Every fifth boy and man is pedophilic or hebephilic

Abstract

A meta-analysis of all seven relevant phallometric studies reveals that 22% of normal men show greater or equal sexual arousal to child stimuli (individuals up to 13 years old) than to adult stimuli. Combined results of two of these studies reveal male prevalence rates of about 3% for pedophilia (mostly sexually aroused by prepubescents) and about 16% for hebephilia (mostly sexually aroused by pubescents). Details of these studies are described, and implications of the results for sexual science and society are discussed.

1. Introduction

Pedophiles are defined in this text as individuals who are primarily sexually aroused by prepubescents (generally 10 years old and younger) and hebephiles as those mostly sexually aroused by pubescents (generally 11 to 14 years old). There is no consensus in sexual science on how to define the words pedophile and hebephile, but in many phallometric studies (e.g. Freund et al., 1991a; Blanchard et al., 2009) and in the recent scientific debate leading up to the "Diagnostic and Statistical Manual of Mental Disorders, 5th Ed." (e.g., Frances et al., 2011), the words pedophile and hebephile were often defined and used in this or a similar way. A pedophile or a hebephile who does not act on his age preference does not transform himself into an ephebophile or teleiophile. In this text an ephebophile is defined as someone mostly sexually aroused by 15- to 17-year-olds, and a teleiophile as someone mostly sexually aroused by adults.

While the exact prevalence of pedophilia in the general population is often discussed in the scientific literature (Seto, 2007), the exact prevalence of hebephilia is rarely treated as a subject in its own right. Because of the heavy social stigma attached to pedophilia (Jahnke et al., 2013), people in surveys often hide their sexual interest in prepubescents and pubescents. In a recently published study, 99.1% of 305 male students from Canada claimed to be not even slightly sexually aroused by pubescents 12 to 14 years old (Dawson et al., 2014). This would appear to be highly inaccurate since there are many studies showing that men typically are sexually aroused by pubescents and even by prepubescents, albeit not as much as
by young adults (Malamuth, 1989; Freund et al., 1970; Quinsey et al., 1975; Crépault, 1980). In a study from 1980 cataloging erotic fantasies of men (Crèpault, 1980), 94 adult men were asked if they experienced various fantasies during intercourse or while masturbating. Sixty-six percent of men experienced the fantasy "scene where you initiate a young girl," and this fantasy was the 12th most common out of 46. Thus, many men find pubescent girls sexually exciting.

Male sexual arousal to prepubescents and pubescents is studied more reliably by phallometry. In a phallometric study a rubber ring connected to a computer is placed around the subject’s penis; the subject then views pictures of naked persons of different ages and sexes, and changes in the circumference of the erections caused by the different stimuli are measured. The results are then analyzed (e.g., erections caused by child stimuli are compared to those caused by adult stimuli). A meta-analysis of phallometric studies in general shows a high correlation ($r=0.66$) between subjective sexual arousal and measured genital arousal (Chivers, 2010).

In some published phallometric studies approximately 20-30% of a community sample of normal men exhibited sexual arousal to child stimuli greater than or equal to sexual arousal to adult stimuli (Firestone et al., 2000; Freund et al., 1991a). The results of these studies have been used to argue for the removal of pedophilia from the Diagnostic and Statistical Manual of Mental Disorders (Green, 2000). But are these results typical or unusual? And what do these phallometric studies say about the proportion of men who are pedophiles and hebephiles?

2. Method

We completed a literature search in 2013 to find all phallometric studies that met these criteria:

- Male sexual arousal to child stimuli and to adult stimuli$^1$ was measured;
- Subjects were "normal" men from the community (e.g., colleges, unemployment agencies, military, etc.), and not just "sexual offenders" nor members of any other sexually defined groups that might show atypical sexual arousal patterns;$^2$
- At least 10 participants' results were reported;$^3$
- The article was published between 1970 and March 2013;
- The article was published in English or German;

$^1$ The study of Quinsey et al. (1988) was not included in the analysis because the stimuli described only forced sex between children and adults.

$^2$ The study of Lang et al. (1988) was not included in the analysis because the researchers excluded men with a sexual interest in children.

