractiveness ratings and reaction times across the four conditions (target underage, within age, distracter men, distracter women) were made in a series of one-way repeated measures ANOVAs. The second series of analyses examined the correlations between reaction times and attractiveness ratings in each condition.

## Results

### Attractiveness Ratings

Means and SDs for each condition in both studies are reported in Table 1. In Study 1, one-way repeated measures ANOVA revealed significant differences between attractiveness ratings across the image categories,  $F(3, 50) = 53.45, p < .001$ , partial  $\eta^2 = .76$ . Pairwise comparisons (Bonferroni corrected) showed that target underage girls were rated as significantly less attractive than the same girls when presented as within age ( $p < .001$ ) and distracter women ( $p < .001$ ), but more attractive than distracter men ( $p < .01$ ). In Study 2, ANOVA analysis also detected significant differences between attractiveness ratings,  $F(3, 66) = 102.99, p < .001$ , partial  $\eta^2 = .59$ , and the same pattern of pairwise comparisons. Target underage girls were rated as significantly less attractive than the same girls when presented as within

age ( $p < .001$ ) and distracter women ( $p < .001$ ), but more attractive than distracter men ( $p < .001$ ).

### Reaction Times

Preliminary analyses indicated that the reaction time data in both studies were positively skewed. To normalize the data, logarithmic transformations were applied using the base 10 logarithm and the analyses reported were based on these transformed data. To aid interpretation, the means and SDs of the actual response times are shown in Table 1. In Study 1, the means of the normalized data differed significantly across image categories,  $F(3, 50) = 5.39, p < .05$ , partial  $\eta^2 = 0.24$ , with significant differences found between response times to underage girl and male photographs ( $p < .01$ ): responses to underage girls were significantly slower. No significant differences in mean response times between any of the female photographs were found. In Study 2, ANOVA again revealed significant differences across image categories,  $F(3, 66) = 20.71, p < .001$ , partial  $\eta^2 = .23$ . Pairwise comparisons, with Bonferroni correction, found significant differences between underage girl and within age girls and male photographs ( $p < .01$ ). Again, response times for within age girls were significantly faster than for underage girls or male distractors.

### Associations Between Attraction and Reaction Times

Analyses also examined the relationship between explicit attractiveness ratings and response times within each image category (see Table 1). In the first study, these revealed significant negative correlations between response times and attraction ratings of the distracter women: that is, the more attractive the photograph, the more quickly participants gave each rating. By contrast, a significant positive correlation was found between ratings of underage girls' and men's attractiveness and response times: the more attractive the rating, the longer the response time. The correlation between ratings and response time for the within age girls was low and non-significant. A similar pattern of results was found in Study 2,

**Table 1** Mean (and SDs) attraction scores and correlations between response times and attractiveness ratings in Studies 1 and 2

Condition	Correlation: attraction and RT		Mean (SD) attraction ratings <sup>a</sup>		Mean (SD) reaction times	
	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
Distracter Women	-.35**	.01	5.48 (0.85)	5.40 (0.77)	2,747.51 (1,158.37)	3,604.06 (1,836.24)
Men	.34*	.59***	3.52 (1.40)	2.72 (1.36)	2,422.17 (1,035.01)	2,758.30 (1,527.68)
“Within age” girls	-.04	.10	4.56 (1.01)	4.42 (0.99)	2,712.51 (1,198.32)	3,493.04 (1,543.38)
“Underage” girls	.30*	.24*	4.08 (1.19)	3.96 (1.16)	2,747.51 (1,158.37)	3,796.11 (1,856.40)

<sup>a</sup> The potential attraction scores ranged from 1 to 7 (extremely sexually unattractive to extremely sexually attractive)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

although with some attenuation. The positive association between reaction time and attraction ratings for underage girls remained significant as did the positive correlation between reaction time and ratings of attraction in men. The lack of association between response time and attraction ratings for within age girls also remained. However, the correlation between ratings of attraction and reaction times was non-significant for the distracter women.

Differences between these response time-attractiveness correlation coefficients were explored. In Study 1, significant differences were found between correlations for the underage and overage girls,  $t(52) = 13.64 < .001$ , and between the underage and distracter women correlations,  $t(52) = 3.29, p < .01$ . In Study 2, although a similar pattern of results was found, the difference in correlations for underage and within age girls was not significant. The difference between the correlations for distracter women and underage girls, however, remained significant,  $t(69) = 5.11, p < .01$ .

