

"I Kissed a Girl and I Liked It": An Eye-Tracking Study of Women's Sexual Fluidity

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Background

Sexuality is a complex phenomenon that has gained much interest over the years and has been extensively investigated. Though sexuality is often understood in terms of 'heterosexuality', 'homosexuality' and 'bisexuality', since the 1940s sexuality has been conceptualised as a continuous construct (Kinsey, Pomeroy & Martin, 1948). Kinsey et al. (1948) recognised that, though there are individuals at each end of the spectrum of sexuality, many individuals fell in between the two dichotomous poles.

Females have been noted to have a more 'fluid' sexuality than men (Diamond, 2008), in that they have the potential to be sexually responsive to both sexes, just not necessarily at the same time, akin to bisexuality (Kuhle, 2013).

A range of measures have found evidence for the non-specificity of women's sexual arousal, in that they have a heightened sexual response to both preferred and non-preferred stimuli (Chivers, 2010). These include self-report (Chivers et al., 2004), thermography (Huberman, 2014), vaginal photoplethysmography (VPP; Huberman, 2014), IAT (Snowden & Gray, 2013) and eye-tracking (Lykins et al., 2008).

However, using physiological methods, such as VPP, is most popular, whereas less research has been conducted utilising eye-tracking.

Aims

Thus, the present study aims to use eye-tracking in order to investigate whether women's sexuality is non-category-specific, in that they will respond more equally to both genders.

Method

Participants

- 37 participants (17 male, 20 female) aged between 18 and 25 ($M = 20.71$ years, $SD = 1.31$ years)
- Primarily University students, with normal, or corrected-to-normal, vision

Design

- 2 (participant gender – male, female) x 2 (picture gender – male, female) x 2 (picture eroticism – erotic, non-erotic) mixed design was employed
- presentation of stimuli was quasi-randomised in a crossed design, and the order of the questionnaire presentation was counterbalanced

Materials & Apparatus

Questionnaire

- included questions taken from the Kinsey Heterosexual-Homosexual Rating Scale (KS); The Kinsey Institute, 2013) and Lippa's (2006) *Sexual Attitudes and Feelings Scale* (SAF).
- implemented online using Qualtrics, and ran on a standard laptop.

Eye-Tracking Experiment

- Tobii T60XL eye-tracker and compatible software (Tobii Studio 3.2.2)
- 72 picture combinations for the 'main phase' and 5 combinations for the 'practice' phase, using images selected from the pilot study and free stock photo websites, respectively.
- All pictures had a resolution of 600 x 300 pixels and were presented in full colour.

Procedure

- Fully-informed consent was gained
- Completion of the questionnaire either prior to, or after the eye-tracking experiment
- Participants were given an instruction and sample images sheet, and if comfortable, a consent form.
- Practice phase followed by the main experimental phase, where two pictures were presented alongside each other and they picked their preferred image with a button press
- Participants were fully debriefed.

Variables

- First Fixation Duration (FFD) – length of first fixation on an image in ms
- Total Fixation Duration (TFD) – total length of all fixations on an image in ms
- Time To First Fixation (TTFF) – time, in ms, from presentation of the image to first fixation on the image
- Image Selected (IS) – which image the participant selected as most appealing

Results

Questionnaire

Of the 37 participants, 56.8% rated themselves as 'exclusively heterosexual', 37.8% rated themselves as 'predominantly heterosexual', and <6% rated themselves as 'bisexual' on the KS.

SAF Scores for each Sexuality Sub-Group Defined by the KS

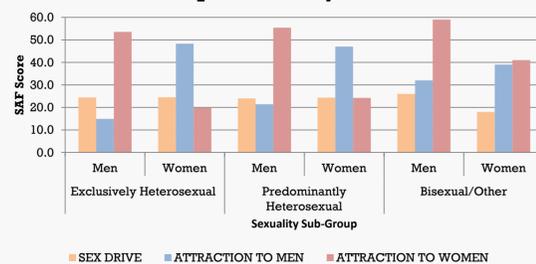


Figure 1: A bar chart showing the SAF factors for each gender/sexuality sub-group as defined by the KS

The above graph shows the differences in SAF scores for each of these sub-groups that have been defined by the KS. There were significant gender/sexuality differences only for 'attraction to men' ($F(2, 31) = 7.181, p < .005$). Both 'sex drive' and 'attraction to women' were non-significant, suggesting women responded similarly to men on the latter measure.

Eye-Tracking Experiment

When two erotic images are presented alongside each other, females will attend to both images relatively equally, indicated by non-significant differences.

Male and female data sets were tested separately, with a paired samples t-test conducted on each.

Females had one significant result for total fixation duration for paired erotic images ($t(19) = -3.613, p < .005$), though with reference to Figure 4, it can be seen that the results are not too dissimilar. Both first fixation duration and time to first fixation were non-significant, suggesting that women responded similarly to male and female erotic images.

For male data, two of the results were significant – time to first fixation for paired erotic and non-erotic images ($t(16) = -2.300, p < .05$) and total fixation duration ($t(16) = 6.477, p < .000$). First fixation duration was NS.

