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Sexual Incentive Motivation and Sexual Behavior: The Role of Consent

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Ellen Laan passed away on January 22, 2022. At the time of her death, a draft of the present contribution had been finished. However, A.Å. is solely responsible for the final manuscript.

Keywords

sexual behavior, sexual motivation, consent, sexual decision making, consent communication, sexual pleasure

Abstract

The generalized social concern with sexual harassment and nonconsensual sex makes it imperative to incorporate notions of consent in any analysis of human sexual interactions. Such interactions follow an ordered sequence of events, starting with the perception of a sexual incentive, followed by an approach to it, genital interaction, and eventually orgasm. Consent from the partner is needed at every stage. At some points in this chain of events, the individuals involved make cognitive evaluations of the context and predictions of the likelihood for obtaining consent for proceeding to the next phase. Processes such as communication of consent or lack thereof, sexual decision making, and interpretation of cues emitted by the partner are decisive. Increased sexual motivation may influence these processes. However, available data make it possible to ascertain that enhanced motivation has no, or at most minor, effects, thereby invalidating the old assumption that heightened sexual motivation leads to impaired control.

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INTRODUCTION

Adequate sexual functioning is important for general well-being and quality of life (Flynn et al. 2016, Stephenson et al. 2021). Indeed, sexual satisfaction is related to both physical and mental health in men and women alike (Gianotten et al. 2021, Sanchez-Fuentes et al. 2014). Therefore, improved understanding of the factors underlying the desire for and the satisfaction obtained from sexual activities is important not only for the search for treatments for those suffering from sexual dysfunctions but also for all those wishing to enhance their enjoyment of sex. The popularity of magazine columns and Internet sites providing advice on how to maximize one's own or a partner's sexual pleasure is evidence of the importance attributed to sexual gratification (Doring et al. 2017, Fowler et al. 2022). At the same time that sexual pleasure has become increasingly valued, the concern with unwanted sex has grown. While sex for centuries was seen as an activity in the service of reproduction, it has been transformed into a recreational activity providing an ephemeral pleasure (Laan et al. 2021). The many means of contraception available, and the widespread access to abortion on demand if these measures fail or were not employed, assure that sexual pleasure can be obtained independent from reproduction. In contemporary society, one assumes that sexual acts not only should bring pleasure to the participants, but also should be consensual. Thus, the obtainment of consent has become an integral part of any sexual encounter.

Sexual incentive stimulus: any stimulus predicting sexual reward or mental representations (fantasies) of such stimuli

An incentive motivational model may be used for understanding the sequence of internal and external events from the detection of a sexually relevant stimulus (also labeled a sexual incentive stimulus) and ensuing approach behaviors to postcoital affective responses (Ågmo & Laan 2022, 2023). This sequence is illustrated in **Figure 1**. At several points, the participants need to make a cognitive evaluation of the context as well as of the signs emitted by the partner or partners before deciding whether to proceed to the next stage. Among the signs emitted are some indicating consent to proceed or lack of consent. Either these signs are interpreted and acted upon by the partner or partners, or they are consciously or unconsciously ignored. The meaning given to the signs determines the decision to proceed, or not to proceed, with further approach and eventually

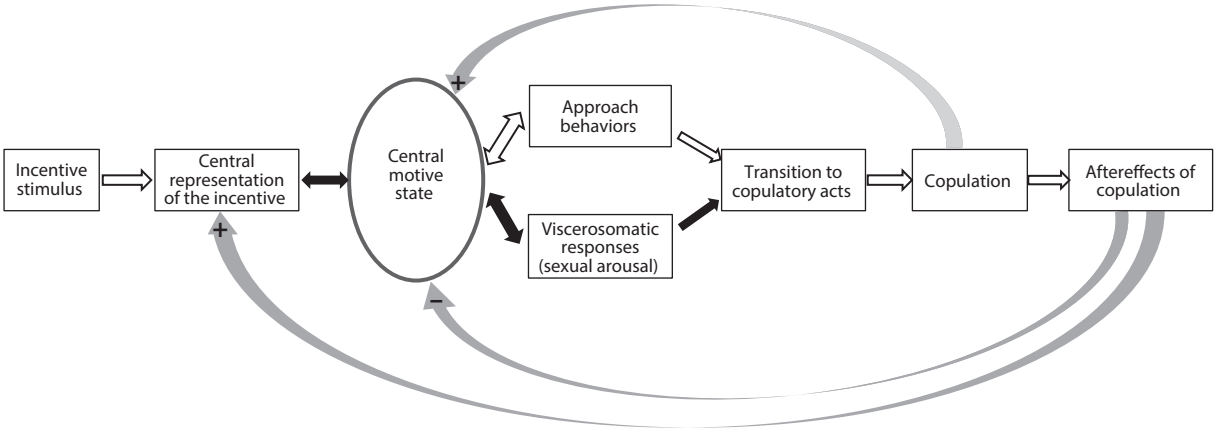

Figure 1

The sequence of events during a sexual encounter. A sexually relevant stimulus activates the central motive state, a hypothetical brain function, which incites the individual perceiving the stimulus to approach the individual emitting it. Likewise, nonvolitional viscerosomatic responses, among those penile erection or vaginal engorgement, begin. If there is a mental representation of a sexually relevant stimulus, no approach is activated. Instead, autoerotic activities may be initiated. When a real sexual incentive stimulus is present, approach may be followed by genital interaction and eventually orgasm. For an extensive description of the sequence of events, see Ågmo & Laan (2023). Figure adapted from Ågmo & Laan (2023) (CC BY 4.0).

sexual activity. It is often believed that there is a relationship between the level of motivation and the outcome of the cognitive processes among people deciding whether to proceed to the next stage in the sexual sequence.

Within the field of sexual motivation and its determinants, cognitive processes are sometimes given no or slight attention (e.g., Basson 2001, Everaerd et al. 2001). However, in the influential model proposed by Toates (2009), cognitive processes are thought to intervene at several stages, contributing to both activation and inhibition of sexual motivation. Similar proposals have been made in other motivational models based on the supposition of a balance between excitatory and inhibitory systems (e.g., Bancroft et al. 2009, Perelman 2009, Toates 2022). Although interesting, these accounts of sexual motivation are unnecessarily complex. Evidence shows that there is no need to assume the existence of any separate inhibitory system (Ågmo & Laan 2023). Furthermore, the notion of consent has completely failed to find a place in any of these models of sexual motivation. This absence may be related to the fact that consent has attracted scholarly interest only during the last couple of years. A simple search, crossing the keywords sexual and consent or consensual, shows an exponential growth in the number of publications from the year 2000 to the year 2021 (**Figure 2**). The present review integrates recent findings concerning consent with the incentive motivational approach to sexual motivation.