## Discussion

The two studies reported here found consistent evidence of differences in attractiveness ratings and response times between the target groups. Both studies found significantly lower sexual attractiveness ratings of girls labeled below the age of consensual sex than the same girls labeled as within the age of consensual sex. This finding held whether the wording of the attraction rating allowed participants to make a personal or a more normative judgment about their attractiveness (Study 1), or constrained them to a personal judgment (Study 2). A second consistent finding was that both sets of younger females were rated as less sexually attractive than pictures of women aged between 19 and 25 years. The photographs used in the study were opportunity sampled from openly accessible websites. Nevertheless, despite excluding “glamour models,” it is possible that the mature women set comprised pictures of genuinely more attractive people than the target sets. However, an alternative explanation is that the females pictured in the younger sets (target underage and within age) were all close to the age of consent, looked close to the age of consent, and, as a consequence, were seen as a “risky” group to rate as highly attractive. Participants therefore may have downgraded their explicit assessments of sexual attractiveness as a consequence of their proximity to the age of sexual consent. Future research needs to confirm that participants believed the ages supplied and potentially explore the reasons for any differences in judgment made through discussion with participants.

In the reaction time data, three patterns of correlations appeared albeit varying slightly across studies. In both studies, higher attractiveness ratings of underage girl and male photographs were associated with longer response times. In

addition, the correlation between response times and attraction ratings for men became significantly stronger when participants were asked to report their judgment of attractiveness based explicitly on personal preference rather than having the option of drawing on shared norms (Study 2). Similarly, in both studies, correlations between ratings of attraction and response time for underage girls were significant, indicating increased interference in making judgments as levels of reported attraction rose. The presence of similar patterns of interference when expressing the sexual attraction of both young girls and men suggests conflict in both decisions. By rating members of either group as sexually attractive, participants were in conflict with a normative and/or personal belief that such individuals should not legitimately be found sexually attractive. Where this norm does not exist in the context of photographs of clearly sexually mature women this conflict was not evident. Indeed, although in Study 2 no association was found between ratings of attraction and response times (as predicted), in Study 1 the higher the attractiveness rating, the quicker the response time for this category. This phenomenon may not reflect an interference process, however. It may simply be that unequivocally attractive women are easier to rate than ambiguously attractive women. A final finding was that for girls of an indeterminate but possibly “risky” age, a non-committal approach to rating sexual attractiveness was found, with high ratings of sexual attractiveness made no more quickly than those of low sexual attractiveness.

These findings contrast markedly to studies using dwell times to index attraction to sexual stimuli, which find latencies to be longer for more attractive stimuli (e.g., Ebsworth & Lalumiere, 2012; Rullo, Strassberg, & Israel, 2010). This contrast may be attributable to two important ways in which our study differs from these studies. First, participants in these studies were not told to make their judgments as quickly as possible. Accordingly, they would feel no time pressure to come to a decision and their decision-making may involve different cognitive processes to those considered in the present study. Second, these other studies compared response times across categories of images (mature, pre-pubescent, etc.), not within categories, as reported here. In other words, these other studies were pursuing a different research question: using dwell time to index relative attraction across image categories. Here, we examined associations between latency and attraction within image categories.

These data suggest that both explicit ratings of attractiveness and the process by which such ratings are made are influenced by sociocultural or legal normative influences. Apparently, younger age girls, labeled as below the age of sexual consent, were rated less attractive than apparently older girls and much less attractive than women. In addition, when they were rated as highly attractive, these decisions took longer to make than decisions rating them as relatively unattractive. Together, these data suggest a conflict between

the actual perceptions of attractiveness and those that could be legitimately expressed. Thus, there appears to be a conflict between evolutionary processes that drive attraction towards sexually developed girls and societal pressures against explicit behaviors expressing this attraction. Men may not engage in sexual relationships with girls, not because they do not find them attractive, but (at least in part) because they are conforming to strong internalized societal and legal norms.

The core findings of the present study (longer reaction times and lower attractiveness ratings attributed to sexually developed girls) were found in both studies reported here. They therefore must be considered robust and meaningful. The data support previous research showing men are attracted to relatively young sexually developed women albeit seemingly less so than their attraction to older women. They also show that the process of making attractiveness ratings was influenced by unconscious processes, which we hypothesize to involve internalized norms relating to the acceptability of finding such women attractive. Future research therefore needs to explore the mechanisms underpinning the findings. Such research could usefully explore the relationship between response times or attraction ratings and directly or indirectly measured attitudes towards underage sex or sexual relations with young people, or more general measures such as conventionality, conformity, or liberalism/conservatism which may influence such decision making processes. Future

research should also explore mediating processes between attraction and decisions whether or not to act on such perceptions.

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