Curr Sex Health Rep (2016) 8:163–175
DOI 10.1007/s11930-016-0079-9

The Enigma of Sexual Desire, Part 2: Theoretical, Scientific, and Medical Perspectives

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Published online: 10 May 2016

Abstract In this two-part series, we review various perspectives of non-science writers (Part 1) and then, in this second part, beginning with the late nineteenth century, of scientists and medical professionals (psychologists, physicians, etc.). In this part, we focus on various scientific approaches and models regarding the nature of sexual desire, including its role in engendering sexual and non-sexual responses. We show that most of the current thinking regarding sexual desire is founded upon these previous models and that, in reality, the development of this construct has progressed little over the past quarter century. The relatively recent notion of low sexual desire as being a problem or even dysfunction is considered, as we, in the final section, attempt not only to synthesize the many perspectives of this construct but also to discuss its future direction.

Keywords Sexual desire · Sexual motivation · Libido · Evolutionary theory

Introduction

In this two part series, we explore the concept of sexual desire, not only as a contemporary idea that has undergone recent revision in sexual medicine, but as a concept that has been of interest to the general populace over time, and more specifically to sexologists and psychologists since the late 1800s. In Part 1, we embarked on a brief historical view of the Western concept of sexual desire. Now, in Part 2, we track the development of the concept of sexual desire as it became a topic of scientific investigation, explicating a number of significant viewpoints along the way that have dissected and analyzed it as a phenomenon to explain psychological processes such as thoughts, feelings, motives, and behaviors.

As noted in Part 1, we define the concept of sexual desire broadly. While not all terms are synonymous—libido, passion, desire, interest, and drive, each conveying its own nuance—we treat them as equals: they all embrace a common element of the human experience—the desire for sex and/or sexual intimacy with another. Most recently, however, the sexological/sexual medicine community has preferred the term sexual desire, with such language now firmly entrenched in clinical texts.

> *Desire makes everything blossom; possession makes everything wither and fade.*
> —Marcel Proust, *Les Plaisirs et les Jours*

Aims of This Two-Part Paper

The goal of Part 1 of this treatise is to recognize the rich and varied understanding of sexual desire as a phenomenon critical to the human experience that has shaped (and continues to shape) Western popular and scientific thinking. The goals of this Part 2 are (1) to track the various lines of academic/scientific thinking regarding this concept; and (2) to provide reflection and commentary on the status of the concept of sexual desire.

This article is part of the Topical Collection on *Integrating the Psychosocial*

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Sexual Desire as a Psychological Concept/Construct

Given its importance to understanding the human experience, it was inevitable that those who study human psychology and behavior should explore the nature of sexual desire and seek ways to incorporate this concept into an understanding of human motivation and behavior. Although many nineteenth century scientists took up the study of sexuality, including canonical names like Richard von Krafft-Ebing, Havelock Ellis, and Magnus Hirschfield, the first to specifically study sexual desire in any significant way was Sigmund Freud whose ideas had radical and lasting impact on medicine, psychology, literature, and popular discourse.

Lust is the source of all our actions, and humanity.
—Blaise Pascal, Pensées, 17th century

Freud and the Psychoanalytic Perspective

In the late 1800s, Freud developed an elaborate theory of personality development and impairment, as well as the psychoanalytic process for resolving conflict and dysfunction. His approach to psychotherapy focused heavily on the tension between the unconscious and conscious mind, and stressed the importance of early childhood experiences as formative to the nature of the mind. Included in his theory was the concept of "libido," the energy that motivates people to engage in sexual activity.

Libido, according to Freud, is driven by *Eros* or life instincts, the drives to survive (hunger, safety, thirst), reproduce, and experience pleasure. Life instincts motivate people via this energy to engage in desirable behaviors (engaging in sex, eating, forming friendships, etc.), but these instincts are balanced by *Thanatos*, or drives that promote aggressive and risk taking behaviors that can either lead to great payoff or, alternatively, to the individual's death, including through self-destruction [1]. This balancing act between *Eros* and *Thanatos* helps create and control motivation in people.

Libido was a function of the instinctive *id*, or the unconscious, hedonistic portion of the mind. As an individual develops, first formed is the id, followed by the *ego*, the part of the mind seated in reality and consciousness. The ego attempts to balance the needs of the id with the moral principles set by the *superego*—also irrational—the final step in personality development. The development of the libido—tied strongly to the experience of pleasure—was not a simple process but assumed successful passage through various pleasure stages, with the mouth being the first source of pleasure (and therefore desire), followed in succession by the anus and the phallus. Thus, desire was directed initially toward activities involving these body parts. The final stage, the genital stage was similar to the phallic stage; however, with the superego more developed, the child becomes aware of the need to direct desires for pleasure away from the self and toward other (appropriate) individuals [2]. From Freud's perspective, *low* sexual desire could be conceptualized as a dissociation of the sexual instinct, typically resulting from defense mechanisms developed during sexual maturation. Low desire would be more likely to occur in women, since girls showed a greater tendency toward inhibition and repression than boys. Freud also acknowledged that males possessed greater intensity of innate libido than females.

Due to the varying viewpoints on sexual expression throughout history, Freud recognized that society promoted the channeling of libido into appropriate, productive, and creative avenues. For example, libido might be channeled toward one's occupation, increasing the potential for promotion, which might hold benefits for both the individual and society. Yet, despite his seminal thinking on issues of sexual drive, Freud's postulations were criticized because they were not readily testable. More pertinent to this discussion, his psychoanalytic theory (including libido) was androcentric, with adult male neuroses being attributable to sexual desire developmental anomalies. His theorizing offered little insight into female sexuality and libido, as women were viewed simply as penisless men with similar libidinal instincts [3].

Neo-Freudians both extended and challenged many of Freud's views of personality development, but overall, they downplayed the sexual nature of libido. For example, Carl Jung viewed libido as energy of the mind that could be directed not just toward sexual ends, but also toward creativity and other productive purposes (exercising, painting, etc.) [4]. Erik Erikson built upon Freud's perspective of libido development by extending it beyond childhood—as something of a life force—to include an individual's entire life, with his theory placing greater emphasis on libido as a driver of social interaction than sexual interaction [5]. Karen Horney rejected entirely the notion that *Eros* and *Thanatos* were the driving forces behind personality: she contended that love is non-sexual and passive and that human needs were tied to wanting to feel loved and accepted (i.e., belongingness), not to sexual gratification. As such, Horney, embracing a more feminine perspective, placed less emphasis on sex as the most influential factor in an individual's life, arguing that human behavior resulted from cultural experiences, not biological drives [6]. Not only, then, did the Neo-Freudians distance themselves from the initial conceptualization of libido, but Horney's greater emphasis on the need for intimacy over sexual gratification pre-dates and aligns well with recent revisionist thinking about women's sexual desire—that it was often less about sex and more about positive emotion and acceptance.