Whereas the importance of consent for engaging in partnered sexual activity has been firmly established in the legal and moral fields, little scholarly attention has been paid to the interactions between the mostly unconscious processes of sexual motivation and the cognitive evaluation of signs expressing consent, or the lack thereof, for being sexually approached and eventually for initiating genital interaction. The dynamics of the processes of wanting sex (sexual motivation) on one hand and of consenting to have sex on the other hand are, in fact, only partially known. However, recent progress in the field of sexual motivation as well as in the understanding of the decision making behind giving or refusing consent makes it possible to integrate the motivational and cognitive processes underlying sexual motivation. A summary of this emerging field is the main purpose of this review article.

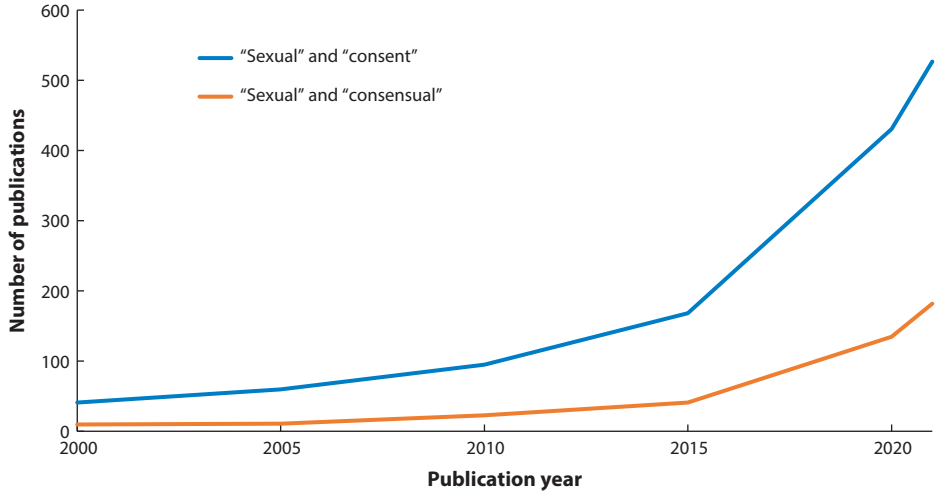

Figure 2

The number of publications from 2000 to 2021 retrieved after search in the Clarivate® database with the keyword "sexual" crossed with the keywords "consent" or "consensual."

Some speculations about why consent has become of paramount importance in sexual interactions precede a discussion of the communication of consent or the lack thereof. Finally, we analyze the main issue of the present contribution: the interaction among motivation, consent, cognitive evaluations, and sexual decision making. The principal conclusion is that heightened sexual motivation has slight or no deleterious effects on any of these processes. It may even sharpen the capacity to detect signs of no consent.

CONSENT

Why Consent, and Why Now?

The essential role of consent in any sexual interaction has already been discussed many times. However, any explanation as to why consent has become so important has not been offered. We intend to do so here.

Over centuries, if not millennia, women have been equated to a piece of property, owned first by the father and then by the husband. Having unauthorized sex with that property degraded it and was regarded as an offense against the father or, if the woman was married, against her husband. In this context, "unauthorized" was usually understood to mean sex outside of marriage. Within marriage, the husband was entitled to have sex with the wife at any time, since he was the property owner. Whether the wife consented was irrelevant. As Augustine (1990) eloquently states, "[P]rosecuting a husband for raping his wife made no more sense than indicting him for stealing his own property" (p. 561). In marital relationships, both wife and husband have granted an ongoing consent to sexual activity according to some sources (reviewed in Anderson 2003). This view is clearly expressed in the Code of Canon Law 1096 §1 of the Holy Roman Catholic and Apostolic Church.

> For matrimonial consent to exist, it is necessary that the contracting parties be at least not ignorant of the fact that marriage is a permanent partnership between a man and a woman, ordered to the procreation of children through some form of sexual cooperation. (**https://www.vatican.va/archive/cod-iuris-canonici/eng/documents/cic_lib4-cann998-1165_en.html#CHAPTER_IV**)

The parties expressing consent to enter marriage must, according to this article of canon law, be aware of their obligation to procreate and, presumably, that procreation requires the specific sexual activity of penile–vaginal intercourse. A similar matrimonial obligation exists in other Christian churches, indeed in all Semitic religions. As long as religion remains influential in the Judeo-Christian and Islamic worlds, the notion of ongoing consent within marriage will persist among the orthodox.

With time, the notion of women as men's property lost popularity, and female consent started to acquire some importance. Social changes, such as the feminist movement and the associated rejection of many traditional male prerogatives (Coveney et al. 1984, MacKinnon 1982), have challenged the notion of women as objects in the service of men. A recent manifestation of this shift is the #MeToo movement (Green 2022). Sociologists may provide a more sophisticated and more complete analysis than can the present authors of why consent has become a requisite for sexual interactions.

Many societies require consent in some form or another, except for intramarital sex, not only for intercourse but also for all kinds of approaches and other acts to which sexual meaning can be imputed. Unwanted approaches or acts are often grouped under the label harassment.

Even though women have suffered unwanted sexual attention since the dawn of history, the term "sexual harassment" is said to have first appeared in a course on women and work at Cornell University in 1974 (Siegel 2003). It was later popularized in the title of a famous book (Farley 1978). Harassment has become an important social issue, and together with rape it has attracted much attention in fields such as law, sociology, psychology, and sex education (see e.g., Cortina & Areguin 2021, Raub et al. 2021), in addition to being a big issue on social media. In fact, contemporary Western societies, and many others, regard sexual approaches as acceptable only if consent from the approachee has been obtained in some way or another. Furthermore, additional consent must be obtained before converting a sexual approach into direct sexual activities involving genitals.

Definitions of Consent

The fact that nonconsensual sexual activities are considered criminal in many countries has obliged lawmakers to specify the meaning of consent. According to the British Sexual Offences Act 2003, Section 74, "[A] person consents if s/he agrees by choice, and has the freedom and capacity to make that choice" (**http://www.legislation.gov.uk/ukpga/2003/42/contents**). The Crown Prosecution Service elaborates on the issue in the following way: "Someone consents to vaginal, anal or oral penetration only if s/he agrees by choice to that penetration and has the freedom and capacity to make that choice. Consent to sexual activity may be given to one sort of sexual activity but not another, e.g., to vaginal but not anal sex or penetration with conditions, such as wearing a condom. Consent can be withdrawn at any time during sexual activity and each time activity occurs" (**https://www.cps.gov.uk/sites/default/files/documents/publications/what_is_consent_v2.pdf**). Scientists have also provided definitions of sexual consent. One example defines consent as "one's voluntary, sober, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context" (Willis & Jozkowski 2019, p. 1723).

