Erotic Target Identity Inversions Among Men and Women in an Internet Sample

Ashley Brown, Edward D. Barker, and Qazi Rahman

Received August 27, 2019. Accepted October 18, 2019.

Contents

Abstract

Introduction: Erotic target identity inversions (ETIIs) are poorly studied paraphilias that involve sexual arousal by the idea or fantasy of being the object of one's sexual desires.

Aim: To conduct a large non-clinical online survey to investigate self-reported sexual arousal, behavioral expression, and psychological correlates of 4 proposed ETIIs.

Methods: A total of 736 natal males and 549 natal females responded to items about self-reported sexual arousal to the idea of acting as an animal (autoanthropomorphozoophilia) or the idea of acting as a child or infant (autonepiophilia), natal males reporting arousal to the idea of acting as a woman (autogynephilia), and natal females reporting arousal to the idea of acting as a man (autoandrophilia). Data pertaining to sexual orientation, childhood gender nonconformity, gender identity discomfort, autism, masochism, and humiliation were also collected.

Main Outcome Measures: The main outcome was a measure of self-reported arousal and expression of the ETIIs being explored using 4 items: arousal level (e3 to 3) when imagining being the erotic target exemplar; frequency of engagement in dressing or behaving like their preferred target (0e4); strength of feeling that they would be better off as the target (0e4); and the frequency of consideration of making physical changes to look or function more like the target (0e4).

Results: Mild levels of reported sexual arousal to the idea of being the preferred erotic target were common among the 4 groups, characterizing about half of them. Gender identity discomfort was associated with autogynephilia, autoandrophilia, and autoanthropomorphozoophilia. Greater gender nonconformity was associated with autogynephilia, autoandrophilia, and autonepiophilia. Autism scores were associated with autoandrophilia and autonepiophilia. Masochism was not associated with ETII scores, but humiliation was.

Clinical Implications: Findings suggest that it may be important to distinguish between subgroups of those with different levels and types of ETII arousal/expression.

Strengths & Limitations: Strengths of this study include the large, non-clinical sample of men and women for the investigation of ETIIs and the inclusion of measures of psychological correlates. The use of an Internet sample with self-report measures may be unrepresentative, although the Internet has the advantage of allowing recruitment from stigmatized or unusual groups. The cross-sectional nature limits our conclusions, as no causal inferences can be made.

Conclusion: The results support the concept of ETIIs as a paraphilic dimension in non-clinical samples and the possible role of gender-related psychological factors.

Key Words: Erotic-Target Identity Inversion; Paraphilia; Sexual Orientation; Masochism; Gender

Introduction

Paraphilias are atypical sexual interests defined as "any intense and persistent sexual interest other than sexual interest in genital stimulation or preparatory fondling with phenotypically normal, physically mature, consenting human partners."1 Understanding paraphilias and their components is important for clinical and https://doi.org/10.1016/j.jsxm.2019.10.018 social reasons. Although such sexual interests may not be pathological on their own, paraphilias are diagnosed as paraphilic disorders if the interest causes significant individual distress (eg, guilt, depression, low self-esteem), psychological dependence interrupting everyday life, or harm to a non-consenting party. People with paraphilic interests are likely to experience social stigma, guilt, and shame about their sexual desires.[2] They may be more likely to experience less fulfillment with their sex lives and relationships or suffer sexual dysfunctions, given their atypical attraction patterns. Further scientific research on people with paraphilic interests could improve their lives through tailored psychological interventions and better clinician and public awareness of atypical sexual lifestyles.

Paraphilias have been classified as (i) preferences for unusual sexual activities or behaviors (eg, sadism), or (ii) unusual erotic targets (eg, children).[1] Another component that has received little scientific attention is erotic target location. Often the target of one's sexual desire is located externally toward other individuals (eg, attraction to men or women), but some people may be aroused by the idea or fantasy of being one of those individuals, known as an erotic target identity inversion (ETII).[3e5] An ETII can become so intense that the individual only experiences arousal by thought of being the erotic target.[6,7] This suggests that the level of sexual arousal toward erotic targets may exist on a continuum (ie, some people having greater, lesser, or equal arousal to external and internal targets). In addition to sexual arousal, ETIIs may include wanting behavioral or physical changes to become the object of desire.[4,5] However, simple sexual role play or arousal toward superficial aspects of the target do not qualify as an ETII.[4]

Autogynephilia is a well-researched ETII, although with some controversy.[8,9] Autogynephilia occurs when natal males are aroused by the thought of themselves being a woman and may change their bodies and behavior to reflect those of a woman.[6,7,10] Heterosexual men who are aroused by the thought of themselves as a woman may wish for a more female-like body through permanent physical transformations. This desire may manifest through feelings of discomfort with sex assigned at birth in some people.[11,12] A possible natal female equivalent of autogynephilia may be autoandrophilia.