Although reference to Freudian or Neo-Freudian understanding of libido seldom occurs in today's scientific literature about sexual desire, Freudian contributions were not insignificant. These theorists were, for example, the first to recognize

the importance of libido as a strong (and instinctive) driving force not just of sexual behavior but other human behaviors as well; Freud and his followers anticipated evolutionary theory by hypothesizing that sexual drive was the force behind many reproductive-related but non-sexual behaviors, such as competition, achieving status, and so on.[1] And the Freudians drew upon classical and historical notions of balancing sexual urges with societal needs, arguing that society's role was, in part, to channel the energy of sexual desire into productive and acceptable activities. Emphasizing the non-sexual elements of intimacy, Horney first articulated an important need reiterated in today's revisionist thinking about sexual desire.

> *I have always been full of lust—as I am now—but I have always*
> *been placing conceptual obstacles in my own path.*
> —Susan Sontag, *Reborn: Journals and Notebooks*

Motivational Theory

Often forgotten if not just plain overlooked, research and courses devoted to the concept of motivation proliferated in psychology departments in the 1950s and 1960s. Concepts perhaps most championed by Clark Hull and his collaborator, Kenneth Spence, early theorizing on this topic brought together aspects of biology, drive, motivation, and learning—all elements that play a role in today's conceptualization of human sexual desire. Hull's model of behavior was both complex and highly detailed, but it contained several essential components that are simplified here [7].

Working with Spence, Hull developed one of the first empirically based theories of motivation, which goes something like this. Behavior is the result of motivation which acts as the energizer behind behavior—any and all behaviors. Motivation has several components, the two most relevant for this discussion being "drive" and "incentive." Drive is biologically rooted in a particular need state (e.g., lack of food). This state of tension/arousal activates the organism, "pushing" it toward a specific goal that is likely to reduce the need. Incentive, on the other hand, refers to the pleasant (attractive) characteristics of the goal, contributing to motivation by "pulling" the organism toward that goal. Thus, in essence, states of motivation result from a combination of internally (biologically) "pushing" components and externally "pulling" components derived from the object or stimulus.

How does all this apply to sexual motivation? Although Hull's theory applies best to such biological drives as hunger, thirst, and temperature regulation, variations of it were extended to explain sexual behavior. Although unlike the internal need states of other drives that resulted from some sort of deprivation state, the sexual drive too was internally derived, emanating from a particular set of internal regulators (e.g., hormones). At the same time, motivation for (interest in) sex was also the result of the characteristics of the stimulus object (attractive vs not attractive). Pursuant to these initial ideas, experimentalists working mainly with animals meticulously investigated the nature of sexual motivation and arousal for well over half a century, defining terminology, operationalizing constructs, and explicating models that accounted for variation in sexual behavior [8•]. Among their findings—and relevant to current re-conceptualizations of sexual desire—is that animals seek sexual arousal even when they are not able to engage in copulation, and they seek the opportunity to engage in copulatory behaviors even when (at least) the male does not have the opportunity to ejaculate/orgasm (presumed orgasm in non-human females is difficult to ascertain). Thus, both arousal states and consummatory behaviors impart their own intrinsic rewards, a point rediscovered in recent revisions of the conceptualization of sexual desire in women.

With respect to humans, sexual desire is a motivational state having both internal (biological) and external (stimulus properties of the object of reward) components. Internal factors such as androgens in men and, to a lesser extent, androgens and estrogens in women, generate the drive state that pushes humans toward sexual behavior. Indeed, such internal regulators may be so strong as to drive sexual behavior in the absence of a partner, that is, toward masturbation, a situation in which stimulus properties of the object are not relevant (except through erotica or fantasy) [9]. On the other hand, motivation/desire may be increased, or even induced, simply by the qualitative characteristics of the object, whether physical, psychological, or relational, an idea borne out in men and women by a number of studies, e.g., [10]; furthermore, women, whose internally based drive may naturally be low (or at least lower than men's), may become interested and aroused primarily due to the attracting qualities of the partner.

Motivational theory was lost not because it did not provide a testable and feasible means of explaining various behaviors, including sex, but because aspects of the theory (e.g., the need for drive-reduction for learning to occur) were so detailed that they did not always stand up to close scrutiny. Nevertheless, much of the reconceptualization of women's sexual drive over the past decade [11, 12••] is, to a large extent, a reiteration of the principles and findings set forth by motivational theory over half a century ago. Interestingly, and also consistent with today's revisionist thinking, motivation theorists did not draw a strong distinction between the motivational state (in this case, desire) and the arousal state—they were conceptualized as simply two key characteristics of a continuing process.

[1] Evolutionary theory, discussed later, argues that such non-sexual behaviors such as competition and status increase the opportunity to gain access to females and therefore lead to greater reproductive success in males.

A man's desire is for the woman, but the woman's desire is rarely other than for the desire of the man.
—Samuel Taylor Coleridge, 19th century English poet and philosopher

Kaplan and Leif: Inclusion of Sexual Desire as a Part of the Sexual Response Cycle

In the late 1970s, Kaplan [13•] and Leif [14] did great service to the field of human sexuality by incorporating the concept of desire into the sexual response cycle. Although long overdue—given that experimental psychologists had begun the analysis of sexual motivation in non-human species a quarter century earlier—this step significantly advanced the clinical understanding of sexual response and dysfunction. Prior to this time, sexual desire issues were recognized within the psychosexual community, but they were viewed as somewhat unrelated to the overall sexual response process.

With the publication of *Human Sexual Response* in 1966, Masters and Johnson pioneered the investigation of the physiological aspects of human sexual response, identifying a series of overlapping but continuous stages that could be characterized by changing physiological responses. These stages—excitement, plateau, orgasm, and resolution—provided an important framework for the typical progression through sexual response [15]. Others, including Leif and Kaplan, took note, but realized that although the Masters and Johnson model was clinically relevant, the model was incomplete, specifically omitting any role for sexual desire. Thus, Kaplan and Leif independently but simultaneously proposed an adaptation to Masters and Johnson's model of arousal and orgasm to include desire, with the state of desire preceding the excitement phase characterized by genital arousal; thus, desire was understood as mental, emotional, or perceptual, whereas arousal was more demonstrably physiological. Kaplan specifically argued for the separation of sexual response into distinct, successive, and interrelated phases (desire, arousal, orgasm) in order to isolate, study, and understand each phase so as to improve treatment methods [16].

Kaplan also criticized the contemporary psychoanalytic approach to sexual dysfunction and desire. Consistent with the behavioral revolution of the era, Kaplan and others, e.g., [17]—essentially borrowing and incorporating ideas from earlier motivational approaches—posited that sexual desire and its difficulties had both biological and experiential origins. On the one hand, for example, sexual conflict stemming from childhood experiences may be buried somewhere in the biologic unconscious, thus causing anxiety or guilt which could then lead to dysfunctional expressions of sexual desire. On the other hand, desire (or lack of it) could be a conditioned response. For example, a person's level of desire might diminish as a response to anxiety which, through repeated pairings, becomes conditioned, even to the point where the desire becomes unconsciously suppressed.