There is no need to make a long list of the many definitions of consent provided by lawmakers and scientists. Any of those mentioned above can be considered adequate, although the scientific definition has the advantage of not being limited to penetrative sex.

A different issue that has attracted some attention, particularly on American college campuses, is whether consent needs to be affirmative (an explicit, verbal agreement) or if passive consent (not expressing disagreement) is enough (e.g., Ortiz 2019). Although important, this dispute is

not relevant for the present discussion. It may also be worthwhile to note that the utility of purely verbal consent has been questioned (Harris 2018).

A contentious issue is whether consent applies to a specific sexual encounter or whether it applies only to a specific event within an encounter. In the latter case, consent would be a process continuing throughout the sexual encounter (Humphreys 2004). The latter notion of consent is used throughout this review. Thus, human sexual approach and human sexual activities will be thwarted whenever any of the participants expresses a lack of consent. How often this situation occurs is unknown.

Whereas consent is part of any sexual interaction, the notion of reproductive or sexual coercion refers to behaviors limiting a woman's free choice with regard to sexual health, in a wide sense. Reproductive coercion is understood as male interference or impositions in decisions about pregnancy, birth control, or abortion (Grace & Anderson 2018, Pike 2023). These decisions are not immediately involved in mechanisms of sexual motivation, although it is quite possible that motivation is affected in women regarding themselves as victims of reproductive coercion. A reasonable prediction seems to be that motivation should be reduced. However, there are no data available that can confirm or deny this speculation. Nevertheless, it is important to clarify that the notion of reproductive coercion is different from the notions of forced consent or nonconsensual sex.

A few psychologists have divided consent into two parts: internal and external. Internal sexual consent comprises feelings of physical response, safety/comfort, arousal, agreement/want, and readiness; external sexual consent includes communication cues that may be explicit or implicit and verbal or nonverbal (Jozkowski et al. 2014). The peculiar notion of internal consent does not have any relevance for the present analysis of the relationship between the approachee's consent and the approacher's sexual motivation. It is the approacher's perception of the partner's consent that influences their motivational state, whereas the internal, uncommunicated state of the partner has no consequence. The notion of internal consent may have limited explanatory power.

Communication of Consent or Lack Thereof

According to the definitions of consent given above, it becomes crucial for the approacher to determine whether the approachee is consenting or not. Research has shown conflicting views on how consent or lack thereof is communicated. However, much data suggest that the consenting individual uses direct or indirect verbal expressions as well as direct and indirect nonverbal cues to communicate consent (reviewed in Fenner 2017). The relative role of verbal versus nonverbal cues is not entirely clear; that said, evidence has suggested that women prefer verbal over nonverbal cues, whereas men prefer the opposite (Richards et al. 2022). Some data also support the opposite view, that men are more likely than women to use verbal cues for expressing consent (Willis et al. 2019). Hall (1998) finds that the most common way to express consent is by refraining from any expression at all in response to the partner's actions.

The likelihood for expressing consent verbally depends on the kind of sexual activity to which an individual is consenting. Verbal consent for intimate touching (probably meaning touching the partner's genitals) is rarely given, whereas consent to anal sex is almost always verbal (Willis et al. 2019). It may be interesting to learn that the actors in pornographic movies communicate consent in the same way as is done during nonstaged sexual encounters (Willis et al. 2020). This may be of some importance because, for many young people, such movies have become the main source of sex education.

Even though it is interesting to know how consent to different behaviors and in different contexts is expressed, it is far more pressing to know whether these expressions are correctly interpreted by the partner or partners. In fact, they seem to be. Men and women understand their partner's communication equally well (Hickman & Muehlenhard 1999), and misinterpretation of

signals is rare, even in casual encounters (Beres 2010). Likewise, signs of a lack of consent, often called sexual rejection, are correctly interpreted by men and women in stable relationships (cohabitating for at least two years) as well as in dating encounters (Dobson et al. 2022, McCaw & Senn 1998). The fact that men accused of rape or sexual harassment frequently argue that they misunderstood the message from the nonconsenting party can be considered a kind of unfounded self-justification (Maruna & Mann 2006).

Researchers, particularly sociobiologists, have sometimes pointed out that men have a tendency to overestimate women's sexual interest (e.g., Haselton 2003). However, men in established relationships have been reported to underestimate their partner's sexual desire (Muise et al. 2016). Other observations suggest that both men and women provide accurate estimates of their partner's desire for sex (Elsaadawy et al. 2022, Perilloux & Kurzban 2015).

One's estimates of the partner's desire must be based on some cues, but none of the papers cited above mentions which cues. It may be assumed, though, that cues indicative of the level of sexual desire may also provide information relevant for the partner's consent to sexual activity. If these cues are correctly interpreted with regard to desire, they can be expected to be correctly interpreted with regard to consent.

This brief summary of consent communication serves to illustrate that the cues emitted by the participants in a sexual encounter are usually correctly interpreted by both parties. Some cues, of course, are more prone to misinterpretation than are others. For example, most men interpret women's participation in oral sex as a sign of consent for penile–vaginal intercourse, whereas women do not make the same assumption. Forty percent of women reported having performed, and 33% had received, oral sex without any intention of having subsequent intercourse (Wood et al. 2019). It seems that the women consented to oral sex as an alternative to having intercourse. There are other examples of ambiguous cues, but their existence does not mean that misinterpretation is a significant issue.

Before leaving this section, we must note that the fine-tuning of consent communication still remains unclear. The excessive reliance on self-reports and an exaggerated focus on trivialities (e.g., the use or nonuse of a condom) have hampered progress, particularly in adolescents (reviewed in Widman et al. 2022).

Motivational Consequences of Manifestations of No Consent (Rejection)

Even though lack of consent, i.e., sexual refusal, is correctly interpreted by the partner, sexual interaction is not necessarily interrupted. During a hookup, 32% of female partners having experienced refusal from the male partner turn to verbal sexual coercion rather than ending the interaction. The corresponding figure for the male partner having experienced rejection by the female is 12% (Wright et al. 2010). The reason for the discrepancy between men and women was suggested to be that men are habituated to rejection by women, whereas it is far more unusual for women to be rejected. Although interesting, this kind of observation does not provide any useful information with regard to the effects of perceived rejection on sexual motivation. The fact that the partner's refusal occasionally fails to end sexual interaction does not mean that motivation was increased, although it would suggest that the refusal failed to reduce motivation.

