

How does sexual deviance develop?

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English Summary

Chapter 1

Sexual deviance is common. It is estimated that nearly half of the people has at least one deviant sexual interest, and about a quarter of the people has ever engaged in deviant sexual behavior. Sexual deviance can be defined as a deviation from various norms. It is mostly defined by social norms, in which society decides what is nonnormative, and legal norms, in which the law determines what is nonnormative. This thesis focuses on deviant sexual *interests* and uses sexual deviance as an umbrella term encompassing interest, behavior, preference, fantasy, or urge. We adopted a broad definition of deviant sexual interests, including sexual interest in illegal as well as in itself “harmless” but unusual behaviors.

In essence, sexual deviance is not problematic. Sexual deviance can, however, be problematic if it negatively affects health or quality of life, or acts as a risk factor for sexual offenses. It is unclear how often deviant sexual interests have a negative life impact or lead to sexual offenses. About two-thirds of the people convicted for sexual offenses have some level of deviant sexual interests. That means that about one-third of the sexual offenses is not associated with deviant sexual interests.

To reduce suffering or prevent sexual offenses, it can sometimes be necessary to address sexual deviance in treatment. Treatment to prevent sexual offenses should focus on risk factors related to the offense behavior and adopt a cognitive-behavioral approach. This means that sexual deviance must be targeted in treatment if it is an individually relevant risk factor for sexual reoffenses. Current treatment may, however, not be optimal, not least because it is unclear how sexual deviance develops. Assumptions about the development of sexual deviance shape the way we approach it. Therefore, this thesis focuses on the question: how does sexual deviance develop?

Chapter 2

Chapter 2 presents a systematic review to theories on the development of deviant sexual interests. We conducted a systematic search of the databases PubMed and APA PsycInfo (EBSCO). Studies were included when they discussed a theory regarding the etiology or development of sexual deviance. Included studies were assessed on quality criteria for good theories, for instance, regarding testability or explanatory value. Common etiological themes were extracted using thematic analysis. We included 49 theories explaining sexual deviance in general as well as various specific deviant sexual interests, such as pedophilia (children) and sadism/

masochism (inflicting/receiving pain). Few theories ($k = 7$) were of acceptable quality. These studies indicated that deviant sexual interests may develop as the result of an interplay of various factors: excitation transfer between emotions and sexual arousal, problems with “normative” sexuality, conditioning, and social learning. Neurobiological findings could not be included as no acceptable quality neurobiological theories could be retrieved. The important roles of excitation transfer and conditioning designate that dynamic, changeable processes take part in the etiology of sexual deviance. These same processes could potentially be deployed to diminish unwanted deviant sexual interests.

The following chapters three through seven correspond with results from this review. First, the mechanism of excitation transfer was explored: the transfer of arousal from one emotion to another.

Chapter 3

Chapter 3 describes an experimental intervention to induce excitation transfer. In this pilot study, we investigated if we could induce excitation transfer between various emotions and sexual arousal in a lab setting with 30 male volunteers. We induced low-level sexual arousal in response to vibrostimulation and erotic film. This was done in four different emotional states (aggression/dominance, endearment, fear, disgust) and a neutral state. Sexual arousal was measured genitally using penile plethysmography, and via self-report. There was no mean group effect, possibly due to large interindividual variations. Still, 60% of the subjects showed more sexual arousal in at least one of the emotional states than in the neutral state. Excitation transfer was most prominent with aggression/dominance and least prominent with disgust. Genitally measured excitation transfer was strongly related to lower penile reactivity and to higher self-reported erotophilia (the love of erotica). This pilot study paves the way for further research into excitation transfer as a mechanism to increase the salience of stimuli that otherwise would not have been sexual in nature.

Chapter 4

Chapter 4 is a protocol of a proposed follow-up study with improved methodology. Following the prior pilot study, several adjustments were made to the study protocol, including a stronger emotional manipulation by using 360-degree emotional film clips with virtual reality glasses. Additionally, we aim to include a larger sample of 50 adult male volunteers with more diverse sexual interests.

