



Sexual Attraction and Falling in Love in Persons with Pedohebephilia

Frederica M. Martijn¹ · Kelly M. Babchishin¹ · Lesleigh E. Pullman¹ · Michael C. Seto¹

Received: 24 April 2019 / Revised: 28 October 2019 / Accepted: 30 October 2019
© Springer Science+Business Media, LLC, part of Springer Nature 2020

Abstract

Few studies of pedophilia or hebephilia have included questions about romantic attraction. We conducted an anonymous online survey of 306 men who self-reported as sexually attracted to children. The majority (72%) of participants reported they had fallen in love with a child in their lifetime. Participants reported greater feelings of attachment to children than feelings of infatuation. Though sexual attraction and falling in love were strongly correlated, they were not synonymous. Participants who reported pedohebephilia (defined in this study as attraction to prepubescent and pubescent children) were more likely to have fallen in love with a child than participants who reported pedohebe-ephebophilia (defined as attraction to prepubescent, pubescent, and post-pubescent minors). Also, participants with an exclusive attraction to children were more likely to have fallen in love with a child than participants who were equally attracted to children and adults. The results of this study were consistent with the suggestion of Seto (2012) that pedohebephilia could be considered a form of sexual orientation for age, which includes both sexual and romantic attraction.

Keywords Pedohebephilia · Pedophilia · Sexual orientation · Romantic attraction · DSM-5

Introduction

Pedohebephilia as a Sexual Orientation

Seto (2017) proposed that pedohebephilia could be considered a sexual age orientation, just as homo-, bi-, and heterosexuality are considered sexual gender orientations. Seto (2012, 2017) defined sexual orientation by the principal aspects of age of onset, stability of attraction, sexual attraction, and romantic attraction. Support for these four aspects can be found in, for example, Bailey, Bernhard, and Hsu's (2016a) and Bailey, Hsu, and Bernhard's (2016b) internet survey of 1102 men with pedohebephilia. Their participants reported (1) an early age of onset, realizing their attraction to children at an average age of 14; (2) a persistent, stable attraction to children over time; (3) a strong sexual attraction

to children (e.g., 25% reported a strong sexual attraction to prepubescent children, and 35% reported a strong sexual attraction to pubescent children; see also Grundmann, Krupp, Scherner, Amelung, & Beier, 2016; Schaefer et al., 2010; Tozdan & Briken, 2015); and (4) a majority (68%) indicated they had fallen in love with a child at least once in their lifetime. This last aspect, romantic attraction in pedohebephilia, has received relatively little scientific attention. This is surprising, given romantic feelings are thought to be a ubiquitous human experience—at least for teleiophilic persons (persons attracted to adults; Jankowiak & Fischer, 1992). The present study examined romantic attraction in persons with pedohebephilia.

Generally, romantic feelings can be distinguished into two distinct, but not exclusive, categories of infatuation and attachment. Infatuation is also referred to as “crushes” or “passionate love.” Infatuation promotes initiating contact and sexual desire, can be unilateral, and can be accompanied by feelings of euphoria as well as feelings of insecurity and anxiety (Fisher, Aron, Marshek, Li, & Brown, 2002; Hatfield & Sprecher, 1986). Attachment is part of romantic or companionate love, promoting bonding, and a feeling of commitment (Fisher, 1998; Gonzaga, Turner, Keltner, Campos, & Altemus, 2006). Attachment is generally formed in longer-term, mutual relationships (Berscheid, 2010). Over the typical

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s10508-019-01579-9>) contains supplementary material, which is available to authorized users.

✉ Michael C. Seto
michael.seto@theroyal.ca

¹ Royal Ottawa Health Care Group, The Royal's Institute of Mental Health Research, 1145 Carling Avenue, Ottawa, ON K1Z 7K4, Canada

course of falling in love, individuals will initially experience high levels of infatuation and low attachment. As romantic relationships develop, infatuation often, although not necessarily, diminishes while attachment increases (Langeslag, Muris, & Franken, 2013; Sternberg, 1986). People typically, although not necessarily, have romantic feelings for the same category of persons they are sexually attracted to (Diamond, 2003; Savin-Williams & Vrangalova, 2013).

Most research on persons with pedohebephilia has focused solely on sexual rather than romantic feelings. We know surprisingly little about the prevalence of romantic feelings toward children, or adults, in persons with pedohebephilia. Our current understanding of these experiences is limited to the studies by Bailey et al. (2016a, b), and a few qualitative studies in which persons with pedohebephilia describe their feelings of romantic attraction to children (Brongersma, 1991; Cash, 2016; Freimond, 2013; Houtepen, Sijtsma, & Bogaerts, 2016; Li, 1991). Themes of romantic attraction and falling in love with children are also described in several content analyses of internet forums for persons with pedohebephilia (Holt, Blevins, & Burkert, 2010; Johnson, 2013; Malesky & Ennis, 2004).

Sexual Attraction Dimensions and Falling in Love in Persons with Pedohebephilia

Seto (2017) proposed that sexual orientation exists in a multidimensional space, wherein we have idiosyncratic sexual tendencies along different intersecting sexual dimensions (such as gender, age, or self-other focus). Persons with a pedohebephilic sexual attraction can be described along three aspects within this multidimensionality: polymorphism of age attraction, exclusivity of attraction to children, and gender preference. Mirroring this multidimensional conceptualization of pedohebephilic sexual attraction, we hypothesize that romantic attraction in persons with pedohebephilia also differentially intersects with these three aspects. The first aspect distinguishes individuals who are sexually interested in only one age/maturity category—prepubescent children (pedophilia; 11 or younger¹), pubescent children (hebephilia; 12 to 14), or adolescents (ephebophilia; 15 to 18)—from individuals who are interested in multiple age/maturity categories. More than 60% of Bailey et al.'s (2016b) participants with pedophilia and hebephilia reported attractions to multiple age categories. Polymorphic age preference may be more common than monomorphic age preferences (Blanchard et al., 2012; Stephens, Cantor, Goodwill, & Seto, 2017). We

hypothesized that persons with a monomorphic pedohebephilic attraction to children may be more likely to fall in love with children than persons with polymorphic pedohebephilic attractions, because persons with polymorphic attractions can also fall in love with post-pubescent teenagers.

The next aspect distinguishes individuals who are exclusively attracted to children from those who are attracted to both children and adults. The range of exclusive pedophilic attraction differs across samples and settings. Estimates for exclusive pedophilic attraction range from 7% (Bailey et al., 2016b) to 34% (Beier et al., 2015). Men with hebephilia may be more likely to be non-exclusively attracted to children than men with pedophilia (Stephens, 2012). We hypothesize that persons with pedohebephilia who are exclusively attracted to children are more likely to fall in love with a child than persons who are also attracted to adults.

The last aspect concerns gender preference. Exclusive heterosexuality is much more prevalent than bisexuality in men with teleiophilia (sexual attraction to adults), which in turn is more prevalent than exclusive homosexuality (Savin-Williams & Vrangalova, 2013; Seto, 2017). An estimated 2 to 4% of teleiophilic men prefer men (Hall & Hall, 2007). Conversely, an estimated 9 to 40% of men with pedohebephilia have a preferential attraction to boys (Hall & Hall, 2007). Moreover, persons with pedophilia may distinguish less between boys and girls than persons with teleiophilia distinguish between men and women because prepubescent boys and girls are more similar in size and shape than their adult counterparts (Blanchard et al., 2009; Schaefer et al., 2010; Seto, 2012). Qualitative studies of persons with pedohebephilia suggest that attraction to boys is often accompanied by romantic feelings (e.g., Brongersma, 1991; Li, 1991); therefore, we hypothesize that persons with pedohebephilia who are attracted to boys exclusively or both boys and girls are more likely to have fallen in love with a child than those who are attracted to girls exclusively.