The observation that 15% of violent episodes between dating couples can be attributed to rejection (Makepeace 1989) does not tell us anything about the effects of rejection on sexual motivation. Likewise, the fact that about one-third of the male subjects in a study simulating a date responded to rejection with some kind of aggressive behavior can be explained by factors entirely unrelated to sexual motivation, including sexual dominance motivation (Woerner et al. 2018), whatever that might mean. Moreover, there are no known data suggesting that sexual motivation is expressed in the form of aggressive behavior.

Based on the supposition that stimuli emitted by potential sexual partners can have positive incentive value only if predicting sexual reward (Ågmo & Laan 2023), one could predict that rejection of initiatives to approach or to initiate genital interaction would alter the perception of the partner from a potential sexual incentive to an unlikely sexual incentive. This shift should reduce the incentive value of the stimuli emitted by the partner, and sexual motivation should be correspondingly reduced (Bindra 1978). Thus, our prediction of the consequences of rejection or other expressions of lack of consent is that sexual motivation is immediately reduced. Unfortunately, we have no direct experimental evidence for this attractive proposal. Questionnaire studies of the reactions to sexual rejection have shown that typical responses are negative emotions of various kinds (Kim et al. 2019). Such emotions are probably related to reduced rather than to enhanced sexual motivation. The small proportion of people exposed to sexual rejection that persists with sexual advances may belong to the minority not responding with negative emotions.

Sexual reward: a hedonic state produced by mechanical stimulation of the genitals or by mental representations (fantasies) of such stimulation

Affirmative consent: a knowing, voluntary, and mutual decision among all participants to engage in sexual activity

Erection: penile tumescence caused by blood filling the corpora cavernosa in the penis

Consent and Sexual Pleasure

The transformation of sex from a reproductive to a recreational activity has profound social consequences (Berdychevsky & Carr 2020) and may require an altered focus in sex education (deFur 2012). For example, sexual pleasure has become an important issue in discussions of public health (Mitchell et al. 2021). The World Association for Sexual Health has recently issued a Declaration on Sexual Pleasure (Coleman et al. 2021) in which it is maintained that sexual pleasure is a fundamental human right. Among the requirements for obtainment of this pleasure is self-determination and consent. Therefore, all those engaged in sexual acts must be so engaged by their own will. This concept is not unique to sex. Moral principles addressing individual rights and freedoms coincide in proposing that human activities involving others require consent in one form or another (for an excellent overview, see Müller & Schaber 2018). In the specific case of sex, there is a widespread belief that consent is not only a moral obligation but also a requisite for obtaining pleasure, i.e., for making sex fulfill its purpose, and thus forced participation in sexual acts is incompatible with sex as a source of pleasure (e.g., Fava & Fortenberry 2021). Studies also show that women's sexual pleasure at the last sex event is related to consent as evaluated by questionnaires (Jozkowski 2013, Satinsky & Jozkowski 2015). Moreover, Willis et al. (2021) have reported that participants in a sexual encounter were more likely to experience orgasm if their partner used explicit verbal consent. Indeed, evidence indicates a strong relationship between explicit, affirmative consent from the partner and one's level of sexual satisfaction (Javidi et al. 2022). Manifestations of consent from the partner seem to be an important determinant of the enjoyment of sex, exactly as predicted by the World Association for Sexual Health (Coleman et al. 2021).

Against this assertion, we note that sexual pleasure does not always require voluntary participation in sexual acts (see the sidebar titled Nonvolitional Sexual Responses). When analyzing the mental experiences of rape victims, Saint Augustine of Hippo pointed out that *voluptas* (physical pleasure) does not implicate *voluntas* (will, consent). Consequently, women having felt pleasure during rape had no reason to feel ashamed (Webb 2013). The more than 1,500-years-old pastoral insights of Saint Augustine have been confirmed in clinical studies. Some rape victims have indeed reported that they experienced orgasm during the forced sexual interaction (Levin & van Berlo 2004). Even anal penetration during male–male rape can lead to erection and ejaculation in the victim (Bullock & Beckson 2011). It is well known that consensual anoreceptive sex can lead to orgasm (Branfman & Stiritz 2012), but it may appear strange that coerced sex can also have this effect. However, more recent data reinforce the notion that involuntary sexual activity can lead to the experience of orgasm. In a nonrandom sample of women, 24.7% of the participants reported orgasm during coerced sex (Chadwick et al. 2022). However, all the cited accounts of sexual pleasure during nonconsensual sex are based on self-reports, and the reliability of such reports may

NONVOLITIONAL SEXUAL RESPONSES

Augustinus Aurelius (354–430), better known as Augustine of Hippo or Saint Augustine, was bishop of Hippo Regius (now Annaba, Algeria) from 396 until his death. He is considered one of the most important fathers of the Christian church. He made several comments on sexuality that reveal him as a penetrating observer. Among the facts he unveiled is the uncontrollability of sexual responses. A man may get an erection in contexts where it is entirely undesired, and erection may fail to appear when needed. Likewise, the experience of orgasm can be neither created nor inhibited by actions of the will. Saint Augustine contrasted orgasm to other physiological functions, such as defecating and urinating, two responses easily brought under the control of the will. The peculiarity of the uncontrollable sexual responses was interpreted as retribution for the original sin. Instead of the perfect harmony experienced in the Garden of Eden, a permanent flaw in human nature, *concupiscentia carnis*, making us obey carnal desires rather than the will of God, was implanted. Sexual encounters are the result of such carnal desires and remind us of the original sin, thereby functioning as a *poena reciproca*, a recurring punishment (Brown 1983, 1988; Schmitt 1983).

be questionable. Therefore, support from objective studies is needed before it can be concluded that nonconsensual sex can give rise to positive affect.

Indeed, experimental data confirm that women respond with the same level of vaginal lubrication to narratives depicting violent sex regardless of whether the activity was consensual. Men's penile response was far larger when violent sex was consensual than when consent was lacking (Suschinsky & Lalumière 2011). These observations show that descriptions of nonconsensual sex enhance sexual arousal, but this effect is not the same as inducing orgasm. Nevertheless, one of the requirements for orgasm, sexual arousal, is satisfied. There are no laboratory studies of orgasm during nonconsensual sex. Such experiments involving humans are considered unethical unless prior informed consent has been obtained.