Other ETIIs include autopedophilia (arousal by the thought of being a child among pedophiles),[13] autoanthropomorphozoophilia (arousal by the thought of being an anthropomorphic animal),[14] acrotomophilia (arousal by the idea of impersonating or becoming an amputee),[15] and autonepiophilia ("adult baby/diaper lovers"), which is characterized by arousal to thoughts of being a child or infant, differentiated from autopedophilia in that there is no sexual attraction to children. Some people who may have an ETII feel that their erotic desires have little do to with sexual motivation but are related to their identity.[16] This may be due to concerns about stigmatization, as identity labels are perceived as more socially acceptable than sexual desires. Aside from autogynephilia, ETIIs have received little empirical attention.

ETIIs, like other paraphilias, are hypothesized to occur more in men than women[17e19] and are rarely described in women.[17] Money[20] described a case of a woman who experienced acrotomophilia, and First[15] reported that 4 out of 52 participants with acrotomophilia were women. Some transgender men have described their experiences as autoandrophilic,[21] but this has not been found elsewhere.[22,23] However, population studies of sex differences in paraphilias suggest non-negligible female prevalence rates (eg, transvestic fetishism[24,25]). This raises the possibility that ETIIs may exist among women more than previously thought.

Several developmental and psychological factors may be important in the development of ETIIs. Nonheterosexuality has been found to be higher in autoanthropomorphozoophilia (bisexual identities and greater same-sex attraction)[14] and autogynephilia, where persons are not exclusively sexually attracted to women but may be sexually attracted to women and men.[5,26] Greater nonheterosexuality in autogynephilia may reflect sexual interest in the idea of having sex with a man as a woman.[6,27] Whether elevated rates of nonheterosexuality are found in paraphilias in general is unclear.[28] However, any positive associations may point to common correlates (eg, genetic or psychosocial) or indicate greater sexual openness. The male bias in ETIIs suggests a possible role for male gender roles (such as dominance). One study reported that masculinity scores were positively associated with paraphilic arousal in women.[2] Gender nonconforming behavior in childhood and adulthood (eg, a boy experimenting with makeup and cosmetics or female-typical occupational preferences in adult males) is also strongly related to nonheterosexuality.[29] Thus, the somewhat elevated rates of nonheterosexuality among some ETIIs may suggest a role for gender nonconformity. Again, common causal factors may explain these associations.[30]

There appear to be more gender identity problems among ETIIs, including autogynephilia[31] and apotemnophilia.[15] The relative importance of gender identity disturbances and sexual interest as drivers of ETIIs is an ongoing controversy. Sexual interests may be the primary factor in the development of ETIIs or may develop secondarily due to gender identity disturbances.[5] Growing evidence suggests a strong association between autism spectrum disorder (ASD) traits and gender dysphoria in children and adults.[32]

One study[33] reported an association between ASD traits and nonhomosexual adults with gender dysphoria who may be autogynephilic. No studies have systematically tested the association between the above factors and ETIIs to our knowledge. It is also unclear whether any associations with gender nonconformity, gender identity discomfort, sexual orientation, or ASD traits are ETII specific. Further research into these factors may help to narrow hypotheses about putative developmental pathways (biological or environmental) involved in ETIIs and paraphilias in general.

One alternative explanation for ETIIs is that they are motivated by masochism and humiliation rather than ETII-specific sexual arousal or attractions.[4,5,13] Sadomasochism is common among other paraphilias, particularly fetishism and transvestism.[22,24,34] Qualitative reports from autoanthropomorphozoophilics emphasize masochistic and humiliation themes,[14] and sadomasochism[5] appears common in autogynephilia. Although the causal directions are not clear, the case studies reporting themes of force, pain, and subjugation suggest that some ETII-like fantasies might be motivated by masochism. Freund and Blanchard[4] suggested that sexual fantasies motivated by masochism may emphasize the physical and behavioral differences between an individual and their preferred erotic target, and sexual fantasies motivated by an ETII would reflect physical and behavioral similarities between an individual and their preferred erotic target. However, no studies have robustly tested the associations among masochism, humiliation, and ETII-based sexual motivation.