Romantic Attraction and Sexual Offending

Bailey et al. (2016a) found a significant association between reporting having fallen in love with a child and admitting to sexual offense(s) against a child, that were known to the justice system. In their sample, 8% of men who had not fallen in love with a child had committed a sexual offense against a child, versus 26% of men who had fallen in love with a child (Odds Ratio [OR] = 1.57, 95% CI [1.33, 1.87]). This does not mean romantic attraction to a child necessarily increases risk of sexual offending against a child. First, not all individuals who have sexually offended against a child have pedohebephilia, and not all persons with pedohebephilia have sexually offended against a child (Seto, 2018). Second, some people have sexual or romantic interactions with people whose gender does not match their gender preference, and others never

¹ Chronophilias (paraphilias regarding different age/maturity categories; Seto, 2012) are defined in terms of the Tanner (1990) stages of physical maturation, but physical maturation is rarely known, so age is used as a proxy instead.

engage in sexual or romantic interactions with people of the gender they prefer (Diamond, 2003). It does, however, suggest that romantic attraction may be relevant to our understanding of sexual offending against children. Individuals who are both sexually and romantically attracted to children may differ in their risk to sexually offend against children and in their response to treatment or supervision compared to individuals who are sexually or romantically or not at all attracted to children.

The Current Study

The current study examines the prevalence and associations of falling in love with children in men with pedohebephilia recruited over the internet. We predicted that sexual attraction and falling in love would be highly correlated, though some participants may report sexual attraction without falling in love or vice versa (Diamond, 2003; Houtepen et al., 2016; Li, 1991; Savin-Williams & Vrangalova, 2013; Seto, 2012, 2017). As attachment is hypothesized to form in mutual, longer-term romantic relationships (Langeslag et al., 2013), and we expected that at least some persons with romantic feelings for children would not have engaged in ongoing interactions with a child, we hypothesized that participants would report more feelings of infatuation than attachment to children. We hypothesized that participants who are monomorphically attracted to children, who report an exclusive attraction to children, or who are sexually attracted to boys are more likely to have fallen in love with a child than participants attracted to, respectively, polymorphic minor age categories, with a non-exclusive attraction or children, or exclusive attraction to girls. Finally, due to its potential clinical and forensic significance, we also examined whether falling in love with children was related to self-reported sexual offending against children.

Method

Participants

We began with 492 respondents to the survey. The data from 306 men were used for analyses. Of the 186 participants who were excluded from analyses, 48 (25.8%) withdrew from the study; 43 (23.1%) participants identified as non-male, 9 (4.8%) preferred not to answer what gender they identified as, and 29 (15.6%) had missing data on their gender identity; 29 (15.6%) indicated a higher attraction to adults relative to children, and 24 (12.9%) had missing data on their relative attraction to children and adults; 23 (12.4%) did not pass, and 25 (13.4%) had missing data on our validity questions suggesting inattentive responding; 16 (8.6%) did not indicate they were 18 or older, 4 (2.2%) did not pass our age-check

(i.e., we ask about age twice and these individuals did not provide the same response), 25 (15.0%) had missing data on their age; and 15 (8.1%) were removed because of the disparity in quality of the interface and the dissatisfaction of participants with the security of Globaleaks.² The total does not add up to 100% as participants could have been excluded for multiple reasons. More information about participants with missing data and the validity check can be found in the Supplemental Material.

Descriptive information of the sample ($n = 306$) can be found in Table 1. Most participants were younger than 40 years of age (68.0%), white (85.6%), had post-secondary education (74.7%), and 76.8% were not in a relationship (i.e., single, separated, divorced, widowed, or never in a relationship). In total, 293/306 (95.8%) participants answered questions regarding their history of being arrested, charged, or convicted of an offense. Of these participants, 59 (20.1%) reported having any (sexual and/or non-sexual) offense history. In terms of sexual offense history, 45 (15.4%) reported having been arrested, charged or convicted of sexual offenses; 18 (6.1%) of sexual contact offenses; 32 (10.9%) of child sexual exploitation material (CSEM) offenses (legally known in Canada and the U.S. as child pornography); and 3 (1.0%) of sexual non-contact offenses (not including CSEM offenses). Less than half of participants (42.7%) indicated they come into contact with non-familial children at least once a week. We also asked participants to choose, from a list of options, what identity label(s) they endorsed. We felt it was appropriate to include response options such as pedophile and hebephile as these terms are frequently used on online forums, even though these terms are not consistent with American Psychological Association guidelines regarding person-centered language. The most endorsed terms were child lover (51.6%), pedophile (51.0%), and Minor Attracted Person (40.2%). The total does not add up to 100% as participants could have chosen multiple answers.

Measures

The survey asked questions about demographic characteristics, romantic and sexual attraction indicators, and questions about infatuation and attachment. Questions regarding romantic and sexual attraction were mandatory and were

² We attempted a trial survey using Tor (The Onion Router; <https://www.torproject.org/>), using the Globaleaks platform (<https://www.globaleaks.org/>)—however, participants perceived several security issues with the Globaleaks platform (see, e.g., Abbott, Lai, Lieberman, & Priece, 2007). Furthermore, this interface did not allow for conditional logic, and thus required participants to view all questions rather than those applicable to their responses. This may have contributed to low participation rates ($N = 15$) and possible biases. As such, we discontinued the Tor version of the survey and removed these participants from analyses.

Table 1 Demographic information

Variables		<i>n</i> (%)
Age (in years) (<i>n</i> = 306)	18–24	75 (24.5%)
	25–29	50 (16.3%)
	30–39	83 (27.1%)
	40–49	42 (13.7%)
	50–59	38 (12.4%)
	60–69	15 (4.9%)
	70+	3 (1.0%)
Ethnicity (<i>n</i> = 284)	White	243 (85.6%)
	Black	5 (1.8%)
	Hispanic/Latino	18 (6.3%)
	South-East Asian	2 (0.7%)
	Indigenous/Aboriginal	2 (0.7%)
	Multiple ethnicities	14 (4.9%)
Education (<i>n</i> = 288)	Primary school	1 (0.3%)
	High school	72 (25.0%)
	Community college	57 (19.8%)
	BA/Undergraduate degree	101 (35.1%)
	MA/Graduate degree	57 (19.8%)
Employment (<i>n</i> = 275)	Unemployed	32 (11.6%)
	Part-time employment (< 37.5 h/w)	34 (12.4%)
	Full-time employment (≥ 37.5 h/w)	144 (52.4%)
	Student	49 (17.8%)
	Retired	16 (5.8%)
Relationship (<i>n</i> = 302)	I have never been in a relationship	100 (33.1%)
	Currently single	111 (36.8%)
	Relationship (living separately)	22 (7.3%)
	Relationship (living together)	12 (4.0%)
	Married/Common-law	36 (11.9%)
	Separated	8 (2.6%)
	Divorced	11 (3.6%)
	Widowed	2 (0.7%)
Offenses (arrested, charged, or convicted) (<i>n</i> = 293) ^a	No offense history	234 (79.9%)
	Any offense history	59 (20.1%)
	Property offense, such as theft	13 (4.4%)
	Offense against a person, such as assault	6 (2.0%)
	Any sexual offense history	45 (15.4%)
	Contact sexual offense	18 (6.1%)
	Child sexual exploitation material offense	32 (10.9%)
Frequency of contact with non-familial children (<i>n</i> = 297)	Other non-contact sexual offense (e.g., voyeurism)	3 (1.0%)
	Never	67 (22.6%)
	Less often than once a year	28 (9.4%)
	Less often than once every six months	17 (5.7%)
	Less often than once a month	31 (10.4%)
	Once a month	15 (5.1%)
	Once every two weeks	12 (4.0%)
	Once a week	39 (13.1%)
	Several times a week	44 (14.8%)
	Daily	30 (10.1%)
	More often than daily	14 (4.7%)