Desire, as a drive, was controlled by activation of stimuli in the limbic system, where excitatory and inhibitory systems engage (an idea foreshadowing the excitation/inhibition model of Bancroft and Janssen [18]). Once active, the person attempts to satisfy this drive by seeking and experiencing arousal and orgasm. Similar to other drives, the sex drive diminishes when other needs are unmet (e.g., safety), and so, when desire is diminished or absent, the threshold for excitement and orgasm increases accordingly. Again borrowing from motivational theorists, Kaplan compared this response to hunger: the desire to eat or to feel satisfied is less appealing when the person is not hungry unless the incentive value of the object if very high [16].

Desire could be activated by biological (e.g., testosterone) and psychological (e.g., being in love) excitatory stimuli. But it could also be inhibited by other biological (e.g., pain) and psychological (e.g., anxiety) factors, and these inhibitory stimuli could account for most desire problems, which then might also affect the arousal and orgasm phases. For example, relationship difficulty might activate inhibitory stimuli, thus decreasing desire and raising the threshold for arousal and orgasm. Kaplan did recognize that separating the biological from the experiential origins of desire was often a challenge [16].

Kaplan's conceptualization of sex differences in desire was sometimes nuanced and, as a result, not always clear. The same central neural processes were assumed to be involved in both men's and women's sexual desire, and differences between men's and women's desire were seen as negligible [19]. Yet, Kaplan believed that men were more likely to experience desire than women when inhibitory stimuli were present. For example, a man angry at his romantic partner would more likely experience sexual desire than a woman in a similar situation.

In summary, Kaplan (and her contemporaries) not only brought the concept of sexual desire to the foreground by proposing the three-stage model of sexual response, but also included elements of motivational, behavioral, and personality psychology. She recognized that sexual desire was the product of both inherent and learned/conditioned responses—the latter being similar to the incentive factor in motivational theory—and that those conditioned responses might either increase or decrease sexual desire. Her later work [16, 19] emphasized the importance of relationship dynamics as a critical factor in low desire in both men and women, with most treatment strategies based on working through couples' issues. Although Kaplan's view was fairly sophisticated, much of the detail and nuance was lost when her thinking was simplified and presented only as the three-stage model, with desire serving as a prerequisite condition for arousal and orgasm. Subsequent researchers and clinicians often approached sexual desire as a homogenous

entity consisting of an inherent set of biological preconditions that could be applied somewhat uniformly to all situations and to both sexes—thinking not really consistent with Kaplan's more complex and subtle view of sexual desire. In fact, although Kaplan sequences desire as preceding arousal and orgasm, her model allowed for substantial flexibility, as desire was not viewed as a discretely defined phase but rather as a process that overlapped and reciprocated with arousal.

> *Hogamus higamus, man is polygamous/Higamus hogamus, woman is monogamous.*
> —attributed to Mrs. Amos Pinchot, William James, Dorothy Parker, Ogden Nash, and others

Evolutionary Perspective

As with motivation theory, the evolutionary perspective does not deal specifically with sexual desire, but it provides a framework relevant to understanding sex differences in sexual desire. Summarized by Daly and Wilson in 1978 [20] and expanded upon by others, e.g., [21••, 22], the evolutionary perspective provides an explanation as to why sexual drive in men and women *should* be (and is) different.

A fundamental aspect of evolutionary theory is that organisms behave in ways that increase their reproductive success. In doing so, they strengthen the odds that their genes will be represented in future generations: genes that support physical structures and behavioral strategies that increase reproductive success will be represented in future generations, whereas genes that do not support reproductive success will not persist in the gene pool.

The essence of the argument begins with the fact that males and females contribute equally genetically to the offspring but differently to the work of reproduction, both in terms of the nature of their contribution and the effort expended. Beginning with the more expensive and nourishing gamete contributed by the female, she invests more heavily in the production and rearing of offspring than the male. Other than genetic material, the male has little to contribute to the early stages of mammalian development.

Thus, from the outset, the mammalian female is the sex more heavily invested in the offspring. As a result, she is saddled with nearly all of the work of early rearing even though genetically her benefit is no greater than the male's. But because she invests more in the offspring, females are valued by males—males will compete for access to females, and the female will choose from among suitors with whom to mate.[2] In contrast, the male is invested less in individual offspring but has the potential to produce a large number of offspring by mating with a number of different females, and he has a ready and constant supply of gametes (sperm) to enable this. However, in order to increase his reproductive success, the male needs access to females, and therefore males compete among themselves for such access, with potentially large payoffs. Due to this high payoff, males are driven to compete aggressively for access to as many females as possible. Thus, male investment in reproduction is directed less toward the offspring, and more in gaining access to females who will then, by the nature of their physiology, invest more heavily to ensure the success of the offspring.

But females have a trump card to play. Because males compete for them, and because they presumably choose the male with whom to mate, females can "demand" something from the male, ultimately basing her choice on some characteristic that he brings to the mating: a piece of nesting material or nourishment; resources that support the female's offspring or the female herself; or the promise of sharing in raising the offspring. Thus, females of some species will judge the suitability of their mate based on characteristics that signal the male's willingness to invest in the offspring.

The male then can well afford to be less discriminating in the choice of females, as he has the potential to mate with many, thereby increasing his chances for reproductive success. If one mating fails, he has invested little and so can move on. In contrast, the female mammal, who is invested more heavily in each mating, will benefit from a more discriminating disposition to "check the credentials" of her mate. Those credentials in a polygynous mating system may simply be evidence of strong genetic material (e.g., impressive display of peacock feathers, since male with inadequate nutrition would not "waste" limited resources producing elaborate feathers), or, in semi- or fully monogamous systems, evidence of willingness to contribute to the success of her offspring. In other words, a failed mating is much more costly to her, as she has already invested much into the offspring.

So what do discriminating females and indiscriminate males have to do with human sexual desire/drive? The physiological systems that support these characteristics will necessarily affect the mating behaviors of each of the sexes. A strong sex drive supporting the competition and aggression necessary for reproductive success would be internally driven in the male—namely through the production of androgens. Such endogenous motivation would be less attentive to the stimulus characteristics of the female, except those relating to fertility. Thus, evolutionary theory predicts that motivation in the male would consist of strong internal regulation, but weaker external regulation. Such a system would translate into an ongoing, spontaneous, and unprompted sex drive (desire) that would enable an opportunistic stance toward mating—little would be lost from an unsuccessful mating, and much would be gained from anything greater. In contrast, the female

[2] This is basically an economic argument. If you are looking for a partner, say, for a business enterprise, you would surely choose that candidate that promises to bring the greater effort and resources to the table.

is tasked with checking the credentials of the male, so the female would pay attention to the cues of specific males, possess a system to evaluate them, and then select particular males over others. Nearly all mammalian females (some primates being excepted) have strong internal regulatory systems, namely the presence of estrogen and progesterone, which complement their need to attend to specific mate characteristics, suggesting that motivation in most mammalian females represents a combination of internal (drive) and external (incentive) elements. However, the human female and other select species have largely de-coupled sexual responsiveness from internal regulators such as hormones—which, as a result, play a lesser, sometimes only minor, role in the expression of their sexual behavior. In other words, sexual behavior in the human female—who has a large investment and a large cost for failure—should be strongly externally regulated by the stimulus characteristics of potential mates as well as other relevant situational factors, the "K" or incentive factor in Hull's theorizing. Internal regulation, as might be manifested through spontaneous sexual drive, should be less of a factor. Indeed, such differences between men and women have been repeatedly borne out, where women's sexual desire is less likely to be spontaneous and tied more closely to context, including characteristics of the potential mate (e.g., emotional investment, resources, etc.). As noted later in this paper, the revisionist position on sex differences in sexual desire has, in one sense, come to recognize the mating strategy differences predicted by evolutionary theory.