The previous chapters showed that emotions can influence sexual arousal. Following this idea, it was investigated in the following chapters five and six if specific deviant

sexual interests that often co-occur can be divided into clusters. Such clusters might hypothetically be related to a certain emotion. Various deviant sexual interests that evoke disgust, for example, may co-occur more often (feces, urine, vomit).

Chapter 5

In chapter 5, we aimed to identify underlying clusters in a variety of deviant sexual interests. Participants rated 50 deviant sexual interests on a scale from 1 (very unappealing) to 7 (very appealing) in an anonymous, online survey. The 669 participants (61% female) came from various countries, mostly from the U.S.A. and the Netherlands. Using exploratory factor analysis, we investigated which interests often co-occurred in the total sample, and in women and men separately. Furthermore, we assessed self-reported sex life satisfaction, sexual outlet, and psychiatric symptoms (ADHD, depression, anxiety, and stress). Deviant sexual interests could be divided into five clusters that were largely comparable for women and men: (1) submission/masochism (receiving pain), (2) forbidden sexual activities, (3) dominance/sadism (inflicting pain), (4) mysophilia (dirtiness or soiled things), and (5) fetishism (objects or body parts). For women, having more deviant sexual interest related to more psychiatric symptoms and higher sexual outlet, whereas this relation was less explicit for men. Different clusters of deviant sexual interests may serve different underlying functions or motivations, for instance related to sexual and emotional regulation.

Chapter 6

Chapter 6 describes a replication study to examine whether the findings from chapter 5 could be generalized to the general population. An online, anonymous sample of 256 men, representative of the Dutch adult male population, rated 32 deviant sexual interests on a scale from 1 (very unappealing) to 7 (very appealing). Exploratory and confirmatory factor analyses assessed whether similar clusters would emerge as in the original study. Four slightly different clusters of sexual interests were found: (1) extreme, illegal and mysophilic sexual activities, for example, with children, force, vomit, feces; (2) light BDSM¹ without real pain or suffering, for example, being tied, blindfolding, spanking; (3) heavy BDSM that may include pain or suffering, for example, gagging someone, seriously hurting; and (4) illegal but lower-sentenced and fetishistic sexual activities, for example, exposing genitals, spying others having sex, plush animals, blow-up dolls. The representative replication sample was more sexually conservative and showed less sexual engagement than the original convenience sample. Integrating both studies, on a fundamental level, the sexual interest in light BDSM activities seems to be a relatively separate construct from

¹ Bondage and Discipline (BD), Dominance and Submission (DS) and Sadism and Masochism (SM)

extreme, forbidden, and mysophilic activities. Different emotional needs may underlie these clusters.

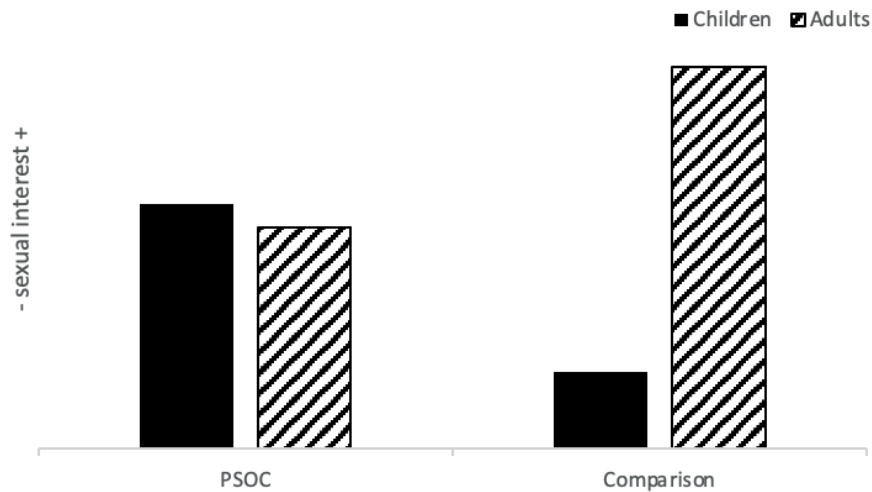
Subsequently, chapter 7 describes meta-analyses and a systematic review concerning the “normative deficiency” hypothesis. This hypothesis states that decreased sexual interest in normative stimuli contributes to increased sexual interest in deviant stimuli. This can be explored using studies that measure the sexual reaction to normative and deviant stimuli. While the normative deficiency is hypothesized to hold for any deviant sexual interest, research almost exclusively focuses on pedophilia, assessing sexual reactions to child and adult stimuli. Therefore, the normative deficiency hypothesis was investigated with respect to pedophilia in people who have committed sexual offenses.