Table 1 (continued)

Variables		<i>n</i> (%)
Identity label (<i>n</i> = 306) ^b	Person with pedophilia	65 (21.2%)
	Pedophile	156 (51.0%)
	Person with hebephilia	17 (5.6%)
	Hebephile	50 (16.3%)
	Person with pedohebephilia	13 (4.2%)
	Pedohebephile	30 (9.8%)
	Minor Attracted Person	123 (40.2%)
	Minor Attracted Adult	37 (12.1%)
	Child lover (boy lover, girl lover)	158 (51.6%)
	Other ^c	20 (6.5%)
Time spent on online forums (<i>n</i> = 292)	Less than an hour a month	44 (15.1%)
	An hour a month	20 (6.8%)
	An hour every two weeks	24 (8.2%)
	An hour every week	39 (13.4%)
	Several hours every week	72 (24.7%)
	An hour every day	46 (15.8%)
	2–4 h every day	29 (9.9%)
	4 to 8 h every day	14 (4.8%)
	> 8 h every day	4 (1.4%)

Total *n* fluctuates due to missing data or participants opting to not answer questions

BA bachelor's degree, *MA* master's degree

^aThe 293 participants provided a total of 306 responses, because they could select more than one answer. The percentages therefore add up to more than 100%

^bThe 306 participants provided a total of 669 responses, because they could select more than one label. The percentages therefore add up to more than 100%

^cOpen ended answers included answers such as achronophilia, asexual biromantic, babyqueer, gay boylover, nepiophile, normal, pederast, and paedo (non-exhaustive list). Several participants (*n* = 5) mentioned choosing not to label their attraction

answered by 306 participants. If participants reported having fallen in love with a child (*n* = 219/306; 71.6%), they were also presented with questions about infatuation and attachment (*n* = 206/219; 94.1% of participants who had fallen in love with a child completed all of the questions about infatuation and attachment). The measures will be described below.

Demographics

We asked participants a series of questions regarding their age, ethnicity, education level, current employment status, current relationship status, official offense history (general and sexual offenses), frequency of contact with non-familial children, identity label, website of participant recruitment, and time spent on online forums. The survey was available in English only. Answering demographic questions (except

age and identity label) was optional in order to let participants determine their own level of privacy.

Romantic Attraction

We asked participants two questions about romantic attraction: (1) “Have you ever fallen in love with a child that was 14 or younger while you were 18 or older at that time?” and (2) “Have you ever fallen in love with an adult (someone who is 18 or older)?”

Infatuation and Attachment

We asked participants who had indicated they had fallen in love with a child a number of follow-up questions about infatuation and attachment, adapted from the Infatuation and

Attachment Scale (IAS; see Langeslag et al., 2013 for the scale development). The IAS can be administered regardless of reciprocity of these feelings (Langeslag et al., 2013). We asked participants to keep a child in mind whom they had fallen in love with when answering these questions. The questionnaire was designed to measure feelings of infatuation (e.g., “I get shaky knees when I am close to...”) or attachment (e.g., “I feel deeply connected to...”). The IAS was modified to reflect a relationship between an adult and a child by excluding questions that were age-dependent, such as whether they wanted to get married or have children together. The IAS is rated on a 7-point Likert scale (1 = *I strongly disagree*, 7 = *I strongly agree*). Cronbach’s alpha showed the scales had acceptable internal consistency for Infatuation to children ($\alpha=0.76$) and Attachment to children ($\alpha=0.87$) in our study.

Attraction Indicators

We asked participants to rate their sexual attraction to children relative to adults on a scale of 1 to 7 (1 = *exclusively attracted to children*, 4 = *equally attracted to children and adults*, 7 = *exclusively attracted to adults*). We also asked participants to rate their attraction to boys relative to girls on a scale from 1 to 7 (1 = *exclusively attracted to boys*, 4 = *equally attracted to boys and girls*, 7 = *exclusively attracted to girls*). Subsequently, we asked participants to rate their degree of attraction to boys and/or girls (depending on their indicated interest in boys, girls, or both) on a scale of 1 to 5 (1 = *not attractive at all*, 5 = *very attractive*) in the age ranges of 0 to 3, 4 to 7, 8 to 11, 12 to 14, and 15 to 18. We defined pedophilia as those with a sexual interest in children aged 0 to 11 and hebephilia as those with a sexual interest in children aged 12 to 14, recognizing that age is an imperfect proxy of pubertal status.

Procedure

The study advertised for persons attracted to children 14 or younger on multiple internet forums from December 2017 to March 2018. After clicking on the link to the anonymous online survey and giving informed consent, participants proceeded to the questionnaire. Unlike the survey by Bailey et al. (2016a, b), who recruited participants mainly through two forums (B4U-Act and Virtuous Pedophiles), we included ten online forums (list available upon request). Some forums were found through online searches and others were referred to us through forums we contacted about recruitment. Some of these forums take an explicit stance against child–adult sexual contact, but most of the forums do not take an explicit pro- or anti-contact stance. The survey was also cross-posted

by participants on Discord chat channels and other-language forums. Moderators of several forums reviewed the questionnaire before allowing it to be posted, but no changes were requested. Most participants (70.0%) indicated they spend at least an hour per week on online forums for persons attracted to children. The questionnaire was hosted on Checkbox, a platform that does not track Internet Protocol (IP) addresses, to provide participants more assurance of anonymity, and was hosted on a server owned by the research group.

Results

Falling in Love, Infatuation, and Attachment

The majority of our sample (71.6%; $n=219/306$) reported having fallen in love with a child who was 14 or younger when the participants themselves were 18 or older. Over half of the participants (55.6%; $n=170/306$) reported having fallen in love with an adult (someone who was 18 or older). Significantly more participants had fallen in love with a child than with an adult, $t(305)=4.15$, $p<.001$, Cohen’s $d=0.24$, 95% CI [0.12, 0.35]. Participants who had fallen in love with a child reported significantly greater feelings of attachment to children than feelings of infatuation to children, $t(205)=9.08$, $p<.001$, $d=0.63$, 95% CI [0.48, 0.78].

Sexual Attraction Patterns and Falling in Love with Children

Age Attraction Polymorphism

We categorized participants by degree of age range attraction polymorphism. Most participants (91.5%; $n=280/306$) were assigned to one of the following three groups: participants attracted maximally (i.e., rating of 5 out of 5) to age 11 or younger (pedophilia; 25.2%, $n=77$), participants attracted maximally to age 11 or younger and age 12 to 14 (pedohebephilia; 39.9%, $n=122$), and participants attracted maximally to ages 11 or younger, 12 to 14, and 15 to 18 (pedohebe-ephebiphilia; 26.5%, $n=81$). The remaining 8.5% ($n=26$) participants could be classified as having exclusive maximal attraction to ages 12 to 14 (i.e., exclusively hebephilic; $n=6$); exclusive maximal attraction to ages 15 to 18 (exclusively ephebophilic; $n=1$); maximal attraction to ages 12 to 14 as well as 15 to 18 (hebe-ephebophilic; $n=17$); and maximal attraction to the ages 11 or younger as well as 15 to 18 (pedo-ephebophilic; $n=2$). To facilitate meaningful comparisons with enough statistical power, the remaining analyses regarding age attraction are based on the sample of 280 participants who could be classified into the pedophilia, pedohebephilia, or pedohebe-ephebiphilia preference