Summary

In summary, the academic study of sexual desire has progressed neither smoothly nor in a linear fashion, that is, with idea building upon idea. Rather, various theoretical perspectives have approached desire from widely different angles, each contributing a unique set of assumptions and ideas. Attempts not only to integrate across scientific approaches—drawing the relevant pieces together and discarding those that lack heuristic value—but also to ensure that the scientific conceptualization of sexual desire captures the essence of the human phenomenological experience have only recently been undertaken.

Recent Developments

For much of human history, the overriding concern of society had been how best to curb, control, or channel sexual desire and urges (see Part 1). With the new sexual awareness occurring in the latter half of the twentieth century, elements of the conversation changed. Given the new emphasis on sexual enjoyment and health, sexual desire was reaffirmed as a normal and valued aspect of any sexual relationship. Although sexual "drive" was long recognized (at least in animals) to be a critical component of sexual behavior—dating back to motivational theorists of the 1940s and 1950s—the concept was not readily incorporated into the understanding of human sexual response until some 25 years later. Part of the reason for this long delay undoubtedly lay in the siloed approaches of two seemingly disparate fields: experimental psychology and human sexuality—fields that had little conceptual overlap and practically no cross-communication. A second reason might well have been related to the nature of the seminal research on human sexuality in the USA. Kinsey (1948, 1953), a zoologist, focused mainly on various normal and less-normal sexual practices but had little to say about sexual desire per se other than that individuals were born with an innate capacity to respond to physical or psychological stimuli—and in this regard, males were more responsive than females [23, 24]. Masters and Johnson in 1966 and 1970 [15, 25], writing mainly from a medical perspective, were interested in describing the physiology of arousal. Whether dealing with normal sexual response or with sexual dysfunction [25], they included minimal prospective role for sexual desire—their attention to psychological issues surrounding sexual problems was primarily limited to the role of cultural values and subsequent performance demand. Nevertheless, as attention by clinicians turned to remediation of sexual problems, expansion of Masters and Johnson's conceptualization was required. Enter Kaplan [13•] who, as noted above, augmented the Masters and Johnson model by adding the key element of "desire" to the model of human sexual response. And with this change, a *lack* of sexual desire was added to the possible list of sexual dysfunctions. As noted previously, although Kaplan's brand of desire was nuanced, it was all too often applied somewhat monolithically to all situations and to both sexes. Thus, although Kaplan introduced an important element to the understanding of sexual response and dysfunction as far back as the 1970s, her conceptualization had essentially remained unmodified and undeveloped for 25 years.

> *Lust is the best of the all the deadly sins.*
> —Colleen Hoover, NY Times Bestselling Author

Low Sexual Desire as a Problem

With the sexual revolution of the 1960s, society witnessed a change in thinking: previously concern lay primarily with uncontrolled sexual drive; now in the second half of the twentieth century, the *lack* of sexual desire was viewed as a problem—eventually being classified around 1980 as a dysfunction that warranted fixing. Once the lack of sexual desire was viewed as a problem, need arose to conceptualize and incorporate it into diagnostic manuals. In this section, we follow the development of low sexual desire as a sexual dysfunction,

using various diagnostic nosological systems to track its introduction and modification over the years. We trace the psychiatric history of "hypoactive sexual desire" through editions of the Diagnostic and Statistical Manual of Mental Disorders, and the sexual dysfunctional record in the International Statistical Classification of Diseases and Related Disorders and the International Society of Sexual Medicine, briefly reviewing and discussing recent developments in its conceptualization. As part of this discussion, we differentiate between the clinical classification of hypoactive sexual desire disorder and low sexual desire, supporting the argument that from a clinical perspective, this distinction lacks utility. Finally, we attempt to integrate and summarize diverse perspectives on sexual desire, and consider the future outlook for this construct.

Tis better to have love and lust than to let our apparatus rust.
Kurt Vonnegut, *God Bless you Dr. Kevorkian*, 2001.

The Development of Diagnostic Classifications Related to Low Sexual Desire

Given that sexual desire was not included as part of the sexual response cycle until Kaplan's reformulation in 1977 [13•], the Diagnostic and Statistical Manual of Mental Disorders did not include reference to *low* sexual desire as a sexual dysfunction until DSM-III in 1980 [26]. In this version (as well as the revised DSM-III-R), the terminology "inhibited sexual desire" was used to encapsulate problems of low sexual desire, briefly described as "persistent and pervasive inhibition of sexual desire," with either self or partner distress considered requisite [26, 27]. Additionally, the diagnosis of inhibited sexual desire would not be met if the problem could be better explained by a different condition, whether physical or mental, or a medication.

DSM-IV in 1994 [28] and later DSM-IV-TR in 2000 [29] elaborated the language surrounding a definition of sexual desire and expanded the desire disorders to include two separate categories: hypoactive sexual desire disorder (HSDD) and sexual aversion disorder. HSDD was classified as a lack of sexual fantasies and desire for sexual activity, a decreased motivation to seek out sexual stimulation/ experience, and an inhibited feeling of frustration when sexual activity is not experienced. Sexual aversion disorder was described as the recurrent and persistent avoidance of sexual genital touching. While this latter disorder did not directly discuss desire, it was implied that the avoidance of touching genitals might stem from a desire dysfunction. For both disorders, personal distress or interpersonal difficulty was requisite for the diagnosis. Furthermore, the disorder could not have been better explained by another mental disorder, medical condition, or substance use. The DSM-IV also outlined specifiers such as lifelong vs. acquired, generalized or situational, and caused by psychological or a combination of biological and psychological factors. As with DSM-III, neither DSM-IV nor IV-TR distinguished between desire disorders across men and women [28, 29].

The World Health Organization in its International Statistical Classification of Diseases and Related Health Problems (ICD) did not recognize low sexual desire as a disorder until ICD 9, which, when revised and updated, included language describing the condition as a psychosexual dysfunction with hypoactive sexual desire. The current ICD-10 (2016) refers to a lack or loss of desire—undifferentiated by sex—that is not secondary to other sexual difficulties, such as erectile failure or dyspareunia [30].

Desire in men is a hunger, in women only an appetite.
—Mignon McLaughlin, female American author and journalist, *The Neurotic's Notebook*, 1963

Recent Revisions to the Conceptualization of Sexual Desire

Anticipation of the revised DSM-5 in 2012 resulted in a flurry of publications on sexual desire—most focusing on the female. The major theme running through these publications—some of which were opinion pieces—was that the construct of female sexual desire needed rethinking, particularly insofar as its analogy with male sexual desire. To some extent, this surge for change was critical of prior thinking about the conceptualization of sexual desire without always, in our opinion, giving due recognition to the complex and subtle theorizing of previous authors. Indeed, Kaplan's model—when truly understood—could accommodate much of the revisionists' concerns. Although our historical analysis does not permit comprehensive coverage of the many recent authors/ ideas and their rationales advocating for and justifying revision of the conceptualization of sexual desire (i.e., others have done this well and besides, it is beyond the scope of this paper), we include reference to several key works and ideas.