$^3$ The study of Quinsey et al. (1976) was not included because it had only five participants, which means that one man had the value of 20 percent--which could distort the results of this study.
• Data were included to determine the proportion of men more or equally sexually aroused by children (up to 13 years) than by adults.  

Many articles and books about pedophilia, such as Green (2002) and Norlik (2010), discuss phallometric studies of the sexual arousal in normal men to child stimuli. By searching these and other publications and by following the phallometric studies found with an initial search in Google Scholar, we found approximately 10 phallometric studies of the sexual arousal in normal men caused by child and adult stimuli. At this stage of the literature search, we identified all phallometric studies of sexual arousal in normal men by child and adult stimuli published since 1970. Some did not include the proportion of men who were more or equally sexually aroused by children than by adults. In the next step, the databases PsycInfo and SSCI were used to see which publications cited these approximately ten studies and which studies these approximately 10 publications themselves cited or described. Newly found studies were followed in the same way in the two databases. In this way, we found 26 phallometric studies of the sexual arousal of normal men by children and adults (Barsetti et al., 1998; Chaplin et al., 1995; Earls et al., 1987; Fedora et al., 1992; Firestone et al., 2000; Frenzel et al., 1989; Freund et al., 1970; Freund et al., 1972; Freund et al., 1973; Freund, 1989; Freund et al., 1991a; Freund et al., 1991b; Grossmann et al., 1992; Hall et al., 1995; Harris et al., 1992; Haywood et al., 1990; Kuban et al., 1999; Lalumière et al., 1992; Marshall et al., 1986; Marshall et al., 1988; Quinsey et al., 1975; Renaud et al., 2010; Renaud et al., 2013; Rice et al., 2012; Seto et al., 2000; Wilson, 1998).

Where possible, we e-mailed the authors of these 26 studies and asked if they knew of any additional phallometric studies; however, this endeavor did not produce any additional studies. In March 2014 we found two additional studies (Abel, 1994; Seto et al., 2001) and checked them via PsycInfo and SSCI. Of the final 28 studies, seven offered information on the number or proportion of men more or equally sexually aroused by children than by adults (Seto et al., 2001; Firestone, 2000; Hall et al., 1995; Marshall et al., 1986; Fedora et al., 1992; Freund et al., 1991a; Seto et al., 2000).  

Most of the participants of the seven studies were recruited through advertisement and employment agencies, and tended to be college students, unemployed people, or men from the general community.  

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4 The age 13 was chosen because in Germany children are defined by law as people under 14 years old. This definition accords with popular use of the word children.

5 It is possible that the 16 men of the study of Seto et al. (2000) were partly or completely included among the 50 men of the study of Freund et al. (1991a). Seto e-mailed us on July 15, 2013 to say that without the data of the study from Freund et al. (1991a) he cannot determine if there is an overlap.

6 The relevant passages of the seven studies are: "(...) the majority were recruited from a local community college." (Seto et al., 2001); "The comparison group was recruited through an advertisement and paid a $50 honorarium." (Firestone et al., 2000); "Subjects were recruited via a newspaper advertisement placed in the sports section of the Sunday edition of a newspaper in a large city on two occasions. The newspaper advertisement read as follows: Earn $40 for participation in an experiment on human sexuality that will require a
3. Results

Table 1 shows details of the seven studies together with the information about the percentage of men more or equally sexually aroused by children up to 13 years old than by adults.
Table 1:
Phallometric studies indicating the proportion of normal men more or equally sexually aroused by children (up to 13 years old) than by adults