Table 2 Falling in love with a child for age attraction polymorphism ($n=280$), exclusivity ($n=306$), gender preferences ($n=306$), and offense history ($n=293$)

Grouping	% (n) having fallen in love with a child	OR [95% CI]
Pedophilia ^a	71.4% ($n=55/77$)	
Pedohebephilia	81.1% ($n=99/122$)	1.72 [0.88, 3.37]
Pedohebe-ephebophilia	61.7% ($n=50/81$)	0.65 [0.33, 1.26]
Pedohebe-ephebophilia ^a		
Pedohebephilia		2.67 [1.41, 5.05]
Exclusively attracted to children ^a	78.1% ($n=50/64$)	
Strongly attracted to children	73.1% ($n=95/130$)	0.76 [0.37, 1.54]
Preferentially attracted to children	74.3% ($n=52/70$)	0.81 [0.36, 1.80]
Equally attracted to children and adults	52.4% ($n=22/42$)	0.31 [0.13, 0.72]
Equally attracted to children and adults ^a		
Strongly attracted to children		2.47 [1.20, 5.06]
Preferentially attracted to children		2.63 [1.17, 5.90]
Boy-attracted ^a	74.4% ($n=61/82$)	
Boy-and-girl-attracted	70.3% ($n=104/148$)	0.81 [0.44, 1.50]
Girl-attracted	71.1% ($n=54/76$)	0.85 [0.42, 1.70]
Girl-attracted ^a		
Boy-and-girl-attracted		0.96 [0.52, 1.77]
Never arrested, charged, or convicted of a sexual offense ^a	69.4% ($n=172/248$)	
Arrested, charged, or convicted of a sexual offense	82.2% ($n=37/45$)	2.04 [0.91, 4.60]

Bolded values indicate that the group differences were statistically significant, $p < .05$. Attraction to children rated from 1 to 4, where 1 = exclusively attracted to children; 2 = strongly attracted to children; 3 = preferentially attracted to children; and 4 = equally attracted to children and adults. Sexual offense defined as a history of being arrested, charged, or convicted of contact sexual offenses, child sexual exploitation material offenses, or non-contact sexual offenses, such as voyeurism

^aDenotes the reference category used for the odds ratio calculation

categories. More information about attraction ratings can be found in the Supplemental Material.

Falling in Love with a Child and Age Attraction Polymorphism

Across age category preference, prevalence of having fallen in love with a child was high (ranging from 61.7 to 81.1%, see Table 2). Participants with a pedohebephilic attraction had 2.67 times greater odds (95% CI [1.41, 5.05]) of having fallen in love with a child than participants with a pedohebe-ephebophilic preference. We found no statistically significant differences in having fallen in love with a child between participants with a pedophilic and a pedohebephilic preference (OR = 1.72, 95% CI [0.88, 3.37]), or between participants with a pedophilic and a pedohebe-ephebophilic preference (OR = 0.65 [0.33, 1.26]).

Infatuation and attachment scores for participants with a pedophilic, pedohebephilic, and pedohebe-ephebophilic preference can be found in Table 3. There were no statistically significant differences between participants with a pedophilic, pedohebephilic, or pedohebe-ephebophilic

preference in their feelings of infatuation to children ($F(2, 189) = 1.38, p = .255$). There were statistically significant differences across age attraction for reported attachment to children, $F(2, 189) = 3.10, p = .047$. Participants with a pedohebephilic preference reported greater attachment to children than participants with a pedohebe-ephebophilic preference, $d = 0.43$, 95% CI [0.07, 0.78].

Exclusivity

Approximately one fifth of the participants (20.9%; $n=64/306$) reported they were exclusively attracted to children (i.e., rated 1 out of 4, with 1 = exclusively attracted to children, and 4 = equally attracted to children and adults). The largest group of non-exclusive individuals was strongly attracted to children compared to adults, but still had some attraction to adults (rated 2 out of 4; 42.5%; $n=130/306$). Another quarter was preferentially attracted to children compared to adults (rated 3 out of 4; 22.9%, $n=70/306$), and the smallest group (13.7%; $n=42/306$) was equally attracted to children and adults (rated 4 out of 4).

Table 3 Mean ratings of infatuation and attachment to children by age attraction polymorphism ($n=192$), exclusivity ($n=206$), gender preferences ($n=206$), and offense history ($n=197$)

	Infatuation to children <i>M</i> (<i>SD</i>)	Attachment to children <i>M</i> (<i>SD</i>)
Overall ($n=206$) ^a	3.6 (1.5)	4.8 (1.6)
Age attraction polymorphism		
Pedophilia ($n=53$)	3.4 (1.5)	4.9 (1.6)
Pedohebephilia ($n=92$)	3.8 (1.4)	5.0 (1.6)
Pedohebe-ephebophilia ($n=47$)	3.5 (1.4)	4.3 (1.7)
Exclusivity		
Exclusively attracted to children ($n=49$)	3.7 (1.6)	5.1 (1.6)
Strongly attracted to children compared to adults ($n=90$)	3.7 (1.4)	4.8 (1.6)
Preferentially attracted to children compared to adults ($n=48$)	3.5 (1.4)	4.6 (1.6)
Equally attracted to children and adults ($n=19$)	3.5 (1.5)	4.2 (1.5)
Gender preferences		
Boy-attracted ($n=58$)	3.6 (1.5)	5.1 (1.4)
Boy-and-girl-attracted ($n=99$)	3.7 (1.4)	4.6 (1.6)
Girl-attracted ($n=49$)	3.4 (1.6)	4.7 (1.7)
Sexual offense history ^b		
Never arrested, charged, or convicted ($n=161$)	3.7 (1.4)	4.8 (1.6)
Arrested, charged, or convicted ($n=36$)	3.5 (1.5)	4.7 (1.7)

Attraction to children rated from 1 to 4, where 1 = exclusively attracted to children; 2 = strongly attracted to children; 3 = preferentially attracted to children; and 4 = equally attracted to children and adults

^aQuestions about infatuation and attachment were answered by $n=206/219$ (94.1%) participants who reported having fallen in love with a child

^bSexual offense defined as a history of being arrested, charged, or convicted of contact sexual offenses, child sexual exploitation material offenses, or non-contact sexual offenses, such as voyeurism

Falling in Love with a Child and Exclusivity

Across exclusivity groupings, 52.4% to 78.1% of participants had fallen in love with a child (see Table 2). Compared to participants who were exclusively attracted to children, participants who were attracted to both children and adults equally had significantly lower odds to have fallen in love with a child ($OR=0.31$, 95% CI [0.13, 0.72]). There were no statistically significant differences in rates of falling in love between participants exclusively attracted to children and participants strongly attracted to children ($OR=0.76$, 95% CI [0.37, 1.54]) or preferentially attracted to children ($OR=0.81$, 95% CI [0.36, 1.80]). As noted earlier, those who indicated a preferential attraction to adults relative to children were excluded from the overall analysis as this research concerns persons equally or preferentially attracted to children. However, of the participants who adhered to our other inclusion criteria and who reported a preferential attraction to adults ($n=19$), seven participants (36.8%) reported having fallen in love with a child. These participants had significantly lower odds to have fallen in love with a child than participants exclusively attracted to children ($OR=0.16$, 95% CI [0.05, 0.49]). There were no statistically significant differences across range of exclusivity for feelings of infatuation to

children ($F[3, 202]=0.25$, $p=.865$) or attachment to children ($F[3, 202]=1.70$, $p=.168$; see Table 3).

