Visual patterns of sexual desire. An original and exploratory study in eye-tracking

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Summary Sexual desire can be triggered by external (visual, tactile, auditory, olfactory) or internal (memories, fantasies) stimuli. However, few studies have investigated these different components of sexual desire. In our investigation, we focused on visual stimuli with the aim of establishing whether or not there exists a specific pattern of visual exploration linked to sexual desire among male and female subjects. In another words, we wanted to investigated what parts of the body visually explored are the more relevant to feel sexual desire. To assess this question, we conducted an eye-tracking study in which participants made a judgment of sexual desire, during the visualization of explicit visual stimuli. The main results for male viewers revealed that they explored the body longer than the face (P = .05). Within the body area, the chest region was scanned more extensively than the abdomen (P = .014) and the genital area (P = .003). There were no difference between the abdomen and the genital area. For female viewers, the pattern of exploration showed they explored the body longer than the face (P = .05). Inside the body area, the abdomen was scanned more extensively than the chest/pectoral region (P < .001), which in turn was scanned more extensively than the genital area (P < .001). Gender differences revealed that males fixated the genital area more frequently than females (P = .03), whereas females tended to fixate the abdomen longer and more frequently than males (P < .001), when instructed to evaluate their sexual desire.

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Introduction

Sexual desire is characterized by an increase in the frequency and the intensity of sexual thoughts/fantasies toward a target (either spontaneously or in response to the target) (Basson, 2005, 2006, 2008; Giles, 1958; Kaplan, 1995; Ortigue and Bianchi-Demicheli, 2007, 2008a, b; Cacioppo et al., 2012, 2013), an increased in wanting or wishing to
attain a potentially short-term pleasurable goal (Ortigue and Bianchi-Demicheli, 2007, 2008a, b; Bianchi-Demicheli et al., 2016; Bolmont and Bianchi-Demicheli, 2016). It emerges along a spectrum, ranging from aversive and hypoactive sexual desire to a hyperactive sexual desire (Kaplan, 1995).

A broad variety of situations can trigger sexual desire, like speaking with an attractive person, watching sensual pictures, thinking about fantasies, smelling some odors that remain a positive sexual activity (Basson, 2005, 2006; Kaplan, 1995; Ortigue and Bianchi-Demicheli, 2007, 2008; Regan and Berscheid, 1999; Tremblay and Roussy, 2000). All these examples evoked something familiar to all humans. Indeed, except people suffering from psychoactive sexual desire disorder (HSDD), which is defined, according to DSM IV, by the criterion “persistent or recurrently deficient (or absent) of sexual fantasies and desire for sexual activity” that causes “marked distress or interpersonal difficulty”, every human in this earth knows what it is feeling of sexual desire. However, even sexual desire is a feeling that everybody experiment, it is important to understand how and where it born in ours. More specially, a very important question to investigate is to know what parts of the person were important to feel this sexual desire? Question we will try to answer in this study.

In our investigation, we focused on visual stimuli with the aim of establishing whether or not there exists a specific pattern of visual exploration linked to sexual desire among male and female subjects. In another words, we wanted to investigated what parts of the body visually explored are the more relevant to feel sexual desire.

To assess this question, we conducted an eye-tracking study in which participants made a judgment of sexual desire.

Material and methods

Participants

A total of 44 healthy single heterosexual volunteers (mean age 25.41 ± 3.60) participated in the present study. This sample included 22 women (mean age 25 ± 3.22) and 22 men (mean age 25.82 ± 3.97). All participants were recruited via flyers among the student subject pool, and provided written informed consent to participate in the experiment, which was approved by the ethical committee of the University of Geneva, Switzerland. All participants were French speakers with normal or corrected-to-normal vision. None of them had prior or current neurological or symptoms of psychiatric disorders, any history of psychiatric disorders, traumatic brain injury with loss of consciousness, epilepsy or degenerative neurological illness, as ascertained by an anamnesis.

Questionnaires

Prior to the eye-tracking task proper, participants were asked to complete a questionnaire. To assess their level of sexual desire, we administered the sexual desire inventory (SDI; Spector and Carey, 1990). This questionnaire provided information about their level of intensity of desire for sexual activities with a partner (SDI dyadique) and sexual activities alone (SDI solitaire).

Stimuli and apparatus

The stimuli consisted of 120 non-erotic photographs of heterosexual individuals. The photographs depicted attractive female figures in swimsuit (n = 60) and attractive male in swimsuit too (n = 60). Photographs are in the same age range as participants (20–30 years old). No nude or erotic pictures were presented. All pictures had the same size (180 × 640 pixels), with matched facial orientation, and matched gaze orientation (i.e., here gaze directed towards the camera).

The experiment was run using E-Prime (Psychology Software Tools Inc., Sharpsburg, PA, USA). Eye-tracking movements were recorded using Tobii Technology.

Experimental paradigm

Evaluation of perceived sexual desire

Procedure. We invited participants to seat in a comfortable chair, in front of a computer. We asked them to be placed at 1 meter from the screen. Then, we explained to the participants that they would see a series of photographs, and their role would be to indicate if they feel sexual desire or not for each stimulus presented. Instruction. “Imagine you are on a dating website for adults. All the persons presented correspond to profiles that may attract your attention. Your task is to indicate if you feel a sexual desire or not for each person presented”.

To make sure that the concept of sexual desire was understood in a similar manner among all the participants, at the beginning of the experiment, we provided each participant with the following definition of the sexual desire: the presence of feelings of sexual interest, and of sexual thoughts or fantasies related to the image depicted in the photograph.

Apparatus and measures

The experiment was run using the Tobii T60 eye tracker (Tobii Technology, Inc., Danderyd, Sweden) and Tobii Studio Version 2.3.2 (Psychology Software Tools, Inc., http://www.pstnet.com/hardware.cfm?ID=107). Two dependent measures were used in the eye-tracking sessions:

- the mean number of fixations;
- the total duration of all fixations (in seconds).

Percentage or “yes” responses were collected during the eye-tracking task. Responses were made by pressing one of two response keys (“G” for “yes”, and “H” for “no”) on a keyboard with fingers of the right hand (response “yes” with the index and response “no” with the middle finger).

Definition of areas of interest (AOI)

Contrast between face and body

In order to see if there were differences between face and body, we decided to create 2 areas of interest: the face area and the body area. The face area included the whole face and the neck. The body face area included the rest of the body.
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