<table>
<thead>
<tr>
<th>Study</th>
<th>Study Title</th>
<th>% of men who were more or equally sexually aroused by children than by adults</th>
<th>Country</th>
<th>Number of men</th>
<th>Mean age of men</th>
<th>Kind of Stimuli</th>
<th>Age of children on Stimuli</th>
<th>Age of adults on Stimuli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seto et al. (2001): A Brief Screening Scale to Identify Pedophilic Interests Among Child Molesters</td>
<td>17,0%</td>
<td>Canada</td>
<td>112</td>
<td>28 years</td>
<td>Videoclips with audio-comment</td>
<td>5 to 11 years</td>
<td>Beginning to mid 20</td>
<td></td>
</tr>
<tr>
<td>Firestone et al. (2000): Differentiation of Homicidal Child Molesters, Non-homicidal Child Molesters, and Non-offenders by Phallometry</td>
<td>27,7%</td>
<td>Canada</td>
<td>47</td>
<td>33 years</td>
<td>Audio-stories</td>
<td>No information</td>
<td>No information</td>
<td></td>
</tr>
<tr>
<td>Hall et al. (1995): Sexual Arousal and Arousability to Pedophilic Stimuli in a Community Sample of Normal Men</td>
<td>29,4%</td>
<td>USA</td>
<td>80</td>
<td>38 years</td>
<td>Photos and audio-stories</td>
<td>Prepubescent girl or announcement &quot;child below 12 years&quot;</td>
<td>No information</td>
<td></td>
</tr>
<tr>
<td>Marshall et al. (1986): Sexual offenders against female children: Sexual preferences for age of victims and type of behavior</td>
<td>14,3%</td>
<td>Canada</td>
<td>22</td>
<td>34 years</td>
<td>Photos and audio-stories</td>
<td>Photos: 12, 13 and 14 years Audio-Stories: Men were asked to imagine their preferred age (3- to 14- years) or a different age was chosen</td>
<td>16 to 24 Years</td>
<td></td>
</tr>
<tr>
<td>Fedora et al. (1992): Sadism and other paraphilias in normal controls and nonaggressive sex offenders</td>
<td>18,3%</td>
<td>Canada</td>
<td>60</td>
<td>31 years</td>
<td>Photos</td>
<td>&quot;Prepubescent&quot;</td>
<td>No information</td>
<td></td>
</tr>
<tr>
<td>Freund et al. (1991a): Assessment of the sensitivity and specificity of a phallometric test: An update of &quot;Phallometric diagnosis of pedophilia&quot;</td>
<td>19,4%</td>
<td>Canada</td>
<td>50</td>
<td>26 years</td>
<td>Videoclips</td>
<td>5 to 8 years, 8 to 11 years and Pubescents (probably 12 to 13 years)</td>
<td>No information</td>
<td></td>
</tr>
<tr>
<td>Seto et al. (2000): The Discriminative Validity of a Phallometric Test for Pedophilic Interests Among Adolescent Sex Offenders Against Children</td>
<td>25,0%</td>
<td>Canada</td>
<td>16</td>
<td>20 years</td>
<td>Videoclips</td>
<td>5 to 13 years</td>
<td>Mid 20</td>
<td></td>
</tr>
</tbody>
</table>

7 27,6 years is the mean age of the complete control group of the study consisting of 112 men from the community and 94 “rapists”.
8 29,4% is the mean value of the arousal through pictures (32,5%) and audio-stories (26,25%).
9 In this study three of the 22 men (14,3%) were more or equally sexually aroused by 12-, 13- and 14-year olds than by adults and one man (4,5%) who was more or equally sexually aroused by 3- to 11-year olds than by adults. The first number 14,3% was used here although the stimuli included 14-year-olds because this value seems to be more relevant for the main question of this article (sexual aroused by children up to 13 years old).
10 In this study the men also saw pictures of children from the age of 3 to 11 years old. The mean value of the arousal caused by these pictures was compared to the arousal caused by pictures of adults, so this mean value was not helpful for the research question of this article (sexual aroused by children up to 13 years old) and was not used here.
11 In table 2 (Seto et al. (2000) p. 325) it is written that 3 of 16 men were mostly aroused by 12- to 13-year-old girls and that one man was mostly aroused by 12- to 13-year-old boys.
According to the mean value of the seven phallometric studies, 21.6% of men are more or equally sexually aroused by children up to 13 years old than by adults.

The mean value of the four studies requiring greater sexual arousal to child-stimuli than to adult-stimuli to be classified as pedophilic or hebephilic (Marshall et al., 1986; Fedora et al., 1992; Freund et al., 1991a; Seto et al., 2000) was lower than that of the three studies requiring greater or equal sexual arousal (Seto et al., 2001; Firestone et al., 2000; Hall et al., 1995) (19.3% vs. 24.7%). So by this analysis, approximately one out of every five men is pedophilic or hebephilic, while one out of every four is at least as sexually aroused by children up to 13 years old as by adults.