Gender Preference

A quarter of the participants were exclusively boy-attracted (26.8%, $n=82/306$), half were boy-and-girl-attracted (48.4%; $n=148/306$), and another quarter were exclusively girl-attracted (24.8%, $n=76/306$).

Falling in Love with a Child and Gender Preference

Across the gender preference groupings, 70.3% to 74.4% of participants had fallen in love with a child (see Table 2). There were no statistically significant differences on rates of having fallen in love with a child between boy-attracted and boy-and-girl-attracted participants ($OR=0.81$, 95% CI [0.44, 1.50]) or between boy-attracted and girl-attracted participants ($OR=0.85$, 95% CI [0.42, 1.70]). As can be seen in Table 3, there were no statistically significant differences across gender preference for feelings of infatuation to children ($F[2, 203]=0.74$, $p=.477$) or attachment to children ($F[2, 203]=1.60$, $p=.205$).

Sexual Offenses

To increase statistical power, we combined participants who admitted to a history of being arrested, charged, or convicted of sexual contact offenses (6.1%; $n = 18/293$), CSEM offenses (10.9%; $n = 32/293$), and non-contact sexual offenses, such as voyeurism (1.0%; $n = 3/293$) into one group (15.4%; $n = 45/293$). Six individuals reported more than one type of sexual offense, for example, admitting to histories of both contact and CSEM offending. In total, 69.4% ($n = 172/248$) of participants who had never committed a sexual offense had fallen in love with a child, and 82.2% ($n = 37/45$) of participants who had committed any sexual offense had fallen in love with a child. The association between having fallen in love with a child and having committed a sexual offense was not statistically significant (OR = 2.04, 95% CI [0.91, 4.60], see Table 2).³ There were no statistically significant differences between participants who had or had not committed a sexual offense and reported feelings of infatuation to children ($t(195) = 0.46$, $p = .644$, $d = 0.14$, 95% CI [-0.22, 0.50]) or attachment to children ($t(195) = 0.42$, $p = .679$, $d = 0.06$ [-0.30, 0.42]), see Table 3.

Discussion

Consistent with our hypotheses, we found a high prevalence of falling in love with children aged 14 and younger in men with a sexual interest in children. We also found differential relations of falling in love across age polymorphism and exclusivity of sexual attraction to children. Each of these key findings is discussed in more detail next.

Falling in Love with a Child

Seventy-two percent of the participants reported having fallen in love with a child who was 14 or younger, while being 18 or older themselves. We found that sexual attraction and falling in love were associated but not synonymous. Age range attraction was related to falling in love with a child, as more participants with pedohebephilic age preferences had fallen in love with a child than participants with pedohebephilic age preferences. As hypothesized, persons with an exclusive interest in children had greater odds to have fallen in love with a child compared to participants equally attracted to children and adults. Contrary to our hypothesis, gender preference was not related to having fallen in love with

a child. While this study recruited persons attracted to children specifically, a slight majority of the participants (56%) indicated they had fallen in love with an adult. Additionally, a minority (37%) of participants preferentially attracted to adults had fallen in love with a child. We did not ask questions about sexual history involving adults in this study.

Having fallen in love with a child across attraction aspects was common (between 52 and 81% of the sample). The overall prevalence, irrespective of age preference, exclusivity, or gender preference was 72%. This rate is similar to the prevalence of 68% reported in Bailey et al.'s (2016a) study; these authors did not further distinguish by age preference, exclusivity, or gender preference. Seto (2012, 2017) defined sexual orientation by four principal aspects: early age of onset, persistence over time, sexual attraction, and romantic attraction. The high prevalence of experiences of having fallen in love with children in this sample adds evidence to Seto's (2012, 2017) idea that pedohebephilia could be considered a sexual age orientation, given romantic attraction was one of the four aspects discussed.

We also asked questions about infatuation and attachment to children for those who reported falling in love with a child. Interestingly, participants reported stronger attachment than infatuation for children, even though attachment is expected to form in longer-term, mutual relationships—at least, in adult romantic relationships (Langeslag et al., 2013). We did not ask participants about ongoing social, romantic, or sexual interactions with children, and thus cannot empirically examine this finding further. Some research (e.g., Geradt, Jahnke, Heinz, & Hoyer, 2018) indicates that some persons with pedohebephilia have frequent (non-romantic/non-sexual) social interactions with children, in which feelings of attachment may develop (Berscheid, 2010). Alternatively, initial feelings of infatuation for a child may wane or change to feelings of attachment, similar to how romantic feelings change over time in teleiophilic persons (Sternberg, 1986). This attachment may also reflect emotional congruence with children, a complex construct referring to an emotional and social affinity for children compared to adults (McPhail, 2010). Emotional congruence with children is positively associated with sexual interest in children as well as sexual recidivism among individuals who have sexually offended against children (Hermann, McPhail, Helmus, & Hanson, 2017; McPhail, Hermann, & Fernandez, 2014; McPhail, Hermann, & Nunes, 2013). There were mostly no statistically significant relationships between infatuation and attachment with minor age attraction polymorphism, exclusivity of attraction to children, gender preferences, or sexual offense history: the exception was that individuals with pedohebephilic attractions reported more attachment to children than those with pedohebe-ephebophilic attractions.

³ The association between having fallen in love with a child and having committed a sexual offense was reduced and continued not to reach the statistical significance threshold ($p < .05$) after controlling for the age of participants (AOR = 1.94, 95% CI [0.84, 4.51]).

Polymorphism, Exclusivity of Attraction, and Gender Preference

Attraction to polymorphic maturity categories (73%) and non-exclusivity (79%) of attraction to children were common in our sample. All of the participants indicated at least some attraction to age categories adjacent to their primary attraction, in line with the sexual gradient hypothesis (e.g., Seto, Lalumière, & Kurban, 1999) and previous work by Bailey et al. (2016b) and Stephens et al. (2017).

The largest proportion of participants reported pedohebephilia, followed by pedohebe-ephebophilia, and then pedophilia. These results are consistent with a new study by Stephens, Seto, Cantor, and Lalumière (2019) that examined the relationship between a behavioral measure of pedophilia and genital responding to sexual stimuli, and found that pedohebephilia was more common than hebephilia, whereas pedophilia was rare. These data suggest that monomorphic attraction to any child category may be the exception rather than the rule. While the majority of participants were non-exclusively attracted to children, only two participants were pedo-ephebophilic, even though some teens aged 15 to 18 can look similar to adults (Tanner, 1990).

Attraction to boys was relatively common in this sample, with 27% of the participants preferring boys and 48% being attracted to both boys and girls. Seto (2018) noted that other anonymous online surveys also find a preponderance of boy-attracted participants, even though clinical and criminal justice samples are predominantly composed of individuals who report attraction to girls or have offended against girls. This suggests there may be a strong selection bias in terms of who joins online forums, with boy-attracted individuals being relatively more likely to join than girl-attracted individuals. Alternatively, or in addition, there is a selection bias in clinical and criminal justice referrals, where individuals who are attracted to girls or who have offended against girls are more likely to be seen.

Association with Sexual Offending

The effect size in this study between having fallen in love with a child and admission of a sexual offense was larger in magnitude ($OR = 2.04$) than the effect reported by Bailey et al.'s (2016a) study ($OR = 1.57$). This effect was not statistically significant in this study, but the Bailey et al. (2016a) study had a sample size that was three times larger and thus had more statistical power. Our results suggest that individuals with pedohebephilia with no romantic attraction to children may have a better prognosis in terms of later sexual offending than those with a romantic attraction to children.