Chapter 7

A sexual preference for children (pedophilia) is an important factor contributing to sexual (re)offending against children. Sexual interest in children is therefore frequently researched in people who have sexually offended against children (PSOC). Studies usually calculate a difference score in which the sexual response to adult stimuli is subtracted from the sexual response to child stimuli. These difference scores have shown more discriminative value between PSOC and non-PSOC groups than the responses to child stimuli alone. The current state of research makes it difficult to conclude if people with pedophilia are overly interested in children, or have lower interest in adults, or both. This is relevant knowledge in treatment for preventing sexual (re)offenses against children.

This study aimed to systematically analyze sexual interest in both children and adults in samples of men with pedophilia and comparison groups. We aimed to compare the absolute sexual responses to child stimuli and adult stimuli with each other. A total of 55 studies with 8,465 participants were included in four meta-analyses and a systematic review. Most included studies considered PSOC and not nonoffending pedophilic samples. About half of the included PSOC samples was presumed to be pedophilic based on clinical information. Firstly, the results indicated that PSOC with pedophilia did not have a clear sexual *preference* for children over adults: Their sexual response to children was equal to their sexual response to adults. Secondly, PSOC's sexual response to children was higher than comparison groups. Thirdly, PSOC's sexual response to adults was lower than comparison groups (see Figure 1).

Figure 1
Schematic Representation of Sexual Responses PSOC and Comparison Groups (Schippers, Smid, Hoogsteder, Planting, et al., 2023)



The current study circumvented the use of difference scores that are made relative to comparison groups. As such, we were able to conclude that, besides the traditional focus on sexual interest in children, the lack of sexual interest in adults may be a relevant factor in PSOC with pedophilia. More studies are needed to disentangle sexual interest in children from sexual interest in adults, while using carefully matched comparison groups that have similar demographic characteristics.

Relative to the previous chapters with fundamental research, chapter 8 reflects current clinical practice.

Chapter 8

Chapter 8 explored the prevalence and consideration of sexual deviance in outpatient treatment for sexual offending behavior. Sexual deviance was assessed in 198 adult clients with a combination of the Stable-2007 (Fernandez et al., 2014), DSM-5 (American Psychiatric Association, 2022), or client self-report. Preliminary treatment effects over the first year were assessed using the Stable-2007 in a smaller subsample. Two groups of clients could be discerned with different needs: a sexual deviance group (two-thirds of the clients) with more sexual preoccupation and sexual coping, and a group with more impulse control disorders (about one-third). Treatment content was similar for both groups, meaning treatment did not specifically target the different needs in the different groups. Preliminary positive

treatment effects were found for both groups, which seemed mostly driven by improvements in sexual self-regulation. Treatment more specialized towards the needs of the subgroups and including more behavioral techniques might have more pronounced effects.

Chapter 9 contains a general discussion in which the findings from this thesis were integrated.