We do not know if men who are strongly sexually aroused by children are under- or over-represented in these studies (see chapter limitations below). Philip Tromovitch guesses that pedophilic men often try to avoid taking part in such studies to hide their sexual arousal pattern (O'Carroll, 2013). If so, there could be many more men in the male population who are strongly sexually aroused by children. It is also possible that people with greater sexual arousal by children are over-represented in these studies because they are more interested in studies about sexuality. Generally, volunteers in phallometric studies tend to be more sexually experienced, have more sex partners, experience less sexual shame, and are more curious (Plaud et al., 1999; Strassberg et al., 1995; Wolchik et al., 1985). Although the samples of the seven studies were constructed in different ways, the results of all seven studies are in the range from 14% to 29% (14, 17, 18, 19, 25, 28 and 29%) so the 22% mean value of the seven studies seems to be roughly correct.

Approximately 40-50% of men in prison because of sexual contacts with children 14 years or younger are more or equally sexually aroused by children than by adults (Seto, 2004). Since 22% of normal men are more or equally sexually aroused by children than by adults, many more – perhaps totaling 40-50% - are quite strongly sexually aroused by children up to 13 years. So for a man to feel sexual arousal for children up to 13 years old is not at all unusual.

**Percentages of pedophiles and hebephiles in the male population**

Two of the seven studies allow us to roughly estimate the percentage of pedophiles and hebephiles in the male population. Seto et al. (2000) used stimuli from the age groups 8-11 (prepubertal), 12-13 (Pubescents), and mid-20’s. Marshall et al. (1986) used stimuli from the age groups 3-11 (prepubertal), 12-14 (Pubescents), and 16-24. In these two studies the sexual arousal of a total of 38 normal men was measured. One of the 38 men was mostly aroused by children below 12 years old, six by pubescents 12 to 13/14 years old, and 31 by adults (Stimuli "mid-20's" or "16-24-year-
olds”). So according to the combined results, we calculated prevalences of approximately 3% for pedophilia, 16% for hebephilia, and 82% for ephebophilia/teleiophilia. Table 2 shows the results. In the study of Seto et al. (2000) as described, no adolescent stimuli were used so it is possible that one or more of the four men who are declared in table 2 as hebephiles was in reality an ephebophile.

Table 2:
Percentages of Pedophiles and Hebephiles in the male population
(Seto et al. (2000) and Marshall et al. (1986))

<table>
<thead>
<tr>
<th></th>
<th>Both studies (n=38)</th>
<th>%</th>
<th>Seto et al., 2000 (n=16)</th>
<th>%</th>
<th>Marshall et al., 1986 (n=22)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedophiles</td>
<td>1</td>
<td>3%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Hebephiles</td>
<td>6</td>
<td>16%</td>
<td>4</td>
<td>25%</td>
<td>2</td>
<td>9%</td>
</tr>
<tr>
<td>Ephebophiles/Teleiophiles</td>
<td>31</td>
<td>82%</td>
<td>12</td>
<td>75%</td>
<td>19</td>
<td>86%</td>
</tr>
</tbody>
</table>

Another phallometric study of "sexual offenders against children" (Blanchard et al., 2009) also found a much greater prevalence of hebephilic than pedophilic response among heterosexual offenders. A national survey of Finnish adults (Alonko et al., 2013) found sexual interest in persons 7-12 years old approximately five times more often than in persons 0-6 years old, and approximately six times more often in persons 13-15 years old than in persons 7-12 years old. So it appears that there are many more hebephilic than pedophilic men.

Most minor-attracted persons say that their age-preference already existed in their childhood or youth, and they knew about their age-preference in their childhood or youth (B4U-ACT, 2011). So not only is approximately one in five men pedophilic or hebephilic, but one in five boys is pedophilic, pre-pedophilic, hebephilic, or pre-hebephilic. (Pre-)hebephilic boys will recognize their sexual age-preference later than (pre-)pedophilic boys.