In 2001, in the interim prior to the development of DSM-5, the international consensus conference[3] on sexual disorders [11] provided the following definition for sexual desire and aversion disorders: "Hypoactive sexual desire disorder is the persistent or recurrent deficiency (or absence) of sexual fantasies/thoughts, and/or desire for or receptivity to sexual

[3] This report was the result of a conference supported by the Sexual Function Health Council of the American Foundation for Urologic Disease through educational grants provided by Affiliated Research Centers, Eli Lilly/ICOS Pharmaceuticals, Pentech Pharmaceuticals, Pfizer Inc., Procter & Gamble, Schering-Plough, Solway Pharmaceuticals, TAP Pharmaceuticals, and Zonagen.

activity, which causes personal distress. Sexual aversion disorder is the persistent or recurrent phobic aversion to and avoidance of sexual contact with a sexual partner, which causes personal distress." While this definition added next to nothing to the understanding of sexual desire disorders, the consensus group did note that female sexual desire was poorly understood, and it emphasized the need for updated assessments to better capture "distress" as a condition for a low sexual desire diagnosis. [4] The group also called for new research that might examine additional aspects of sexual desire beyond those related to "spontaneous" thoughts about sex, such as ones related to "receptivity to sex" [11].

From 2000 to 2011, the call for change became increasingly more vocal. Basson and colleagues [31], Brotto and colleagues [32, 33], Meana [34•], Mitchell and colleagues [35] and others, besides citing problems with the combined Kaplan and Masters and Johnson model (desire to arousal to orgasm), argued that the traditional model might apply well to men but not to women, noting that most women's desire does not originate as a drive as it does for men.[5] They also noted that the traditional model may apply to women toward the beginning of a romantic relationship, but that it lacked the complexity needed to describe longer-term relationships. These revisionists further argued that women's desire and arousal do not necessarily follow a linear progression as suggested by Kaplan, stating that one can occur with or without the other. Finally, orgasm was not deemed a necessary component of a pleasant sexual experience; in fact, unlike men, women's desire may not be directed toward physical pleasure or even sex. Rather, for the woman, the sexual response cycle is more individualized, with a variety of different response patterns possible depending on the quality of that relationship, psychological state of self/partner, and so on.

The revisionists proposed an alternative model to resolve the above problems, suggesting that female sexual response begins at a neutral state: no desire and no arousal. As various occasions arise, the woman might notice her partner's desire, or realize opportunity or benefits from engaging in a sexual encounter or experience. For example, a woman may want intimacy with her partner and such awareness allows her to progress to the next phase of the model—choosing to seek out sexual stimulation and thus experience sexual desire. In this model, sexual desire is not spontaneous and unprompted as indicated by previous models (although one might argue that this constitutes a misinterpretation of Kaplan's model and/or unfamiliarity with general motivational theory); rather, it emerges in response to an awareness of non-sexual needs—not that sexual desire is not sometimes spontaneous in women, but that just as often it arises from non-sexual and/or interpersonal parameters.

The revisionists reiterated the importance of the benefits of a sexual experience to future desire facilitation. For instance, following a sexual experience, a woman may feel emotionally closer to her partner. Additionally, a sexual experience may be beneficial to the relationship (e.g., enabling partners to overlook imperfections, increasing care for sexual well-being, etc.). These increases in positive feelings may facilitate further sexual desire, beginning the sexual response cycle again (experiencing desire for non-sexual reasons). Such ideas, though now featured more prominently, are to a large extent contemporary reiterations of ones explicated by Kaplan and indirectly assumed within motivational theory.

Responding in part to the concerns of the international consensus group as well as the writings of various experts, DSM-5 in 2012 [36] separated desire disorders by sex. For men, male hypoactive sexual desire disorder was retained, described as a recurrent deficit of sexual/erotic thoughts or fantasies. For women, the arousal and desire disorders were combined into a single disorder: female sexual interest/arousal disorder. This combination stemmed from the apparent interrelatedness of desire and arousal in women and was classified by the following symptoms: absent or reduced interest, sexual thoughts or fantasies, reduced initiation and receptivity of sexual activity, reduced sexual excitement, reduced desire/arousal in response to sexual cues, and absent/reduced genital sensations in 75 % or more sexual encounters. For both sexes, the disorder must have occurred for at least 6 months in order to warrant a diagnosis. As with DSM-IV, DSM-5 diagnosis required distress related to the difficulty and specifies that the disorder should not be better explained by a different mental disorder, medical condition, or substance use. However, DSM-5 also notes that the presence of relationship difficulty and other stressors may negate the diagnosis [36].

> *I believe in the lust of the flesh and the incurable desolation of the soul.*
> Hjalmar Soderberg, Swedish poet, author, playwright, *Gertrud*, 1964.

Taking a Broader View Toward a Unified Theory

Through the past half century, then, the clinical conceptualization of low sexual desire has been modified and elaborated. To summarize, women's sexual desire is now seen as distinctive and different from men's sexual desire; in addition, the desire phase in women has been combined with the arousal phase of sexual response. While such modifications may help

[4] See Appendix 1 for a brief summary about the current state of assessment instruments evaluating sexual desire.

[5] As we pointed out earlier, a careful reading of Kaplan indicates much greater nuance and flexibility than this criticism suggests, and indicates that Kaplan's model was not really far amiss. As we have further noted, however, it appears to be the rather simplistic subsequent interpretations of Kaplan's model, rather than the model itself, that might have been the problem.

with the understanding of sexual desire in women, this separation of women's desire from men's desire does not advance the field toward a unified approach to understanding this construct. Indeed, others have weighed in on the issue of the reconceptualization of sexual desire, proposing ideas that might help reconcile the apparent differences in desire between the sexes. Levin [37], for example, has suggested two phases of desire for women (which seems applicable to men as well), D1 occurring prior to arousal and consistent with an internally driven desire,[6] and D2 occurring as a part of arousal as a response to the context and consistent with externally induced desire. Janssen [38•] took up the issue of male sexual arousal and desire, noting that it may not be all that different from women's desire and that it too might need some re-thinking. Park and Rissman [39] have described new animal models that indicate that the sexual behavior of the males of some species is sometimes independent of gonadal steroids, suggesting that male response is driven, in some instances, less by hormones than previously assumed. Levine [40•] and Perel [41] offer insightful and thoughtful clinician's perspective regarding the oft-changing and sexually differentiated aspects of desire. Perhaps one of the more comprehensive and eloquent syntheses of desire and arousal has been offered by Toates [12••], who managed to incorporate ideas from past models, integrate a number of existing models, draw analogies with models from other fields (e.g., addiction research), show consistency with MRI and neuroanatomical data, and explain factors that might either inhibit or (over) excite sexual desire (as with sexual addictions). Toates convincingly retains desire as its own distinct entity rather than merging it with arousal, yet provides the theoretical and empirical basis to link them together. Perhaps most important, his analysis suggests that models of men's and women's desire need not be different, only that certain aspects of a unified model might warrant greater emphasis for one sex relative to the other.

