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What Makes Women Experience Desire?

What makes women experience sexual desire? According to Kaplan, normal sexual response starts with desire, progresses through excitement or arousal, and ends with orgasm (Kaplan, 1974). This model implies that sexual desire is something you either have or don't have, and, if you don't have it, there may be no sex in your future. This drive model of sexual desire, a biomedical model, assumes that lack of desire represents a deviation from a physiological norm. In contrast, the biopsychosocial model promoted by the New View emphasizes that a woman's sexuality is largely produced by her social context and rejects the idea of desire norms rooted in physiology. The incentive motivation model of sexual desire that we will present here is based on new findings suggesting that the experience of desire may follow rather than precede sexual excitement, and suggests that desire emerges following sexual arousal initiated by a sexually meaningful stimulus.

Key Words: *arousal, genital responsiveness, incentive motivation, psychophysiology, sexual desire, sexual motivation*

INTRODUCTION

This article focuses on the argument that, in women, sexual arousal and desire are not well correlated with genital arousal and lubrication. We will support this perspective with a wide variety of psychophysiological research studies conducted in our lab and others over many years. This argument has important consequences for sexuality theory and also for the treatment of women with sexual complaints. It supports the basic platform of the New View manifesto (New View Campaign, 2001). However, we will largely restrict ourselves here to presenting the relevant basic science research.

GENITAL RESPONSE

In contrast to popular opinion claiming that there is a huge gulf between men and women on this subject, most women *do* respond to *visual* sexual stimuli with genital sexual arousal. Psychophysiological studies that investigate genital response in response to different categories of erotic stimuli have repeatedly shown that erotic films produce more genital response than reading erotic literature (van Dam et al., 1976), hearing erotic audiotapes (e.g. Morokoff and Heiman, 1980) or focusing on erotic fantasies (e.g. Dekker and Everaerd, 1988; Laan et al., 2001; Morokoff and Heiman, 1980; Stock and Geer, 1982). In all of these studies, erotic fantasy generates the lowest levels of genital arousal.

A surprising finding from studies we conducted in the 1990s (see Laan and Everaerd, 1995, for a review) was the *ease* with which healthy women become genitally aroused in response to erotic films. While watching a film depicting explicit sexual activity, most women's vaginal blood flow increases as measured with vaginal photoplethysmography (a technique of measuring blood flow with a light-sensitive device a woman puts inside her vagina) (Laan et al., 1995). This increase occurs within seconds after the onset of a film, which suggests a relatively automatic response not requiring conscious cognitive processes. Even when the erotic film is disliked, or induces little or no *feeling* of sexual arousal, genital responses still occur. Strength of genital arousal was found consistently to vary with the explicitness of the film, defined as the extent to which sexual organs and sexual behaviors are shown (Laan et al., 1995). This automatic response occurs in young women without sexual problems, in women with deficient levels of the hormone testosterone (Tuiten et al., 1996), and in post-menopausal women (Laan et al., 2001). Such responses are also found during non-consensual sexual activity (Levin and van Berlo, 2004).

GENITAL RESPONSE AND SUBJECTIVE SEXUAL FEELINGS

In the psychophysiological studies on women cited above, we consistently found that these readily elicited automatic genital responses are *not* strongly correlated with subjective sexual feelings. In men, by contrast, correlations between genital response and sexual feelings are usually quite strong. Studies that compare female and male sexual arousal patterns consistently report higher correlations in men than in women (Dekker and Everaerd, 1988; Heiman, 1977; Steinman et al., 1981; Wincze et al., 1980).

Is awareness of their own genital response (that is, feedback to the brain from aroused genitals) essential for men to have sexual feelings? A recent study examined this question in women, men, and postoperative male-to-female transsexuals (Chivers et al., 2004). The higher correlations in male-to-female transsexuals speak against the 'peripheral feedback' hypothesis that men's genitals generate more feedback to the brain than women's genitals, because male-to-female

transsexuals do not have external genitalia any more. However, perhaps 'male' representations relevant to genital response could be somehow 'engraved' in the brain in the preoperative life of the transsexuals.

Although most psychophysiological studies to date have used vaginal photoplethysmography as a genital arousal measure, discrepancies between sexual feelings and genital arousal in women are not limited to studies using this measure. Heiman and colleagues compared the vaginal photoplethysmograph with pelvic magnetic resonance imaging (MRI, an imaging technique that generates detailed images of body or brain and that is supposed to be extremely precise) while subjects looked at erotic films (Heiman and Maravilla, 2007). They found that the correlations between genital and subjective responses were even lower for pelvic MRI than for the vaginal photoplethysmograph!

Anecdotal evidence suggests that discrepancies between women's genital responses and sexual feelings are also not limited to the laboratory. According to reports of research subjects, therapists and patients, some women notice increased vaginal lubrication without any feelings of sexual arousal or any inclination to engage in sexual activity. Also some women have noticed increased vaginal lubrication during rape even though they find the situation highly aversive. There have even been reports of women having had an orgasm in such situations (Levin and van Berlo, 2004).