4. Conclusion

According to existing phallometric studies, approximately one in every five men is pedophilic or hebephilic. While many might find this surprising, individuals with sexual interest in children nowadays are motivated to hide it, and thus the occurrence of pedophilia and hebephilia appears to be much lower than it actually is. A similar historical phenomenon is seen regarding homosexuality: around 1860 it was believed by an expert that
approximately one man out of 10,000 was homosexual (Herzer, 1987). Today we know that the figure is closer to one man out of 30, and many more are bisexual (Savin-Williams, 2006).

5. Limitations

For several reasons, we know neither the exact prevalences nor relative proportions of men’s sexual arousal to children up to 13 years old and to adults. The main reasons are:

1) All seven phallometric studies described here come from North America, and six of the seven studies come from Canada. We do not know if the level of sexual arousal caused by children is the same in other areas of the world. Since the level of homosexual teleiophilic arousal appears to be similar worldwide (Diamond, 1993; Kuyper et al., 2009; LeVay, 1996, p. 63; Seil et al., 1995), it can be surmised that the level of sexual arousal of men to children and adults is similar worldwide, too.

2) The reliability and validity of the results of phallometric studies have been criticized (Marshall, 2014; O'Donohue et al., 1992; Hanson et al., 1998; Kingston et al., 2007; McAnulty et al., 1992; McConaghy, 1989; McConaghy, 1992; Quinsey et al., 1990). The principal criticism seems not to matter here because men from the community are free to participate or not in phallometric studies, and since results of the measurements do not have consequences for their lives, there is little or no pressure to fake results. More research is needed to determine the long-term reliability/stability of phallometric diagnoses of pedophilia (Fernandez, 2002; Marshall et al., 2000; Marshall, 2014; Müller et al. 2014; Wormith, 1986), especially in men from the community. It seems there are no studies about these aspects using community samples.

3) The seven studies used different methods to calculate the rates of pedophilia and hebephilia and different kinds of stimuli. For examples, five studies used male and female stimuli (Seto et al., 2001; Firestone, 2000; Fedora et al., 1992; Freund et al., 1991a; Seto et al., 2000) but two studies just used female stimuli (Hall et al., 1995; Marshall et al., 1986). There seems to be no research on how different methods influence the measured rates of pedophilia and hebephilia. Such research is needed, too.

4) As stated above, we do not know if men who were strongly sexually aroused by children were under- or over-represented in the seven studies. Future studies should investigate whether people who take part in these studies show more or less sexual arousal to children than people who do not. In most of the seven studies men were recruited by advertisement, and it was not announced that the sexual arousal caused by children would be measured. So it does not seem likely that pedophiles or hebephiles were especially drawn to these studies. Concerning this issue the result of one
study is very important: in Hall et al. (1995), 20% of the subjects said they had at least some sexual interest in children. This value is typical for many studies of the prevalence of pedophilia (Ahlers et al., 2011; Briere et al., 1989; Smiljanich et al., 1996). In the same study, 29% of men were more or equally sexually aroused by child stimuli then by adult stimuli. This is a strong indication that the mean value of 22% is not the result of a simple over-representation of men who are strongly sexually aroused by children.

5) Only in September 2014 after writing this article the author learned by reading a publication of Marshall (1997) that in the phallometric study of Marshall et al. (1986) men were screened to exclude any who reported feeling attracted to children. Still in this study 3 of the 22 men (14%) were more sexually aroused by children than by adults. Maybe without this screening the amount of men more sexually aroused by children than by adults in this study would have been higher. Judging on the basis of the results of the other studies it is most likely that in the study of Marshall et al. (1986) because of the screening one pedophilic or one hebephilic man was excluded from the measurement. According to all seven studies including the study of Marshall et al. (1986) 22% of men are more or equally sexually aroused by children than by adults, according to the six studies without the study of Marshall et al. (1986) 23% of men are more or equally sexually aroused by children than by adults. So the influence of the study of Marshall et al. (1986) onto the results of this meta-analysis is small. Because of this and also to make it possible to roughly estimate the percentages of pedophiles and hebephiles in the male population with the help of the studies of Seto et al. (2000) and Marshall et al. (1986), the study of Marshall et al. (1986) was not removed afterwards.