Finally, the most recent version of DSM implies that *psychiatric-based* low desire is different from *general* low desire (such that the DSM classifications of desire disorders are no longer synonymous with low sexual desire). That is, the recent DSM classifications are now specifically psychiatric (mental) in nature and exclude conditions of low sexual desire that are medically, biologically, or hormonally mediated, or that result from life stressors or relationship distress [42]. In other words, DSM-5 and its predecessor DSM-IV includes low sexual desire only when it results from unspecified, and presumably, mental/psychiatric conditions—a perspective that may serve the psychiatric community, but from the perspective of both the patient and the general health care provider, has limited value. In fact, it has been argued that the fields of sexology and sexual medicine would benefit from abandoning the DSM classification and returning to the more generic "low sexual desire" disorder originally stated in DSM-III, an endpoint classification that, as with other sexual dysfunctions, is likely to have multiple etiologies [42].

What is it men in women do require?
The lineaments of gratified desire.
What is it women do in men require?
The lineaments of gratified desire.
—William Blake, *Gnomic Verses,* 1787

Integration and Future Considerations

Human sexual desire is still a largely under-researched construct, in comparison not only with many other psychological constructs such as anxiety, intelligence, and motivation, but also with other dysfunctions within the field of sexual medicine. Even with the recent introduction of flibanserin to counter low sexual desire in women [43], the clinical conceptualization of sexual desire has advanced only incrementally: basic theory-driven experimental research addressing its unique motivational and arousal properties has been slow to materialize; and generally, the assessment of sexual desire has not been modified adequately to align with previous, or revisionist, or integrative thinking.

Although DSM revision and flibanserin have both stimulated some research on the topic (mainly in women), many fundamental questions regarding human sexual desire remain unanswered, and even uninvestigated. Here, we have cataloged just one line of inquiry—there are many others—that could yield new insight into sexual desire in men and women.

1. How does one explain or account for the biologically internal (drive) vs partner/context-external (incentive) aspects of sexual desire? Although some sources are known, others are not.
2. Given that constructs can be operationalized in many different ways, what are the best ways to operationalize and assess the biologically internal (drive) vs externally derived (incentive) aspects of sexual desire?
3. How do the above sources (internal vs external) of sexual desire differ in men and women? Or in women over phases of the menstrual cycle? Or in men and women over their lifespan, or over their relationship?
4. How do the internal and external components interact? In a straightforward additive fashion, or in a multiplicative relationship such that the value of the incentive is related to the strength of the internal driver, etc.?
5. Is sexual desire that results from internal vs external stimuli actually the same phenomenon? Do they have

[6] It should be recognized that "spontaneous" or "unprompted" sexual desire is reported by about one-third of women.

differing outcomes regarding sexual intensity/frequency (i.e., the variation in responses that sexual desire presumably explains) and ultimately orgasmic response and sexual satisfaction?

6. Should sexual drive and sexual incentive be categorized as distinct entities/components of human sexual desire/motivation; should they be assessed separately, as they may have different endpoints (e.g., orgasm vs. intimacy)?
7. What is the best language to use as descriptors of internal (drive) vs external (incentive) human sexual desire? "Incentive?" "Attractivity?" "Receptivity?"
8. Is low sexual desire resulting from low (or lack of appropriate) internal stimuli the same as that resulting from low (or lack of appropriate) external stimuli? If not, how do they differ?
9. Are such differences in the origin of sexual desire consistent with or relevant to lay peoples' experiences of sexual desire, an issue of external validity? Although several recent reviews, for example, suggest that some men, and women particularly, may not strongly differentiate between desire and arousal, the historical and literary record indicates a longstanding understanding and acceptance of the concept (see Part 1).
10. To what extent are such differences in the origins of sexual desire useful to a clinical diagnosis and treatment?
11. Given that sexual desire is not an all-or-none phenomenon, is there a conceptual way to establish a better gradient system of sexual desire with denotative linguistic markers, perhaps using Kaplan's graded diagnostic system as a starting point [19]?

Beyond specific research questions as those listed above, we suggest four general strategies that might help move the study of human sexual desire forward as a whole. First, as alluded to above, the general language surrounding sexual desire begs for clarification. Frequently, the terms sexual "interest" and "desire" are used interchangeably to denote a condition that is likely to (eventually) lead to sexual activity. Yet, sexual "interest" conveys a cognitive state involving attention, concern, or curiosity. Sexual "desire," on the other hand, suggests a motivational state of wanting or wishing for something: motivational states have emotional and cognitive components (including arousal/energizing components) and typically convey energy or force that will move an individual in a particular direction.[7] Sexual "urge," a term used in more archaic writings, conveys a strong force that impels an organism in a particular direction or into motion. In addition, do such terms as sexual "drive," excitement," and "appetite" add further nuance to the conceptualization of human sexual desire, or do they simply muddle it?

Second, while we do not wish to become entangled in semantics or address the specific questions posed above, it is important to note that some of these issues have been sorted out, studied, quantified, and tested within the community of experimental researchers see [8•], resulting in terminologies and models that organize many psychological/ behavioral processes for causal analysis. Unfortunately, despite the passage of decades since Kaplan's initial formulation, only a portion of the rich conceptualization of experimental psychology has permeated into the field of sexual medicine. Granted, some of this work is based on animal models and thus may have limited application to clinical issues, but the intellectual exercise of finding parallels between animal models and human models of sexual desire and, equally important, developing useful clinical models that can guide assessment and treatment, seems to be less than adequate.

Third, a multicultural perspective is needed [34•, 41] regarding the following: (1) the universality of the concept of sexual desire, for men and women separately; and (2) potential contributions to this construct from other cultural viewpoints. Regarding the former, sexual desire is assumed to be a fundamental part of human nature, as it is critical to ensuring procreation. But different cultures are likely to conceive of, speak of, and experience it differently, given that romantic love and passion—common adjuncts to sexual desire—are largely Western constructs. We wonder, for example, how desire functions in societies with arranged marriages, particularly with respect to male and female differences. Are such differences diminished or intensified, or unaffected? Regarding the issue of contributions from other cultures, the 2nd century Hindu *Kama Sutra*, although sometimes thought of as an illustrated handbook about sexual positions, takes up issues of sexual desire in both men and women and includes ways to enhance it ("Kama" refers to desire, including sexual desire). Consider the following text from Part II, Chapter 1 of the *Kama Sutra* which, in more colloquial language, might have been written by a contemporary sex therapist explaining the sexual response cycle to a couple in therapy:

> Females do not emit as males do. The males simply remove their desire, while the females, from their consciousness of desire, feel a certain kind of pleasure, which gives them satisfaction, but it is impossible for them to tell you what kind of pleasure they feel. The fact from which this becomes evident is, that males, when engaged in coition, cease of themselves after emission, and are satisfied, but it is not so with females…if a male be a long-timed, the female loves him the more, but if he be short-timed, she is dissatisfied with him. And this

[7] An important ancillary question is: assuming differences in the two concepts, does desire precede interest, or does interest precede desire, with the "cognitive" transforming into the "motivational."