Neither this study nor Bailey et al.'s (2016a) study investigated whether participants had ever committed a sexual offense against a child they were in love with, or whether

romantic attraction predicted future sexual behavior involving children. More research, especially prospective studies, is required to understand how romantic attraction to children may relate to both sexual and non-sexual behavior involving children. For example, we may find that individuals who believe adult-child sex does not inherently cause harm are more likely to seek sexual behavior with children they have fallen in love with; others who believe sexual behavior with children is harmful for the child may be less likely to seek sexual behavior with children they are in love with. Studies using prospective, longitudinal design would also be required to ascertain the extent to which falling in love with a child predicts future sexual offending against a child.

Strengths and Limitations

Interpretation of "Falling in Love"

To operationalize romantic attraction, we used a question about "having fallen in love with a child aged 14 or younger." We assumed most participants would have an intuitive interpretation of the concept of "falling in love." Considering falling in love is an intense form of romantic attraction (Diamond, 2003), participants with some romantic attraction to children might have answered negatively when asked if they ever had fallen in love with a child. Consequently, they would not have been asked about infatuation and attachment. The wording of our question about falling in love also meant that we could not examine whether sexual and romantic attraction occur together for the same child. For example, someone could have reported sexual attraction to prepubescent children exclusively but could have endorsed having fallen in love with a young adolescent given the framing of the questions.

Is the result that 72% of our sample has fallen in love with a child high, low, or comparable to general populations? What about compared to sexual and romantic preference minority groups? Studies sampling the general population about falling in love report widely differing ranges of prevalence, ranging from 55% up to 98% (Aron, Dutton, Aron, & Iverson, 1989; Bowker, Spencer, Thomas, & Gyoerkoe, 2012; Riela et al., 2017; Sprecher et al., 1994). Some other studies report that people fall in love multiple times in their lifetime (Galperin & Haselton, 2010; Riela, Rodrigues, Aron, Xu, & Acevedo, 2010). These studies also differ in their definition of love, include different participant age ranges (high school to adulthood), and are prone to self-selecting bias by excluding participants who have never fallen in love or never had a relationship. Further, much research on romantic love has exclusively focused on heterosexual people or couples (Thorne, Hegarty, & Hepper, 2019), or equate sexual behavior with romantic attraction (Diamond, 2003). Additionally, the prevalence of falling in love in our sample should be

interpreted in the light of an absence of societally accepted ways to form romantic or sexual relationships with children. We can experience strong feelings of love for a person even when that love is unrequited (Bringle, Winnick, & Rydell, 2013), but it is plausible that (perceived) bidirectionality would have an influence on the formation and experience of romantic feelings. Even so, 37% of participants with a preferential attraction to adults did report having fallen in love with a child, further illustrating the complex interactions between preference and availability of sexually attractive persons. Future studies could aim to include comparison groups, ideally also including other sexual and romantic preference minority groups, to investigate comparative prevalence of experiences of falling in love and the impact of societal constraints on romantic feelings.

As we specifically did not want to include questions about ongoing social, romantic, or sexual behaviors with children, we asked participants about their current feelings about a child they had fallen in love with in their lifetime, which potentially could have occurred days, weeks, or even years ago. Their current feelings about this child may reflect initial intense feelings of love that have waned, or the development from infatuation to attachment over time. Unfortunately, we could not check for time-effects on these feelings. In hindsight, asking participants to rate romantic attraction the same way as sexual attraction may have mitigated delineating between “romantic attraction” and “falling in love” and effects of time. It will also be interesting to examine how romantic attraction to children more broadly—not only having fallen in love—may relate to sexual and non-sexual behavior. For example, do people who report only sexual attraction to children differ from those who report only romantic attraction to children? What are the differences between romantic attraction, a crush or infatuation, and falling in love with a child in persons with pedohebephilia? Future research to pursue this line of research should use better measurement of romantic attraction and what it means to fall in love.

Internet Recruitment

This is one of a growing number of online survey studies with non-incarcerated persons with pedohebephilia. While it is difficult to ensure participants are paying attention to internet surveys, rates of inconsistent responding (12%) and drop-out (26%) were typical of online surveys (Hoerger, 2010; Meade & Craig, 2012). This specific group of participants is (understandably) wary about detection (Jahnke, Imhoff, & Hoyer, 2015). We did not include questions about offending behavior that was not already known by the justice system to reduce participant concern about detection.

Research via the Internet has the important advantage of being able to provide increased security to participants. One

of the strengths of this study is that we prioritized providing security measures to ensure safety and anonymity of the participants. We hosted the survey on Checkbox, which does not require running JavaScript, thus making it accessible on the most secure setting on Tor (The Onion Router; <https://www.torproject.org/>), and it can be set to not log IP addresses, which potentially could be used to locate someone. Checkbox was hosted on a server owned by the research group to ensure physical control of the data. Regardless, no internet survey to date can provide a 100% guarantee of anonymity. In order to bolster security even more, we attempted a trial survey hosted on Tor using the platform of Globaleaks. Unfortunately, safety measures on Globaleaks were deemed unsatisfactory by many participants, and consequently hosting via Globaleaks was discontinued. If researchers continue to conduct internet-based surveys with safety-conscious participants, especially in light of increasing knowledge and concerns around privacy, future initiatives should be developed to make Tor-based or other highly secure survey hosting platforms available.

Self-Report

The current study was based on self-report and so could be vulnerable to socially desirable responding. For example, some participants may have reported falling in love with a child, even if they never had, because they might have seen this as more positive than reporting sexual attraction to children only. At the same time, participants in this research had a self-identified interest in children, with no apparent value in lying about their sexual or romantic interests, unlike in studies with clinical or forensic samples where there are potentially serious consequences of such admissions (Hanson & Morton-Bourgon, 2005; Jahnke et al., 2015). We believe that the security precautions we took mitigated socially desirable responding, but future studies could employ other measures to cross-validate answers.

Sexual Offenses

Although it is a reasonable inference to make, due to the wording of the questions in the survey asking about sexual offenses, we cannot identify whether participants committed a sexual contact or non-contact offense against a child or an adult; it is possible that some of the participants have been arrested, charged, or convicted of a sexual offense against an adult instead of a child. However, we think this is unlikely in the context of a survey that focused on questions about sexual and romantic attraction to children.

Adult–Child Contact Stance

Many requests for survey participation are posted on B4U-Act and Virtuous Pedophiles websites. Both sites have taken a stance against adult–child sex, which may not be representative of all people with pedohebephilia who frequent online forums; for example, fewer members of these forums may have committed a sexual offense involving children than members of other forums that do not take an explicit anti-contact stance. We tried to counteract this selection bias by contacting multiple forums and managed to recruit participants on a multitude of online forums. We suggested earlier that the potential moderating effect of views about adult–child sex and its relation to falling in love with children and engaging in sexual behavior with children should be explored.

Interpretation of Age Delineations

We used the a priori delineated age categories of 0 to 3, 4 to 7, 8 to 11, 12 to 14, and 15 to 18 for “minors.” Including 18 years in the oldest category may have influenced the results given 18-year olds are legally considered to be adults in many jurisdictions. This would not have influenced our analyses regarding pedohebephilia. However, these age categories are regarded to be generally in line with Tanner stages 1 to 4 (Tanner, 1990), where there is variation in the physical development of minors. For example, the category of minors 12 to 14 was intended to capture pubescence, but some 11-year-old children are already pubescent, and some 15-year-old children have not yet begun puberty. This may have led to overreporting of polymorphic age attractions, if, for example, participants attracted to pubescent minors indicated attraction to ages 8 to 11, 12 to 14, and 15 to 18, as pubescence can occur at all of these ages. Future research could, for example, use legal images to demarcate the intended stages of physical development of children more clearly.