6. Discussion

The results of this literature study have several implications:

1) More research is needed to determine the proportions of men who are pedophilic, hebephilic, ephebophilic, and teleiophilic. This author is not aware of a single scientific study that attempts to quantify all of them; indeed, he cannot find any serious discussion of merely the proportion of men who are hebephilic. It seems irresponsible to propose to make hebephilia a mental disorder without first determining this proportion. If 20% of men are hebephilic, does that sexual age-preference realistically constitute a psychiatric illness? Being diagnosed with the "mental illness" of hebephilia, no matter how defined, would damage the psychological well-being of a large portion of the male population. Scientists and especially psychologists should be aware of the deleterious influence their work can have.

2) Many pedophilic and hebephilic persons have suicidal thoughts because of their age-preference. Some of them attempt suicide, and still others
accomplish it. These phenomena often occur in the age range 14-20 years old (B4U-ACT, 2011). A large contributor to this problem may be that pedophilic and hebephilic boys and men do not talk with others about their sexual age-preference. More research should be done to find out what percentage of suicide attempts is related to sexual age-preference. According to a non-representative study about 13 percent of minor-attracted persons attempt suicide during their life because of problems with their sexual age preference (B4U-ACT, 2011). According to an estimate of the World Health Organization generally 10 to 20 suicide attempts lead to one death (World Health Organization, 1999). If every fifth teenager and man is pedophilic or hebephilic this could mean that in the next decades worldwide millions of pedophilic and hebephilic teenagers and men will kill themselves if the stigmatization and criminalization of pedophilia and hebephilia is not stopped.

3) Most lay people know the word pedophilia but do not know the word hebephilia. Many boys and men who are minor-attracted consider themselves pedophilic but are actually hebephilic. Hebephilia has never been a mental disorder nor paraphilia in the "Diagnostic and Statistical Manual of Mental Disorders" (Frances et al., 2011). Allen Frances and Michael B. First, chairmen of the workgroup of the DSM IV, wrote in 2011: "Hebephilia is not a paraphilia, because the sexual arousal pattern that would define it is not inherently deviant. Normal men have fantasies and urges in response to pubescent targets...The alleged diagnosis paraphilia not otherwise specified, hebephilia, arose, not out of psychiatry, but rather to meet a perceived need in the correctional system. This solution represents a misuse of the diagnostic system and of psychiatry." (Frances et al., 2011, p. 84, emphasis added) Boys and men should be informed in schools and through mass media that:

- to be mostly sexually aroused by pubescents (11-14 years old) is widespread and not considered a mental disorder by the American Psychiatric Association;
- important and recognized scientists like Richard Green consider pedophilia, like hebephilia, not to be a mental disorder because pedophilia, like hebephilia, is widespread and is not inherently combined with harm (Green, 2002); and
- nobody chooses his sexual age-preference and that everybody has the right to be respected and to be loved no matter what sexual age-preference he or she has.

4) Since approximately one in five boys and men is pedophilic or hebephilic, the general stigmatization and criminalization of pedophilia and hebephilia should be reconsidered in this light. There have been many children documented to love and desire adults sexually (Rivas, 2013; Kilpatrick, 1992; Rind et al., 2014; Rind, 2013; Rind, 2003). There is not a single scientific study showing that children only love and desire children and do not love and desire adults. The love and consensual sexuality between children and adults are normal and according to many studies not harmful
Younger children are not harmed more than older children because of sexual relationships with adults (Finkelhor, 1979; Rind et al., 1998). The amount of the age discrepancy between the sexual partners does not significantly influence the sexual enjoyment or the positive or negative results of a relationship of a child with an adult (Kilpatrick, 1992; Rind et al., 2014; Leitenberg et al., 2003). Of course children should be well and specifically protected (Rivas, 2013), but pedophilic and hebephilic boys are children, too, and also have a right to protection. To stigmatize pedophilic or hebephilic boys as mentally ill and to put them in prison for their love are detrimental to their mental health. Only unethical sexual behavior should be punished (Rivas, 2013). One in every five boys and men is pedophilic or hebephilic, and this new insight deserves a human and compassionate response from society.

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