We hypothesized that genital responses of both men and women occur fairly automatically, as long as the brain is processing explicit sexual stimuli. But whereas men's *sexual feelings* seem primarily informed by feedback from their genitals, in women sexual feelings may be more determined by *meanings* activated by stimulus and stimulus context than by feedback from genital response (Laan and Janssen, 2007). We know that sexual stimuli generally evoke positive sexual feelings in men, but they evoke both positive and negative feelings in women (Dekker, 1988; Everaerd, 1993). To look at this issue more closely, we chose to experimentally manipulate sexual meaning in the laboratory.

CONTEXT IN THE LABORATORY

Within the restrictions of the laboratory situation, researchers can vary the *meaning* (context) of sexual stimuli by showing visual erotic stimuli known to elicit either positive or negative emotional reactions, varying elements depicting safety, or presenting sexual stimuli depicting committed versus uncommitted relationship contexts. Our hypothesis is that stimulus and contextual factors influence sexual feelings in women, but not in men, because men's sexual feelings are mainly determined by the intensity of their genital response. We expect that genital arousal in both women and men, however, will be more affected by stimulus explicitness than by social and situational manipulations.

In a first experiment to test this hypothesis, we individually showed 30 men and 30 women a 'woman-friendly' and a 'man-friendly' erotic film. In 'man-

friendly' erotica, the focal point is on genitals, there are no romantic aspects, no signs of commitment between actors, and a focus on the male actor's pleasure. 'Woman-friendly' erotica focuses on the female actor's pleasure, she initiates and controls the sexual interaction, the focus is on genitals but also on the relationship between actors. Typical comments of women viewers are that the female actors in these films seem more real, they don't just do all the work, and women identify with those actors more than with the female actors in 'man-friendly' erotica.

Both film types were matched for amount of sexual explicitness and sexual activity in order to obtain equivalent genital responses. The 'woman-friendly' film was slightly less explicit in the first five minutes of the film, when time was devoted to depicting the emotional relationship between the actors. However, as predicted, the films yielded similar patterns of genital response in both sexes. What about sexual feelings? Based on genital response alone there is no reason to expect a difference between films in reported sexual feelings. Indeed, sexual feelings of men did not differ between films. But in women, subjective sexual arousal to the 'woman-friendly' film was higher than to the 'man-friendly' film, despite the absence of differences in genital arousal. These findings support our idea that men's sexual feelings are primarily determined by peripheral feedback from the genitals, but that women's sexual feelings are more informed by the meaning the sexual stimulus generates.

GENITAL RESPONSIVENESS IN WOMEN WITH SEXUAL AROUSAL PROBLEMS

What can we say about the importance of genital response in women who have sexual problems? According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, the diagnostic classification system of the American Psychiatric Association (1994), Female Sexual Arousal Disorder (FSAD) is defined as inhibition of the 'vasocongestion-lubrication response' to sexual stimulation. All the emphasis is placed on genital unresponsiveness as the main sign of sexual arousal disorder. Most pharmacological treatments currently being developed for women with sexual arousal disorder aim at remedying this 'vasculogenic' deficit (defect in genital blood flow) (Park et al., 1997).

We recently investigated whether pre- and post-menopausal women with sexual arousal disorder are indeed less genitally responsive to visual sexual stimuli than comparable women without sexual problems (Laan et al., 2008). Twenty-nine medically healthy women (15 pre-menopausal and 14 post-menopausal), with sexual arousal disorder diagnosed using *DSM-IV* criteria, and 30 age-matched women without sexual problems (16 pre-menopausal and 14 post-menopausal) were shown film clips depicting cunnilingus and intercourse. Genital arousal was assessed with vaginal photoplethysmography. We found no significant differences between the two groups either in size or speed of genital

response. As had been shown in earlier research, women with sexual arousal disorder diagnosed according to *DSM-IV* criteria were not less genitally responsive to visual sexual stimuli than women without such problems. The sexual problems these women report seem unrelated to their potential to become genitally aroused. All healthy women seem to have genital responses when they are exposed to explicit erotic stimuli.

SEXUAL RESPONSE AND CONTEXT

Do women need desire to have sex? There are many motives besides sexual arousal that could prompt women to engage in sexual behavior, even when they do not find it sexually exciting (Geer and Broussard, 1990; Impett et al., 2005). The excellent large, prospective population-based study in pre-menopausal, perimenopausal and post-menopausal Australian women by Lorraine Dennerstein and colleagues shows that previous sexual functioning is the best predictor of sexual function after menopause (Dennerstein et al., 2005). The second best predictor is change in partner status, where losing a partner causes a decrease in sexual functioning, and gaining a new one increases sexual function. The third best predictor is overall feelings for the partner. Negative feelings diminish sexual function and positive feelings augment it. Biology was farther down on the list, with the fourth rated predictor being hormones.