Conclusion

Most, if not all, research on pedohebephilia has focused on sexual attraction to children, along the aspects of age attraction polymorphism, exclusivity, and gender preference. The results of this study suggest that the large majority of persons with pedohebephilia have also fallen in love with a child. More research is needed to understand this phenomenon, including asking questions about romantic attraction short of falling in love, aspects of romantic attraction that include as well as go beyond our questions about infatuation and attachment, and sexual and romantic attraction to the same or different children. The similar association found in both this study as Bailey et al.’s (2016a) study between admission of past sexual offending and romantic attraction to children suggests that romantic attraction may also be relevant

to our understanding of sexual offending against children. The results of this study support the examination of romantic attraction as well as sexual attraction in the study of pedophilia, hebephilia, and ephebophilia, and also add to the current debate about whether these chronophilias could be considered sexual orientations for age/maturity, as discussed by Seto (2012, 2017). Our finding that monomorphic attraction to children was the exception rather than the rule further challenges the idea that pedophilia and hebephilia are different chronophilias in practical terms. This result, along with the observation that some individuals with pedohebephilia also reported sexual and romantic attraction to older adolescents or adults, illustrates the complexity of this aspect of human sexuality.

Acknowledgements The authors would like to thank all moderators and participants of the forums who have supported the research. Frederica M. Martijn conducted part of the research while affiliated with The Royal’s Institute of Mental Health Research and Vrije Universiteit Amsterdam.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of The Royal’s Institute of Mental Health Research Ethics Board (REB number 2017040) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

- Abbott, T. G., Lai, K. J., Lieberman, M. R., & Price, E. C. (2007). Browser-based attacks on Tor. In N. Borisov & P. Golle (Eds.), *Lecture notes in computer science* (Vol. 4776, pp. 184–199). Heidelberg: Springer. https://doi.org/10.1007/978-3-540-75551-7_12.
- Aron, A., Dutton, D. G., Aron, E. N., & Iverson, A. (1989). Experiences of falling in love. *Journal of Social and Personal Relationships*, 6, 243–257. <https://doi.org/10.1177/0265407589063001>.
- Bailey, J. M., Bernhard, P. A., & Hsu, K. J. (2016a). An Internet study of men sexually attracted to children: Correlates of sexual offending against children. *Journal of Abnormal Psychology*, 125, 989–1000. <https://doi.org/10.1037/abn0000213>.
- Bailey, J. M., Hsu, K. J., & Bernhard, P. A. (2016b). An Internet study of men sexually attracted to children: Sexual attraction patterns. *Journal of Abnormal Psychology*, 125, 976–988. <https://doi.org/10.1037/abn0000212>.
- Beier, K. M., Grundmann, D., Kuhle, L. F., Scherner, G., Konrad, A., & Amelung, T. (2015). The German Dunkelfeld Project: A pilot study to prevent child sexual abuse and the use of child abusive images. *Journal of Sexual Medicine*, 12, 529–542. <https://doi.org/10.1111/jsm.12785>.

- Berscheid, E. (2010). Love in the fourth dimension. *Annual Review of Psychology*, 61, 1–25. <https://doi.org/10.1146/annurev.psych.093008.100318>.
- Blanchard, R., Kuban, M. E., Blak, T., Klassen, P. E., Dickey, R., & Cantor, J. M. (2012). Sexual attraction to others: A comparison of two models of alloerotic responding in men. *Archives of Sexual Behavior*, 41, 13–29. <https://doi.org/10.1007/s10508-010-9675-3>.
- Blanchard, R., Lykins, A. D., Wherrett, D., Kuban, M. E., Cantor, J. M., Blak, T., ... Klassen, P. E. (2009). Pedophilia, hebephilia, and the DSM-V. *Archives of Sexual Behavior*, 38, 335–350. <https://doi.org/10.1007/s10508-008-9399-9>.
- Bowker, J. C., Spencer, S. V., Thomas, K. K., & Goyer, E. A. (2012). Having and being an other-sex crush during early adolescence. *Journal of Experimental Child Psychology*, 111, 629–643. <https://doi.org/10.1016/j.jecp.2011.11.008>.
- Bringle, R. G., Winnick, T., & Rydell, R. J. (2013). The prevalence and nature of unrequited love. *Sage Open*, 3, 1–15. <https://doi.org/10.1177/2158244013492160>.
- Brongersma, E. (1991). Boy-lovers and their influence on boys: Distorted research and anecdotal observations. *Journal of Homosexuality*, 20, 145–173. https://doi.org/10.1300/J082v20n01_10.
- Cash, B. (2016). *Self-identifications, sexual development, and well-being in minor-attracted people: An exploratory study* (Unpublished master's thesis). Cornell University, Ithaca, NY. Retrieved April 24, 2019, from <https://ecommons.cornell.edu/bitstream/handle/1813/45135/bmc87.pdf?sequence=1>.
- Diamond, L. M. (2003). What does sexual orientation orient? A biobehavioral model distinguishing romantic love and sexual desire. *Psychological Review*, 110, 173–192. <https://doi.org/10.1037/0033-295X.110.1.173>.
- Fisher, H. E. (1998). Lust, attraction, and attachment in mammalian reproduction. *Human Nature*, 9, 23–52. <https://doi.org/10.1007/s12110-998-1010-5>.
- Fisher, H. E., Aron, A., Mashek, D., Li, H., & Brown, L. L. (2002). Defining the brain systems of lust, romantic attraction, and attachment. *Archives of Sexual Behavior*, 31, 413–419. <https://doi.org/10.1023/A:1019888024255>.
- Freimond, C. M. (2013). *Navigating the stigma of pedophilia: The experiences of nine minor-attracted men in Canada* (Unpublished MS. thesis). Simon Fraser University, Burnaby, Canada. Retrieved April 24, 2019, from <http://summit.sfu.ca/item/13798>.
- Galperin, A., & Haselton, M. (2010). Predictors of how often and when people fall in love. *Evolutionary Psychology*, 8, 147470491000800102. <https://doi.org/10.1177/147470491000800102>.
- Geradt, M., Jahnke, S., Heinz, J., & Hoyer, J. (2018). Is contact with children related to legitimizing beliefs toward sex with children among men with pedophilia? *Archives of Sexual Behavior*, 47, 375–387. <https://doi.org/10.1007/s10508-017-1042-1>.
- Gonzaga, G. C., Turner, R. A., Keltner, D., Campos, B., & Altemus, M. (2006). Romantic love and sexual desire in close relationships. *Emotion*, 6(2), 163–179. <https://doi.org/10.1037/1528-3542.6.2.163>.
- Grundmann, D., Krupp, J., Scherner, G., Amelung, T., & Beier, K. M. (2016). Stability of self-reported arousal to sexual fantasies involving children in a clinical sample of pedophiles and hebephiles. *Archives of Sexual Behavior*, 45, 1153–1162. <https://doi.org/10.1007/s10508-016-0729-z>.
- Hall, R. C., & Hall, R. C. (2007). A profile of pedophilia: Definition, characteristics of offenders, recidivism, treatment outcomes, and forensic issues. *Mayo Clinic Proceedings*, 82, 457–471. <https://doi.org/10.4065/82.4.457>.
- Hanson, R. K., & Morton-Bourgon, K. E. (2005). The characteristics of persistent sexual offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical Psychology*, 73, 1154–1163. <https://doi.org/10.1037/0022-006X.73.6.1154>.
- Hatfield, E., & Sprecher, S. (1986). Measuring passionate love in intimate relationships. *Journal of Adolescence*, 9, 383–410.
- Hermann, C. A., McPhail, I. V., Helmus, L. M., & Hanson, R. K. (2017). Emotional congruence with children is associated with sexual deviancy in sexual offenders against children. *International Journal of Offender Therapy and Comparative Criminology*, 61, 1311–1334. <https://doi.org/10.1177/0306624X15620830>.
- Hoerger, M. (2010). Participant dropout as a function of survey length in Internet-mediated university studies: Implications for study design and voluntary participation in psychological research. *Cyberpsychology, Behavior, and Social Networking*, 13, 697–700. <https://doi.org/10.1089/cyber.2009.0445>.
- Holt, T. J., Blevins, K. R., & Burkert, N. (2010). Considering the pedophile subculture online. *Sexual Abuse*, 22, 3–24. <https://doi.org/10.1177/1079063209344979>.
- Houtepen, J. A., Sijtsema, J. J., & Bogaerts, S. (2016). Being sexually attracted to minors: Sexual development, coping with forbidden feelings, and relieving sexual arousal in self-identified pedophiles. *Journal of Sex and Marital Therapy*, 42, 48–69. <https://doi.org/10.1080/0092623X.2015.1061077>.
- Jahnke, S., Imhoff, R., & Hoyer, J. (2015). Stigmatization of people with pedophilia: Two comparative surveys. *Archives of Sexual Behavior*, 44, 21–34. <https://doi.org/10.1007/s10508-014-0312-4>.
- Jankowiak, W. R., & Fischer, E. F. (1992). A cross-cultural perspective on romantic love. *Ethology*, 31, 149–155. <https://doi.org/10.2307/3773618>.
- Johnson, L. (2013). *Content analysis of cognitive distortions in pedophiles' online forum posts* (Unpublished master's thesis). Rowan University, Glassboro, NJ. Retrieved April 24, 2019, from <https://rdw.rowan.edu/cgi/viewcontent.cgi?referer=https://scholar.google.nl/&httpsredir=1&article=1180&context=etd>.
- Langeslag, S. J., Muris, P., & Franken, I. H. (2013). Measuring romantic love: Psychometric properties of the Infatuation and Attachment scales. *Journal of Sex Research*, 50, 739–747. <https://doi.org/10.1080/00224499.2012.714011>.
- Li, C. K. (1991). “The main thing is being wanted”: Some case studies on adult sexual experiences with children. *Journal of Homosexuality*, 20, 129–143. https://doi.org/10.1300/J082v20n01_09.
- Malesky, L. A., Jr., & Ennis, L. (2004). Supportive distortions: An analysis of posts on a pedophile Internet message board. *Journal of Addictions and Offender Counseling*, 24, 92–100. <https://doi.org/10.1002/j.2161-1874.2004.tb00185.x>.
- McPhail, I. V. (2010). *Implicit and explicit emotional congruence with children in sexual offenders against children: A multi-method examination and cumulative meta-analysis* (Unpublished master's thesis). Carleton University, Ottawa, ON, Canada. Retrieved April 24, 2019, from https://curve.carleton.ca/system/files/etd/7f1cd459-d7ab-4a97-98ad-94e501aab666/etd_pdf/fe5b0897429b7c8becd043e7d0052962/mcphail-implicitandexplicitemotionalcongruencewith.pdf.
- McPhail, I. V., Hermann, C. A., & Fernandez, Y. M. (2014). Correlates of emotional congruence with children in sexual offenders against children: A test of theoretical models in an incarcerated sample. *Child Abuse and Neglect*, 38, 336–346. <https://doi.org/10.1016/j.chiabu.2013.10.002>.
- McPhail, I. V., Hermann, C. A., & Nunes, K. L. (2013). Emotional congruence with children and sexual offending against children: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 81, 737–749. <https://doi.org/10.1037/a0033248>.
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, 17(3), 2–19. <https://doi.org/10.1037/a0028085>.
- Riela, S., Bajoghli, H., Xu, X. M., Farnia, V., Golshani, S., & Shakeri, J. (2017). Falling in love and passionate love in an Iranian sample. *Interpersona*, 11, 141–155. <https://doi.org/10.5964/ijpr.v11i2.272>.