Chapter 9

In chapter 2, it was theorized that an interplay of dynamic, changeable factors contributes to the development of deviant sexual interests. These include the transfer of arousal between various emotions ("excitation transfer"), a lack of sexual response to normative stimuli ("normative deficiency"), conditioning, and social learning. This can be integrated into an Incentive Motivational Model, which is a common approach in general sexology (Ågmo & Laan, 2022; Both et al., 2007; Toates, 2014). This model looks at sexual motivation as an emotional response to a sexually relevant stimulus. These stimuli are salient because they signal potential reward in the form of sexual arousal and gratification. Processing emotional stimuli causes activation of the emotion systems in the brain and prepares for behavioral action (LeDoux, 2012). Behavioral action may, for instance, consist of approaching the stimulus, ultimately resulting in sexual interaction, or entertaining a sexual fantasy, resulting in masturbation. Sexual arousal, and especially sexual gratification, are strong reinforcers, causing one to return to the sexual stimulus and strengthen its connection with sexual arousal even further (operant conditioning). Social learning may play a role when, for instance, approving peers reinforce certain behaviors or sexual partners introduce new sexual stimuli. Suggested neurobiological predispositions lie in the sensitivity for reward, the processing of visual cues, or the strength of the sexual reaction.

Smid and Wever (2019) explicitly apply the Incentive Motivational Model to sexual deviance using the mechanisms of excitation transfer and normative deficiency. Sexual arousal is tightly coupled with general, sympathetic arousal, which allows overflow between emotional arousal and sexual motivation (Ågmo & Laan, 2022). Some stimuli have strong emotional reactions, such as pain, humiliation, anger, or disgust. Through excitation transfer, the emotional reactions of such stimuli might overflow in sexual arousal, making the stimulus potent enough to induce sexual arousal or even sexual gratification. Repeated coupling of that stimulus and sexual arousal may eventually result in a stable sexual interest. A strong emotional stimulus to enhance sexual arousal is not necessary if the sexual motivation is already strong enough. Therefore, the normative deficiency hypothesis suggests that excitation

transfer might especially work for people who have no strong sexual motivation to normative sexual stimuli.

From the findings in this thesis, three concluding key statements were derived:

1. Deviant sexual interests seem malleable, to some extent;
2. Emotion can increase sexual arousal to deviant stimuli;
3. A normative deficiency seems related to deviant sexual interests.

Changeable factors contribute to deviant sexual interests. If changeable factors contribute to the development of deviant sexual interests, it does not necessarily mean that deviant sexual interests are changeable. Changeable factors can put into motion unchangeable processes. Despite a limited research base, there are some indications that deviant sexual behaviors, as well as interests, are changeable to some extent.

Emotion is one of the mechanisms to affect deviant sexual interests. Specific emotions and general mood states have shown to be able to increase or decrease sexual arousal. While emotions and mood may influence sexual arousal, the opposite is also likely true: Sexual behavior might improve negative mood states. If one wishes to reduce sexual deviance, it might be useful to look at the connection between emotions and sex in the individual. Being able to regulate emotions seems a useful tool to regulate sexuality.

Further research to normative deficiency as a developmental factor for sexual deviance should focus on two aspects: causality and generalization. First, does normative deficiency actually cause deviant sexual interests, and two, is this generalizable to other deviant sexual interests than pedophilia. Promising interventions to improve normative sexuality include healthy lifestyle changes, pharmacotherapy, sexological therapy, couples therapy, and reconditioning techniques. Further research as well as treatment efforts should take into account two things: the deviant identity and proper assessment of sexual interests. In the example of pedophilia that means: If people see pedophilia as part of their identity, this may obscure any residual sexual interest in adults. Proper assessment helps to differentiate sexual interest in children from sexual interest in adults.

A strength of this thesis is that it used various methods and samples from various populations. Additionally, we provided a useful framework to explain the development of sexual deviance. A limitation of the state of research in general and

some of the research in this thesis, is that it is largely limited to sexual offending behavior. Therefore, the findings can only be generalized to nonoffending populations with prudence.

Conclusion

Deviant sexual interests seem malleable, to some extent. The roles of excitation transfer and normative deficiency designate that changeable processes take part in the etiology of sexual deviance. These same processes could potentially be deployed to diminish unwanted deviant sexual interests. This is most relevant in treatment of people who have committed sexual offenses to reduce the risk of future reoffenses. It might also be informative for people who suffer negative consequences from their deviant sexual interests. More research is needed to explore which specific treatment techniques are effective in reducing sexual deviance. Improving emotion regulation and strengthening normative sexual interests are promising treatment options.