> circumstance, some say, would prove that the female emits also.
> But this opinion does not hold good, for if it takes a long time to allay a woman's desire, and during this time she is enjoying great pleasure, it is quite natural then that she should wish for its continuation. And on this subject there is a verse as follows: 'By union with men the lust, desire, or passion of women is satisfied, and the pleasure derived from the consciousness of it is called their satisfaction' [44].

Islamic culture brings another perspective to the issue of sexual desire, as described in Brooks' *Nine parts of desire: the hidden world of Islamic women* [45]. Nine of the 10 parts are given by God to women, as proclaimed by Shiite founder Ali, leading to the cultural conclusion that, given women's strong sexuality, restrictions are needed to preserve welfare and stability in society. Although the text is more an examination of women in Islamic culture and how holy texts have been used to justify their repression, the need to understand the Muslim perspective of sexuality and desire, both from holy texts and cultural practices (which may not necessarily align), may bring additional insight to the conversation about sexual desire, particularly regarding perceived differences between the two sexes.

Finally, the study of sexual desire could benefit from being more "extroverted" in its approach. An inward focus has served the field well as it initially developed its distinct identity, but other fields of psychology have wrestled with many of the problems common to the understanding of motivational states, including motivated behaviors such as hunger, thirst, temperature regulation, and addiction, conditions that have both biological and experiential components. Toates' review [12••] demonstrated the value of such transdisciplinary analysis as he drew parallels from findings on addiction research.

> *The desire accomplished is sweet to the soul.*
> —Proverbs 13:19

Conclusions

We realize we cannot do justice to the concept of sexual desire in this short treatise. Cognizant of the many gaps in our discussion, we have nevertheless tried to capture the essence of thought and attitudes over centuries of written records. Sexual desire has been recognized as a driving force for human sexual (and sometimes non-sexual) behaviors since the Greeks first wrote about it. Despite the fact that some contemporary thinkers believe that men and women find sex desire and arousal difficult to differentiate, the historical and literary records would suggest otherwise. Today's concern about sexual desire and its consequent behaviors is related more to the extremes—too much or too little—for which there may be either legal or psycho-medical consequences.[8]

Recent revisions to the clinical conceptualization of sexual desire are, for the most part, refinements rather than significant reconstruction. Yet despite millennia of conversation about its nature, much about human sexual desire awaits discovery and clarification. For now, scientists, researchers, and clinicians would be prudent to regard the current conceptualization of human sexual desire as inchoate. On the other hand, this psychological construct offers fertile ground for future sexological investigation.

Compliance with Ethical Standards

Conflict of Interest DLR and ART declare that they have no conflicts of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

Appendix 1: Assessing Sexual Desire

With *a lack* of desire identified as a sexual problem or dysfunction, need arose to establish criteria for defining *low* sexual desire. A quick review of sexual assessment instruments reveals almost a dozen questionnaires available for determining low sexual desire. Most female assessment instruments include "desire" as a subdomain, not surprising since low desire (or at least, drive) is more prevalent among women than men [22]. In contrast, most male assessment instruments focus on erectile problems or premature ejaculation; many do not even include sexual desire as a subdomain.

Our interest in these instruments relates more to the nature of the questions asked than to test characteristics such as validity and reliability. Without reviewing all the instruments available, to gain an idea of the types of questions, we sampled three common female instruments, the Female Sexual Dysfunction Index [46], Decreased Sexual Desire Screener (DSDS) [47], and the more in-depth Sexual Interest and Desire Inventory [48]; and we sampled one frequently used male instrument, the International Index for Erectile Function [49]. Generally, these instruments define sexual desire "as a feeling that may include wanting to have a sexual experience (e.g., masturbation or intercourse), thinking about having sex or feeling frustrated due to a lack of sex" (IIEF), and they assess the problem with 2–4 items. Questions typically query about level and/or frequency of desire or interest, satisfaction with level of desire, and recent changes in desire or interest. The SIDI, being more in-depth, has 8 graded items related to sexual desire, including frequency of sex, initiation of sex, receptivity, frequency of desire, satisfaction with, distress about, thoughts about sex, and reaction to erotica.

Perhaps most apparent about these assessment items is their generic nature, simply determining whether a problem might exist rather than attempting to understand aspects of the problem beyond that. The SIDI approaches desire from several different angles, including that of receptivity—presumably a measure of enthusiasm for sex. The SIDI also distinguishes sexual "interest" from sexual "desire" in the instructions, but does not assess these concepts separately. In our view, although this

[8] Although not a diagnostic classification, excessive sexual behavior driven by strong desire becomes problematic when it leads to risky behaviors, inappropriate objects or situations, illegal activities, or impairment of functioning in other areas.

instrument moves the field in the right direction, it does not go far enough in its conceptualization or operationalization of sexual desire and/or low sexual desire. This and the other instruments might suffice for clinical assessment and treatment outcome, but would not likely serve as research tools to explore the construct of sexual desire in any depth.

Specifically, most assessments of sexual desire do not sufficiently align with either past or more recent ideas that suggest distinctions not only between men's and women's experiences, but also between the sources of desire. For example, distinction might be made in the assessment of the "drive" and "incentive" aspects of sexual desire—quite different across the sexes—with equal or greater emphasis placed on desire arising from characteristics of and connection with the partner. Furthermore, although the "receptivity" dimension of the SIDI adds information regarding the woman's "willingness to be sexual," the concept itself connotes a passive rather than active motivational state. It would, for example, seem that the attractive psychological, physical, and relational (i.e., incentive) characteristics of the potential partner could serve as an active motivator for sexual engagement for both men and women.[9] Furthermore, given that the new DSM-5 designation collapses female sexual desire problems and female sexual arousal problems into a single category—suggesting that arousal and desire represent interconnected and inseparable processes—this new construct remains largely undescribed and untested. Existing instruments for the most part still treat them as separate entities/phases rather than assessing them as a single interrelated construct/process.