- Riela, S., Rodriguez, G., Aron, A., Xu, X., & Acevedo, B. P. (2010). Experiences of falling in love: Investigating culture, ethnicity, gender, and speed. *Journal of Social and Personal Relationships*, 27, 473–493. <https://doi.org/10.1177/0265407510363508>.
- Savin-Williams, R. C., & Vrangalova, Z. (2013). Mostly heterosexual as a distinct sexual orientation group: A systematic review of the empirical evidence. *Developmental Review*, 33, 58–88. <https://doi.org/10.1016/j.dr.2013.01.001>.
- Schaefer, G. A., Mundt, I. A., Feelgood, S., Hupp, E., Neutze, J., Ahlers, C. J., ... Beier, K. M. (2010). Potential and Dunkelfeld offenders: Two neglected target groups for prevention of child sexual abuse. *International Journal of Law and Psychiatry*, 33, 154–163. <https://doi.org/10.1016/j.ijlp.2010.03.005>.
- Seto, M. C. (2012). Is pedophilia a sexual orientation? *Archives of Sexual Behavior*, 41, 231–236. <https://doi.org/10.1007/s10508-011-9882-6>.
- Seto, M. C., Lalumière, M. L., & Kuban, M. (1999). The sexual preferences of incest offenders. *Journal of Abnormal Psychology*, 108, 267–272. <https://doi.org/10.1037/0021-843X.108.2.267>.
- Seto, M. C. (2017). The puzzle of male chronophilias. *Archives of Sexual Behavior*, 46, 3–22. <https://doi.org/10.1007/s10508-016-0799-y>.
- Seto, M. C. (2018). *Pedophilia and sexual offending against children: Theory, assessment, and intervention* (2nd ed.). Washington, DC: American Psychological Association.
- Sprecher, S., Aron, A., Hatfield, E., Cortese, A., Potapova, E., & Levitskaya, A. (1994). Love: American style, Russian style, and Japanese style. *Personal Relationships*, 1, 349–369. <https://doi.org/10.1111/j.1475-6811.1994.tb00070.x>.
- Stephens, S. (2012). *Hebephilic sexual interests in sexual offenders* (Unpublished doctoral dissertation). Ryerson University, Toronto, ON, Canada. Retrieved April 24, 2019, from https://digital.library.ryerson.ca/islandora/object/RULA:5757/datastream/OBJ/download/Hebephilic_Sexual_Interests_In_Sexual_Offenders.pdf.
- Stephens, S., Cantor, J. M., Goodwill, A. M., & Seto, M. C. (2017). Multiple indicators of sexual interest in prepubescent or pubescent children as predictors of sexual recidivism. *Journal of Consulting and Clinical Psychology*, 85, 585–595. <https://doi.org/10.1037/ccp0000194>.
- Stephens, S., Seto, M. C., Cantor, J. M., & Lalumière, M. L. (2019). The Screening Scale for Pedophilic Interest-Revised (SSPI-2) may be a measure of pedohebephilia. *Sexual Abuse*, 29, 619–635. <https://doi.org/10.1016/j.jsxm.2019.07.015>.
- Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review*, 93, 119–135. <https://doi.org/10.1037/0033-295X.93.2.119>.
- Tanner, J. M. (1990). *Foetus into man: Physical growth from conception to maturity*. Cambridge, MA: Harvard University Press.
- Thorne, S. R., Hegarty, P., & Hepper, E. G. (2019). Equality in theory: From a heteronormative to an inclusive psychology of romantic love. *Theory and Psychology*, 29, 240–257. <https://doi.org/10.1177/0959354319826725>.
- Tozdan, S., & Briken, P. (2015). The earlier, the worse? Age of onset of sexual interest in children. *Journal of Sexual Medicine*, 12, 1602–1608. <https://doi.org/10.1111/jsm.12927>.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.