The dissociation between consent and pleasure is easily explained, considering that the prewired connections between motivational mechanisms and genital responses as well as between genital stimulation and sexual motivation are unconscious and nonvolitional (Laan & Everaerd 1995). Mechanical stimulation of the genitals enhances activity in the motivational systems to such a degree that orgasm is activated without any intervention of the will (Ågmo & Laan 2022, 2023). The presence of sexual pleasure does not imply consent. However, some have argued that the experience of pleasure requires at least implicit consent. In fact, nonconsensual sex causing pleasure is rarely interpreted as rape (Hills et al. 2020, McCaul et al. 1990), even though it may fulfill the legal criteria for being judged as such. The insistence on the requirement of consent for obtaining pleasure ignores the prewired, unconscious, and nonvolitional connection between genital stimulation and the experience of positive affect (pleasure), as previously mentioned. Nevertheless, consent may further enhance sexual pleasure.

We also note that orgasm during rape does not make the experience less traumatic. Some women even report experiencing feelings of shame or guilt for having orgasmed against their will (Chadwick et al. 2022). Sexual activity normally needs to be consensual if positive affect is to be experienced. It could, perhaps, be maintained that sex without pleasure, hence without consent, is contrary to nature in the same way that fellatio or cunnilingus were, at one time, regarded as crimes against nature.

Vaginal lubrication: enhanced blood flow leading to increased pressure in the capillaries in the vaginal wall, pressing out water and small proteins

Implicit consent: granted by a person's actions (or silence or inaction) and the facts and circumstances of a particular situation

A Note on Sex Not Needing Consent

Humans like to expose themselves to unattainable sexual incentives. Both men and women dispense enormous amounts of money buying access to pornographic materials or attending shows in which other men and women perform sexual acts in the presence of spectators, for example.

Sexual behavior: any behavior providing mechanical stimulation of one's own or a partner's genitals with the aim of obtaining sexual reward

The number of pornographic websites in the United States has experienced a growth of ~14% per year during the last few years and is expected to attain sales close to 1.1 billion dollars in 2022 (IBISWorld 2022). Some time ago, the peep shows surrounding New York's Times Square attracted crowds paying a quarter for a short exposure to living human genitals (McNamara 1995). In all these cases, the cognitive evaluation of the sexual incentive stimuli exposed in movies or live porn shows must conclude that these stimuli can neither predict genital interaction nor consent to such interaction, simply because the incentives are unattainable. Because these incentive stimuli are nevertheless approached, we must assume that the simple exposure to sexual incentives has rewarding properties. One explanation is that the genital response produced by these stimuli, and the positive affect associated herewith (Allen et al. 2007), is sufficient for maintaining these apparently irrational behaviors. Another element making exposure to sexual incentives attractive is that there is no need to seek and obtain consent. Consequently, these stimuli can be enjoyed whenever desired, without any constraints.

It may be reassuring to learn that nonhuman animals are also strongly attracted to inaccessible sexual incentives. Male and female rats will approach and remain in the vicinity of a sexually active conspecific of the opposite sex, even though sexual interaction is impossible, for example because the animals are separated by a wire mesh or other kind of barrier. This behavior continues with undiminished intensity in test after test, even in animals that are never allowed to copulate (Ågmo 2003). The conclusion must be that exposure to a sexual incentive by itself is also rewarding in nonhuman animals. This experience sharply contrasts with exposure to other kinds of incentives. For example, whereas rats initially approach an inaccessible, attractive food stimulus, they do not remain in its vicinity. Sexual incentives may be unique in the way that simple exposure to them is rewarding, making them preserve their incentive value even in contexts where no direct interaction is possible. The mechanisms behind the rewarding effects of sexual incentives in nonhuman animals are not known, but some of the many visceral responses may be involved. An example of male rats' persistence in approaching a sexual incentive and the lack of persistence in approaching a food incentive is shown in **Figure 3**.

The heightened activity in the sexual central motive state caused by self-exposure to sexual incentives not only is intrinsically rewarding because of the genital response, but also may stimulate the individual to engage in solitary sex (masturbation). Anecdotes from the live shows mention that spectators frequently masturbated during the show. It also seems that self-exposure to sexual incentives, e.g., a pornographic movie, often precedes or accompanies masturbation (Johnson et al. 2019, McNabney et al. 2020). Finally, the "need to masturbate" is higher after exposure to pornographic materials than it was before such exposure (Laier et al. 2013). This elegantly shows that sexual incentives may enhance sexual motivation regardless of the emitters' availability for sexual activity. The enhanced motivation likely facilitates the decision to engage in masturbation, but there are no data to support this proposal. In rats, exposure to sexual incentives immediately before a test for sexual behavior enhances performance on the test, providing evidence for increased motivation (de Jonge et al. 1992, Hård & Larsson 1969).

Neither self-exposure to sexual incentives nor self-stimulation requires consent. This characteristic may underlie not only the popularity of pornography but also the fact that solitary masturbation is the most common of all sexual behaviors.

FACTORS AFFECTING THE LIKELIHOOD FOR CONSENTING TO SEX

The Effects of Enhanced Motivation on the Cognitive Evaluation of Potential Sexual Incentives

The first part of the response to a sexual incentive is the detection of the stimulus, followed by conscious sustained attention to it. These events are associated with cognitive evaluation of the