A study in the UK found that the majority of women with sexual problems are married, and that the majority of men with sexual problems are not married (Mercer et al., 2005). These findings are corroborated by a study from Klusmann, who reviewed all the available evidence about relationship duration and sexual desire (Klusmann, 2002). He concluded that in women sexual desire declines with relationship duration. But when women find new partners at a later age, their sexual desire may bloom. In men, sexual desire declines with age, no matter what.

SEXUAL RESPONSE AND SEXUAL DISTRESS

Bancroft et al. (2003) investigated which sexual problems predicted sexual distress in a random sample of 815 North American sexually active heterosexual women aged 20–65. The best predictors related to general emotional and physical well-being and the emotional relationship with their partner during sexual activity. Sexual distress was not related to physical aspects of sexual response, including arousal, vaginal lubrication, or orgasm. Similar data were obtained by Mercer and colleagues (2005). In a recent study by King and colleagues, relationship and emotional difficulties were the most common perceived causes of sexual difficulties of women, whether or not they were assigned an official diagnosis of sexual dysfunction (King et al., 2007). The 401 participants in that study were patients of general practitioners in London. The above studies all show a

large discrepancy between official sexual dysfunction diagnoses and the women's own assessment of their sexual function.

Thus, women's sexual distress seems largely unrelated to genital response, but is related to context – that is, to the circumstances of their sexual lives.

INCENTIVE MOTIVATION

In our view, a 'push–pull' model of incentive motivation is better suited to explain sexual dysfunction than the biomedical disease model currently dominant in sexual medicine. Our model stresses that desire for sex results from interaction between a sensitive sexual response system and stimuli that are present in the environment; thus we claim that 'spontaneous' sexual desire does not exist (Both et al., 2007; Everaerd and Laan, 1995). The sensitivity of a person's sexual system *pushes* the individual towards sex, and the situation, with its sexual stimuli, *pulls* the individual towards sexual activity. This model pre-supposes a sexual response system that can be activated by sexual stimuli. Each person has some disposition to respond to sexual cues, often coined 'arousability'. Sexual cues and our disposition to respond to them lead to arousal and desire. The disposition to respond to sexual stimuli probably depends on sufficient neurotransmitter and androgen levels in the brain and hormones in relevant tissues in the body.

According to an incentive motivation model, sexual desire results from confronting sexual stimuli or thinking about these cues (cf. Meston and Buss, 2007). The sexual information generates sexual arousal/activation, and desire follows from that. From this it follows that you don't have sex because you feel sexual desire, as the old drive model has it, but that you feel sexual desire because you have sex. Desire is the result of an emotional response to certain stimuli.

SEXUAL AROUSAL AND DESIRE

A sexually meaningful stimulus leads to an emotional response that may result in arousal and even in full-blown sexual behavior (Both et al., 2003; Both et al., 2004). When a sexually meaningful stimulus triggers our sexual motor system to become activated, the subjective experience of this event is what we call sexual desire. From this view it follows that arousal and desire are closely intertwined. Sexual desire increases as sexual arousal increases, but engaging in sexual behavior depends on many contextual factors. This view contrasts with the conventional view that sexual desire precedes sexual arousal.

Based on incentive motivation models, we conclude that sexual arousal and sexual desire are both responses to a sexually relevant stimulus. Without a sexual stimulus there is no desire. In fact, there is no good reason to assume that feelings of desire and arousal are two fundamentally different things. Perhaps we can phenomenologically distinguish them and say that feelings of arousal represent

the subjective experience of genital changes, maybe combined with a conscious evaluation that the situation is indeed 'sexy', and that feelings of desire represent the subjective experience of an action tendency, of a willingness to behave sexually. Again, this view suggests that there is no such thing as 'spontaneous sexual desire' in the absence of any sexual stimulus. In order for the sexual system to be activated, the brain has to have processed sexual information. The desire may *feel* spontaneous, as, for instance, in the early stages of a new and exciting sexual relationship, but in such cases we constantly engage in all kinds of sexually stimulating thoughts.

In women who for medical reasons have clear, demonstrated, neurotransmitter or hormonal deficiencies, it will probably be helpful to replenish these agents, but this will never be sufficient to activate the sexual system. Care must be taken not to focus too much on these 'push' factors. Such factors are *necessary* for sexual response, but they are not *sufficient*. For instance, adequate androgen levels don't make one sexy, but sexual stimulation does.

CONCLUSIONS

In women, genital response does not predict sexual feelings. Instead, sexual feelings may be more determined by meanings activated by stimulus and stimulus-context than by feedback from genital response. This would suggest that in somatically healthy women who have sexual dysfunctions, we should not look for impaired genital response. Lack of adequate sexual stimulation – a possible result of lack of knowledge, bad technique, lack of attention for, or negative emotions to, sexual stimuli – or a myriad of different relationship issues seem to better explain the absence of sexual feelings and genital response. Probably the best cure for women's sexual problems is helping women to allow themselves to be sexual, and to work on the circumstances that may help them to be so.

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