References

Papers of particular interest, published recently, have been highlighted as:
- • Of importance
- •• Of major importance

1. Freud S, Strachey J. Beyond the pleasure principle. New York: Liveright Pub. Corp; 1961.
2. Freud S. Introductory lectures on psychoanalysis. New York: Norton; 1965.
3. Cohler BJ, Galatzer-Levy RM. Freud, Anna, and the problem of female sexuality. Psychoanal Inq. 2008;28(1):3–26.
4. Jung CG. The theory of psychoanalysis. New York: Journal of Nervous and Mental Disease Pub. Co; 1915.
5. Maier HW. Three theories of child development. New York: Harper & Row; 1965.
6. Wolman B. Psychoanalysis without libido; an analysis of Karen Horney's contribution to psychological theory. Am J Psychother. 1954;8:21–31.
7. Hull CL. Essentials of behavior. New Haven: Yale University Press; 1951.
8. • Pfaus JG. Revisiting the concept of sexual motivation. Annu Rev Sex Res. 1999;10:120–56. **A dense but comprehensive summary of sexual motivation that integrates animal and human research**.
9. Van Anders S. Testosterone and sexual desire in healthy men and women. Arch Sex Behav. 2012;41:1471–84.
10. Bancroft J. Human sexuality and its problems. Edinburgh: Churchill Livingstone; 1989.
11. Basson R, Berman J, Burnett A, et al. Report of the international consensus development conference on female sexual dysfunction: definitions and classifications. J Sex Marital Ther. 2001;27:83–94.
12. •• Toates F. An integrative theoretical framework for understanding sexual motivation, arousal, and behavior. J Sex Res. 2009;46(2–3): 168–93. doi:10.1080/00224490902747768. **This review provides a comprehensive and integrated approach to the understanding of sexual desire**.
13. • Kaplan HS. Hypoactive sexual desire. J Sex Marital Ther. 1977;3(1):3–9. **This classic work should be read by any student having an interest in the topic of sexual desire**.
14. Leif H. Inhibited sexual desire. Medl Aspects Hum Sex. 1977;7: 94–5.
15. Masters WH, Johnson VE, & New York Academy of Medicine. Human sexual response. Boston: Little, Brown and Company. 1966.
16. Kaplan HS. Disorders of sexual desire and other new concepts and techniques in sex therapy. New York: Brunner/Mazel, Inc.; 1979.
17. Leiblum SR. Treating sexual desire disorders: a clinical casebook. In: Leiblum SR, editor. Introduction and overview: clinical perspectives on and treatment for sexual desire disorders. New York: Guilford Press; 2010. p. 1–22.
18. Bancroft J, Janssen E. The dual control model of sexual response: a theoretical approach to centrally-mediated erectile dysfunction. Neurosci Biobehav R. 2000;24:571–9.
19. Kaplan HS. The sexual desire disorders: dysfunctional regulation of sexual motivation. New York: Brunner/Mazel, Inc.; 1995.
20. Daly M, Wilson M. Sex, evolution, and behavior. North Scituate: Duxbury Press; 1978.
21. •• Buss DM. The evolution of desire. New York: Basic Books; 1994. **This book, although now slightly dated, is one of the best sources for understanding sexual desire from an evolutionary point of view**.
22. Lippa R. Sex differences in sex drive, sociosexuality, and height across 53 nations: testing evolutionary and social structural theories. Arch Sex Behav. 2009;38(5):631–51. doi:10.1007/s10508-007-9242-8.
23. Kinsey AC, Pomeroy WB, Martin CE. Sexual behavior in the human male. Philadelphia: W.B. Saunders Co.; 1948.
24. Institute for Sex Research, Kinsey AC. Sexual behavior in the human female. Philadelphia: W.B. Saunders Co.; 1953.
25. Masters WH, Johnson VE. Human sexual inadequacy. Boston: Little, Brown; 1970.
26. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 3rd ed. Arlington: American Psychiatric Association; 1980.
27. American Psychiatric Association. Diagnostic and statistical manual of mental disorders revision. 3rd ed. Arlington: American Psychiatric Association; 1987.
28. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Arlington: American Psychiatric Association; 1994.
29. American Psychiatric Association. Diagnostic and statistical manual of mental disorders text revision. 4th ed. Arlington: American Psychiatric Association; 2000.
30. World Health Organization. International Classification of Diseases, accessed from: http://apps.who.int/classifications/icd10/browse/2016/en.
31. Basson R. The female sexual response: a different model. J Sex Marital Ther. 2000;26:51–65. doi:10.1080/009262300278641.
32. Brotto LA. The DSM, diagnostic criteria for women. Arch Sex Behav. 2010;39:221–39.
33. Brotto LA, Heiman JR, Tolman DL. Narratives of desire in mid-age women with and without arousal difficulties. J Sex Res. 2009;46: 387–98.
34. • Meana M. Elucidating women's (hetero) sexual desire: definitional challenges and content expansion. J Sex Res. 2010;47(2–3):104–22. doi:10.1080/00224490903402546. **This thoughtful review provides a good understanding of issues related to women's sexual desire**.

[9] Along similar lines, unattractive characteristics might serve as "demotivators" for sex, at least insofar as a particular partner is concerned.

35. Mitchell KR, Wellings AJ, Graham C. How do men and women define sexual desire and arousal? J Sex Marital Ther. 2012;40(1): 17–32. doi:10.1080/0092623X.2012.697536.
36. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington: American Psychiatric Association; 2013.
37. Levin RJ. Sexual arousal: its physiological roles in human reproduction. Annu Rev Sex Res. 2005;16:154–89.
38.• Janssen E. Sexual arousal in men: a review and conceptual analysis. Horm Behav. 2011;59:708–16. doi:10.1016/j.yhbeh.2011.03.044. **This review provides a perspective on sexual arousal and desire in men that parallels various articles on women's sexual desire**.
39. Park JH, Rissman EF. The male sexual revolution: independence from testosterone. Annu Rev Sex Res. 2007;18:23–59.
40.• Levine SB. Reexploring the concept of sexual desire. J Sex Marital Ther. 2002;28:39–51. **Levine offers a different perspective on sexual desire, approaching the issue from many years of clinical experience**.
41. Perel E. Mating in captivity: unlocking erotic intelligence. New York: Harper Collins; 2006.
42. Rubio-Aurioles E. Why we should stop confusing hypoactive sexual desire disorder with low sexual desire/interest syndrome. J Sex Med. 2015;12:1989–91.
43. Joffe HV, Chang C, Sewell C, et al. FDA approval of flibanserin—treating hypoactive sexual desire disorder. New Engl J Med. 2016;374(2):101–4. doi:10.1056/NEJMp1513686.
44. Kama Sutra of Vatsyayana, 8th century. Translated from the Sanscrit by The Hindoo Kama Shastra Society, accessed at https://archive.org/stream/kamasutraofvatsy00vatsuoft/ kamasutraofvatsy00vatsuoft_djvu.txt.
45. Brooks G. Nine parts of desire: the hidden world of Islamic women. New York: Random House; 1996.
46. Rosen R, Brown C, Heiman J, et al. The female sexual function index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. J Sex Marital Ther. 2000;26(2): 191–208. doi:10.1080/009262300278597.
47. Boehringer Ingelheim Pharmaceuticals, Inc. http://www.issm.info/education-for-all/sexual-health-qa/what-is-the-decreased-sexual-desire-screener-dsds. 2010.
48. Clayton AH, Segraves RT, Leiblum S, et al. Reliability and validity of the sexual interest and desire inventory–female (SIDI-F), a scale designed to measure severity of female hypoactive sexual desire disorder. J Sex Marital Ther. 2006;32:115–35. doi:10.1080/00926230500442300.
49. Rosen RC, Riley A, Wagner G, Osterloh IH, Kirkpatrick J, Mishra A. The international index of erectile function(IIEF): a multidimensional scale for assessment of erectile dysfunction. Urology. 1997;49(6):822–30.

Part I of this article can be found at http://dx.doi.org/10.1007/s11930-016-0078-x.