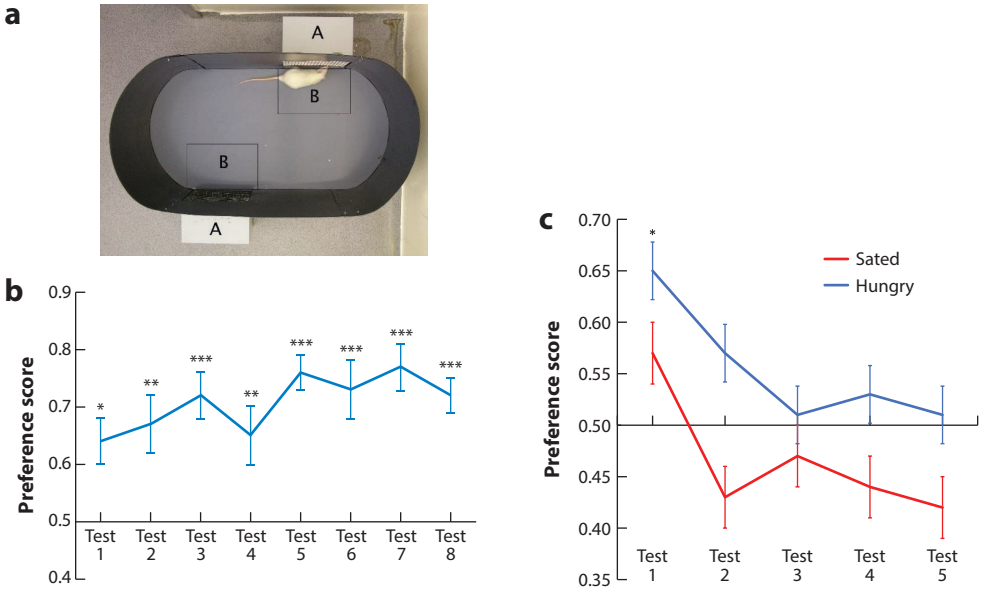

Figure 3

Approach to inaccessible incentives. (*a*) The experimental setup. Incentive stimuli are located in the lateral cages marked A in the picture. These cages are separated from the large arena by a double wire mesh, making any physical contact with the incentive impossible. The zone adjacent to each incentive is marked B in the figure. The preference score [(time spent in a zone adjacent to the cage containing the target incentive) / (that time + the time spent in the zone adjacent to a neutral incentive)] is the measure of motivation. A score of 0.5 means that there is no motivation, whereas a score of 1 is maximal motivation. (*b*) Male rats' approach, expressed as preference score, to an inaccessible, sexually receptive female (sexual incentive) and another male (social incentive) during eight consecutive tests. There was no reduction in the preference score, showing that the sexually receptive female preserved her incentive properties in test after test. (*c*) Preference score obtained in hungry or sated male rats when the incentives are a standard food pellet (food incentive) and an empty cage (neutral incentive) during five consecutive tests. The hungry males approached the inaccessible food incentive only at the first test, whereas the sated rats never approached that stimulus more than they did an empty cage. Food deprivation lasted for 20 h before each test. All these data are from unpublished studies performed by students in the Ågmo laboratory. For further details of the motivation test, see Ågmo (2003). *, different from no preference (a score of 0.5), $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

stimulus. An elegant study evaluated the electroencephalographic response to sexually relevant stimuli compared with less relevant stimuli. A sexually relevant stimulus was a picture of an erect penis, whereas a less relevant stimulus was a picture of a flaccid penis. The P300 response was larger for the sexually relevant stimulus than for the less relevant stimulus, whereas both control stimuli, a bent versus an outstretched arm, produced the same magnitude of response (Huberman et al. 2023). Many older studies have shown that sexually relevant stimuli attract larger processing resources than do nonrelevant stimuli (reviewed in Ziogas et al. 2023), but neither those studies nor the Huberman et al. (2023) study evaluated how prior enhancement of sexual motivation might affect processing.

Researchers need to use approximations in the absence of data concerning how the processing of sexually relevant stimuli is affected by heightened activity in the sexual central motive state. One such approximation can be found in a study in which young men were exposed to a pornographic movie segment immediately before solving the Tower of Hanoi task. This task is considered to represent frontal lobe–dependent executive functions. Although the activated

sexual central motive state did not alter performance on the task, several changes were found in the electroencephalogram recorded during the task. Decreased synchronization between prefrontal areas and increased synchronization between parietal and prefrontotemporal areas in the sexually aroused young men suggested that sexual arousal modified the allocation of processing resources needed for the frontal task (Amezcua-Gutiérrez et al. 2017). Similarly, young men's and women's performance on the Wisconsin Card Sorting Test was not affected by exposure to sexual incentives (Ruíz-Díaz et al. 2012). Some other observations support the notion that enhanced sexual motivation does not affect performance on cognitive tasks such as problem-solving, whereas working memory is improved (Au & Tang 2019). Data also show that sexual arousal, induced by a pornographic movie, reduces the practice effect in a battery of tests of executive functions in young men (Suchy et al. 2019). It is certainly interesting that the effect of practice was reduced, but it would be still more interesting to learn whether executive functions per se were modified. Absent this information, we have no reason to believe that an active sexual central motive state would impede the evaluation of cues emitted by the potential partner or of the appropriateness of the context for engaging in sexual approach and eventually for genital interaction. Likewise, because executive functions are unaltered or even improved by enhanced sexual motivation, the capacity to interpret signs of consent or no consent should not be reduced when sexual motivation is high. The last proposal will be substantiated in the following section.

The Effects of Enhanced Motivation on the Perceptions of Signs of Consent or No Consent

Whereas enhanced sexual motivation fails to affect cognitive functions, contradictory findings have been reported with regard to the effects of increased motivation on the perception of something called sexual willingness. In a study illustrating the use of this concept, single heterosexual men were exposed either to an arousal-enhancing event (writing about an extremely arousing sexual interaction, a procedure often used in studies in humans) or to a neutral event (writing about the conversation around a coffee table) and then asked to rate the degree to which a series of female behaviors indicate willingness to engage in sex. Sexual arousal had strong effects on the young men's ratings of female willingness. More explicitly, the men were exposed to statements such as "she touches a man's bare genitals," "she sends a man nude pictures," or "she lets a man touch her breasts through her clothes" and were then asked to rate these statements on a Likert scale ranging from 1 (this behavior does not at all mean that she wants to have sex) to 7 (this behavior definitely means that she wants to have sex) (Livingston et al. 2022). The average rating of 25 statements of the kind mentioned here was higher in the arousal condition than in the control condition. If willingness is equivalent to consent to sex (Willis & Smith 2022), these results could be interpreted as showing that enhanced motivation favors the interpretation of female cues as indicating consent.

Rather than enhancing the activity in the sexual central motive state by making the subjects write stories with sexual content, the central motive state could be made more active by enhancing the quality of the incentive stimulus. According to the sexual incentive motivation model, stimuli with high incentive value enhance activity in the central motive state more than do stimuli with low incentive value. In a recent study, the attractiveness of the female targets was varied, and young men were asked to rate female willingness to engage in sex. Predictions based on the sexual incentive motivation model were confirmed because a highly attractive female was rated to be more sexually willing than a nonattractive female (Rerick & Livingston 2022). The results of this study reinforce the notion that high sexual motivation alters men's perception of female willingness. If willingness equals perceived consent, then the sexually excited men would be more prone to interpret female cues as signs of consent.

In contrast to the studies mentioned above, data have shown that enhanced sexual motivation has only a marginal effect on single men's rating of female willingness and no effect in men in a stable relationship (Rerick et al. 2020). In view of the contradictory results, it seems unlikely that sexual motivation has any major effect on the perception of cues expressing willingness. If it had, then data would be expected to be more consistent between experiments.