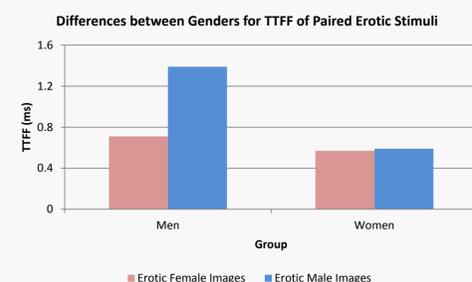


Figure 2: Gender differences for TTFF

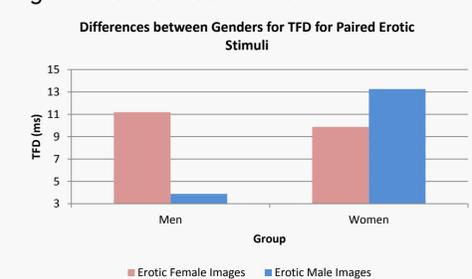


Figure 4: Gender differences for TFD

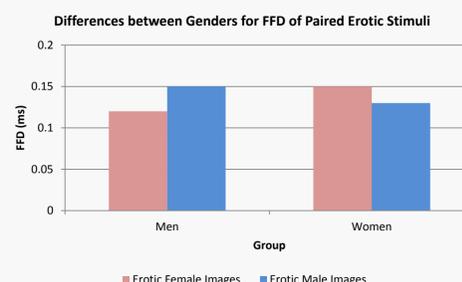


Figure 3: Gender differences for FFD

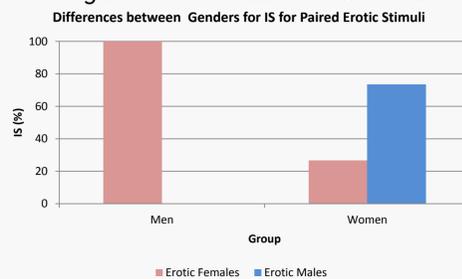


Figure 5: Gender differences for IS

Other Findings: Women's self-reported sexual arousal (questionnaire data) correlated less highly with their objective responses (eye-tracking data).

The results show that, though women score highest for their attraction to their preferred gender (men) on self-report measures (see Figure 1), on the eye-tracking measures, they have similar scores for both male and female images e.g. TTFF (see Figure 2).

Discussion

Hypothesis One

Support?

- Support was found for this hypothesis – results for TTFF and FFD were non-significant for women, suggesting that they respond similarly to both male and female erotic stimuli.
- Supported by a prediction Lykins et al. (2006) made that women's visual attention may be more dramatically altered by erotic content.

Explanation?

- Women may be 'checking out the competition' – Joseph (1985) suggested that women attach significant importance to physical attractiveness of same-sex peers, and 'compete' amongst themselves due to threat to own self-image.
 - Swimwear365 polled 2000 women and found half enjoyed comparing themselves to other women (De Lacey, 2012).
- Women identify with the female stimulus as an object that men respond to, thus respond to it themselves (Chivers et al., 2007).
 - Mosher & Abramson (1977) found positive projective identification from females after watching female masturbation videos.

Other Findings

Support?

- Though women reported on the questionnaire that they were, generally, more attracted to men, their objective data (in particular TTFF) showed that they had very similar reactions to both male and female erotic stimuli.
- Men often respond as a function of their gender, whereas women's self-reported and objective arousal appears less clear (Chivers et al., 2007).

Explanation?

- Socially desirable responding is likely to occur in self-report.
- A sexual double standard, where women are judged more harshly than men for engaging in similar sexual behaviours (Conley et al., 2012).
 - Such negativity causes women to inhibit subjective questionnaire data, but objective data remains unaffected (Rupp & Wallen, 2008).
 - Gender roles upheld by society dictates women do not have a high level of sexual response, which may make women feel self-conscious about their response to explicit stimuli (Rupp & Wallen, 2008).

Strengths & Limitations

- Used self-report and objective measures, both desirable for sexuality studies (Jones, 2013)
- Images were age-appropriate and up-to-date
- Utilised multiple measures of sexuality
- Images treated as a whole pictures so cannot establish specifically where participants were looking, making it difficult to make direct comparisons between other studies
- Stimuli were not fully-standardised with variation between pictures

Conclusions

Heterosexual women do appear to exhibit non-category-specific responding, however the reasons for this are unclear. It could be due to 'checking out the competition' or identifying with the stimulus. Further studies should aim to clarify this, perhaps by assessing why participants feel they focused their attention where they did.

Indicative Reading

Chivers, M., (2010). A brief update on the specificity of sexual arousal. *Sexual and Relationship Therapy*, 25(4), 407-414, DOI: 10.1080/14681994.2010.495979

Kinsey, A., Pomeroy, W., & Martin, C., (1948). Chapter 21: Homosexual Outlet. *Sexual Behavior in the Human Male*, (610-659). Philadelphia & London: W. B. Saunders Outlet.

Rupp, H., & Wallen, K., (2008). Sex differences in response to visual sexual stimuli: A review. *Archives of Sexual Behaviour*, 37(2).