The studies mentioned in the preceding paragraphs evaluated the effects of heightened sexual motivation, i.e., heightened activity in the central motive state, on the perception of signs indicative of willingness, probably under the assumption that willingness is equivalent to consent. Perhaps the interpretation of signs of no consent is far more important than the interpretation of signs of consent. Consequently, it is crucial to determine the effects of enhanced sexual motivation on one's perception of no consent. An extremely interesting study shows that heightened sexual motivation (induced by erotic audiotape), contrary to predictions, leads to improved perception of lack of consent (Benbouriche et al. 2019). Provided that perception of the partner's lack of consent is associated with respecting the partner's wish for no further sexual interaction, this study suggests that enhanced sexual motivation actually increases the effectiveness of expressions of no consent. Excuses for failing to respect expressions of no consent employing the "heat of the moment" argument do not seem to have any solid scientific basis.

Among the many prejudices concerning the consequences of heightened sexual motivation is the notion that high motivation reduces the importance attributed to consent. This does not seem to be the case, though. When sexual arousal was enhanced in young men and women by asking them to write a narrative with sexual content, their opinions concerning the importance of consent did not change (Rerick et al. 2022).

Thus, heightened activity in the sexual central motive state likely has negligible effects on the perception of signals indicative of consent, whereas the perception of signals indicative of no consent may be improved. Furthermore, enhanced motivation leaves unaltered the importance attributed to the obtainment of consent. These conclusions are based on data from a rather limited number of experimental studies. They might appear to contradict common beliefs, but experimental data carry far more weight than do other arguments.

The Effects of Enhanced Motivation on Sexual Decision Making

When it comes to factors affecting sexual decision making, experimental data are limited to the effects of sexual arousal on the acceptability of certain behaviors or the willingness to use a condom. In a study that has become classic, subjects were asked several hypothetical questions, such as "Would you slip a woman a drug to increase the chance that she would have sex with you?" or "Would you keep trying to have sex after your date says no?" The frequency of the morally doubtful answers increased substantially in young men while masturbating compared with when they did not masturbate (Ariely & Loewenstein 2006). Moreover, the opinion about the use of a condom was far less favorable in the sexually aroused state than in the nonaroused state. Investigators concluded that decisions concerning sex were sensitive to the degree of sexual arousal in the way that constraints on sexual activity were loosened when sexual motivation was enhanced. This outcome is, in fact, exactly what would be predicted from the incentive motivation model described here.

The idea that sexual decision making is affected by heightened sexual motivation has received support from a large number of studies concerning the likelihood to engage in risky sexual behaviors or unsafe sex. Researchers have frequently found that increased motivation increases the likelihood for having this kind of sex (e.g., Shuper & Fisher 2008 and references therein). Further support for this notion comes from an unorthodox study showing that urgency to urinate enhanced sexual risk-taking in men and women, the effect being more consistent in men. Because

the increased urgency for micturition caused enhanced sexual arousal, the investigators concluded that the impaired capacity for rational decisions was due to this latter effect (Lee & Gillath 2022). The habitual conclusion from this kind of study is that sexual arousal impedes the capacity to make rational decisions with regard to sexual activities.

It would be interesting to know whether the effect of enhanced sexual motivation is specific for sexual decision making. One elegant study (Skakoon-Sparling et al. 2016) suggests that it is not. Enhanced sexual motivation increased the likelihood to make risky plays in a blackjack game in addition to having the expected effect on decisions concerning sexual activities. The next question is whether enhanced nonsexual arousal might affect sexual decisions. This does not seem to be the case because increases in general arousal caused by stimuli inducing anger or amusement fail to modify sexual decision making (Savio 2022), regardless of whether physiological or self-report measures of arousal are used. It appears that only events increasing sexual arousal stimulate risk-taking in sexual contexts, whereas nonsexual decisions are affected by both sexual and nonsexual motivation.

We must note that a complete lack of effect of sexual arousal on sexual decision making has also been reported. Reading sexually explicit materials enhanced sexual risk-taking (the likelihood for having unprotected sex) only after consumption of a substantial amount of alcohol. In the sober condition, arousal was ineffective (Ebel-Lam et al. 2009). This outcome was also confirmed in another study, in which pornographic movie fragments were employed for augmenting sexual motivation (Walters et al. 2022). This study also included women, which showed that the lack of effect is not specific to men. An intriguing observation is that increased sexual motivation induced by pornographic movie fragments fails to affect sexual decision making (having or not having unprotected sex) when the level of motivation is evaluated by means of penile and vaginal responses, whereas subjective arousal, based on self-report, was associated with a higher probability of unprotected sex (George et al. 2009). Because the genital responses are exquisite expressions of the activity in the sexual central motive state, this study strongly suggests that the level of sexual motivation is unrelated to the capacity to make rational decisions, at least as far as the use of a condom is concerned.

The Notion of Token Resistance

Token resistance is usually defined as an expression of nonconsent when sexual interaction is desired. It was originally proposed that token resistance was typical of women (Muehlenhard & Hollabaugh 1988), an assumption that has turned out to be false. Data show that more American men than women have displayed token resistance in a sexual encounter (Sprecher et al. 1994). Furthermore, when men and women were asked to evaluate their perception of the use of token resistance, both men and women reported that they perceive men to use token resistance more than women do (Emmers-Sommer 2016). In addition to a gender difference with regard to the perceived frequency of use, there is also a gender difference with regard to the purported aim of showing this kind of scripted refusal. Women use it to protect their reputation of decency, whereas men believe that feigning disinterest in sex enhances the female partner's sexual arousal (Muehlenhard 2011).

Evidence suggests that belief in token resistance modifies the interpretation of cues that indicate no consent (Shafer et al. 2018). Being convinced that the partner's expressions of a lack of consent should not be interpreted as such may reduce one's sensitivity to signs of refusal. In fact, young men with a stronger belief in token resistance were less sensitive to verbal refusal than were those with a weaker belief (Osman & Davis 1999).

The effects of enhanced sexual motivation on the propensity to attribute token resistance to a potential partner have been evaluated. Sexual arousal increased women's belief in the occurrence

of token resistance in other women, whereas arousal lacked effect on men's belief in female token resistance (Rerick et al. 2022). It is noteworthy that a larger proportion of women than of men endorsed the notion that females show token resistance (34% of women versus 26% of men in the nonaroused condition; 43% of women versus 33% of men in the aroused condition). There was no effect of arousal on beliefs about male token resistance. The modest effect of increased sexual motivation on women's belief that the partner shows token resistance is probably inconsequential. Because belief in token resistance has been regarded as a predictor of the use of sexual coercion, our conclusion weakens the intuitive hypothesis that enhanced sexual motivation leads to an increased likelihood of coercive sex.

Consent to Unwanted Sex

The opposite of token resistance is expressing consent to unwanted sex. Many reports suggest that women are far more likely than men to express consent to sex even in the absence of an active sexual central motive state (Impett & Peplau 2003, Walker 1997). Reasons for doing so range from avoidance of coercion (Katz & Tirone 2010), to a desire to sexually please a partner (Muise et al. 2013), or simply a desire to improve the relationship (Impett et al. 2020). The desire to express intimacy with a partner or to improve or even save a failing relationship, for example, must be activated by corresponding central motive states. Such nonsexual motive states could perhaps interact with the inactive sexual central motive state, eventually increasing activity in the latter to such a degree that sexual behavior could be activated. Unfortunately, the interaction between different central motive states is poorly known, and little, if any, experimental data are available in humans.

In rodents, however, the presence of nonsexual incentives during a sexual encounter fails to alter sexual behavior (Hawkins et al. 1988, Kaplan et al. 1992, Saito et al. 1999), suggesting that the sexual central motive state is neither disturbed nor reinforced by the presence of other active motive states. This finding would mean that a desire to please the partner or improve the relationship does not enhance sexual motivation. A consequence of the absence of effect on the sexual central motive state is that nonsexual central motive states must determine whether consent to sex is given. However, the instrumental use of behavior patterns usually being part of sexual interaction in the absence of an active sexual central motive state cannot be considered as belonging to the realm of sexual behavior (Ågmo & Laan 2023). Transactional sex, i.e., sex with the explicit or implicit purpose of obtaining rewards other than sexual pleasure, needs to be understood in other terms, and the decision to engage in it may obey mechanisms different from those operating in genuinely sexual interactions. Moreover, the consent given to such acts may depend on factors quite different from those operating in nontransactional sex. For example, a prostitute's decision to consent to sex may be entirely determined by the size of the monetary reward offered rather than by prediction of the amount of sexual pleasure to be obtained.

THE FUTURE OF CONSENT

The role of consent in sexual interactions is not a scientific issue but a social issue. Scientists may try to understand the dynamics of the processes behind the expression of consent, or the lack thereof, and try to elucidate the factors determining the likelihood for giving consent, among other things (Flecha et al. 2020, Muehlenhard et al. 2016). The present review has aimed to identify the basic elements that should be taken into account and outlined the current understanding of these elements. The analysis of the sequence of events constituting sexual behavior, and the motivational systems determining the likelihood of the display of these elements, was fundamental to this endeavor. Without a clear picture of the nature of sexual interaction, it is impossible to situate consent in a meaningful context.

Sexual approach behavior: any activity leading to the establishment of physical proximity and body contact including activities permitting to attain consent for approach

Once having identified and evaluated a stimulus, humans may initiate approach behavior. This behavior requires one to obtain consent. Sexual harassment is sexual approach behavior without prior consent. There is an intense discussion among specialists as well as non-specialists with regard to the capacity to provide unequivocal signals of consent to approach and about the conditions under which the approacher will correctly perceive and respect these signals. Nevertheless, data show that both men and women easily emit the required signals, and they are reasonably apt to interpret them when perceived. The popular myth that enhanced sexual motivation obscures one's perception of these signals does not appear to be supported by experimental data.

Those concerned with sexually transmitted diseases are eager to find out how some factors, for example the use of drugs and alcohol, affect the decision to engage in risky sexual behaviors. Of more interest may be whether such factors affect the capacity to interpret and respect signs of consent. Available data clearly suggest that these capacities are little affected, whereas risky sexual behaviors may be more likely after alcohol or drug consumption. The notion of risky behavior is based on moral considerations, and whether to engage in it may be a matter of personal taste far more than a scientific issue. As long as the capacity to understand and respect signals of consent is not jeopardized, which it does not seem to be, the combination of sex and drug/alcohol use can be regarded as unproblematic with regard to the capacity to perceive both consent and no consent. Note, the combined indulgence in sex and alcohol is the rule rather than the exception among adolescents.

This review should have made clear that the research field of sexual consent is in possession of all the basic elements needed for an acceptable understanding of the process of consent to sexual approach and interaction. There are of course still aspects that might benefit from more observational and experimental data. It is doubtful, though, whether more data from online questionnaires can be of any help. However, rather than investing efforts in the acquisition of more knowledge about the mechanisms of expressing and interpreting expressions of consent or no consent, it may be useful to try to modify the social scripts directing human sexual interactions.

SUMMARY POINTS

1. Partnered sexual activities, such as fellatio or penile–vaginal intercourse, are always preceded by approach behavior in some form or another.
2. Active sexual motivation is a requisite for the display of sexual approach behaviors and eventually genital interaction.
3. Both sexual approach behaviors and genital interaction are socially acceptable only if consent has been obtained from all participants.
4. There are many forms of consent, and the most common way to express consent is to make no expression of lack of consent.
5. Perhaps masturbation is the most common of all sexual activities because it is the only way to obtain orgasm without asking for consent.
6. High levels of sexual motivation do not seem to negatively affect the capacity to interpret a partner's expression of consent or lack thereof.
7. The level of sexual motivation may have some minor impact on sexual decision making, such that more risky decisions are made when motivation is high.
8. Consent to unwanted sex, transactional sex, does not obey the same rules as consent to sex for the obtainment of pleasure.

FUTURE ISSUES

1. Sex differences in the propensity to ask for, as well as to give, consent need to be further studied, in light of social changes in standard sexual scripts for men and women.
2. The study of sexual decision making needs to abandon its obsession with the use, or lack of use, of condoms and include experimental conditions other than alcohol or drug consumption.
3. To understand the subtleties involved in the communication of consent, experimental procedures other than online or homemade questionnaires must be used.
4. The consequences of expressions of no consent (sexual rejection) need to be further studied, particularly with regard to the partner's response, using more ingenious procedures than self-reports.
5. The interaction between sexual and other motives, such as improving relationship quality or pleasing the partner, with regard to decisions to consent to sex is severely understudied.
6. Despite its limitations, current knowledge is sufficient for designing and evaluating sex education programs to transform the obtainment of consent from an external obligation to an intrinsic part of any sexual encounter.

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