Clinically, it may be important to distinguish between ETIIs in the same way that it is important to distinguish atypical sexual interests from paraphilic disorders. Clarifying the phenomenology of ETIIs and their psychological correlates may help clinicians improve diagnosis and management. For example, persons whose ETIIs are linked to gender identity discomfort or those with co-occurring autism may require different clinical approaches. If ETIIs co-occur in the same individual, as do other paraphilias,[31] this may enhance potential transdiagnostic conceptualizations (eg, point to a set of common sexual arousal processes). Further research may help to separate ETIIs as unusual patterns of sexual interests from illegal paraphilic disorders (eg, autonepiophilia from pedophilia) and so reduce social stigma associated with internal sexual desires.

In this study, we aimed to quantify the concept of ETIIs in a non-clinical Internet sample of men and women. We focused on patterns of reported sexual arousal and expression of autoanthropomorphozoophilia (either furries or those who engage in pet play), autonepiophilia (adult baby/diaper lovers), autogynephilia, and autoandrophilia. We focused on these potential ETII groups given the existing, albeit small, literature or case study indications regarding their existence. We tested for the correspondence between sexual attraction toward external and internal targets, the co-occurrence of different ETIIs, and their associations with theoretically important developmental, gender-related, and psychological factors.

Methods

Participants

Participants were 4,280 adults who resided in the United States, Canada, United Kingdom, or Republic of Ireland and who were part of a larger investigation on the psychological correlates of atypical sexual interests.[35] They were recruited through social media, advertisement posters, and Mechanical Turk. Of these participants, 1,288 indicated some level of sexual interest in the ETIIs being studied, and their results were included in the present analysis. Approximately 63% resided in the United States, 25% in the United Kingdom or Ireland, and 12% in Canada. Regarding sex, responses indicated 549 females and 736 males, with 3 responding "another." Responses to self-identified gender were similar (516 identifying as a woman, 715 as a man, and 57 as another gender). Mean age was 31.02 years (SD ¼ 11.23), and the mean years in full-time education was 16.46 (comparable to a bachelor's degree; SD ¼ 3.36). For sexual orientation, 50.8% (n ¼ 654) identified as heterosexual,

33.6% (n ¼ 433) as bisexual, 5.1% (n ¼ 66) as gay/lesbian, 1.5% (n ¼ 19) as asexual, and 9.0% (n ¼ 116) as other. Most participants were white (83.2%), followed by mixed (6.2%), Hispanic (3.0%), East or South East Asian (2.9%), black (1.9%), South Asian (1.0%), and other (1.8%). Most participants (66.6%) reported no religion, and those who did were primarily Christian (23.7%). Around 3.0% (n ¼ 37) reported ever having been incarcerated. Of these individuals, 29 (78.4% of the incarcerated sample, 0.7% of the larger sample) said they had been convicted of a crime in which they used or threatened force or violence. We did not ask about sexual crimes.

Main Measures

Sexual Arousal and Expression of ETIIs

For each ETII we assessed self-reported sexual arousal and expression of the ETII using items adapted from Hsu and Bailey.[13] These questions were modified based on the ETII being explored. Participants were asked to indicate how sexually aroused they became when thinking about or imagining themselves as erotic target exemplars of the specific ETII category. Responses were on a 7-point scale and ranged from e3 (very repulsive) to 3 (very arousing). Participants were routed to the ETII questions from the larger survey by scoring at least 1 (mildly arousing, on the same arousal

scale) on internal erotic target items. For example, for autogynephilia and autoandrophilia, natal males or natal females, respectively, were redirected to ETII questions if they indicated at least mild sexual arousal to the thought of dressing or acting like a woman (if male) or a man (if female). Similarly, indicating at least mild sexual arousal to acting/dressing like an animal or to wearing a full "fur suit" routed participants to ETII questions about autoanthropomorphozoophilia. For potential autonepiophilia, the erotic target questions asked about arousal to behaving or mimicking a child, being treated like a child, having a partner that takes on a parental role, or wearing diapers/ nappies. Indicating at least mild arousal to any of these items routed participants to autonepiophilia questions.

For terms of ETII expression, participants rated the frequency of engagement in dressing or behaving like their preferred target (0 [never] to 4 [once a week or more on average]), strength of feeling that they would be better off as the target (0 [never] to 4 [always]), and the frequency of consideration of making physical changes to look or function more like the target (0 [never] to 4

[once a week or more on average]). All 4 ETII group questions reached acceptable reliability (autogynephilia, a $\frac{1}{4}$ .722; autoandrophilia, a $\frac{1}{4}$ .652; autonepiophilia, a $\frac{1}{4}$ .592; and autoanthropomorphozoophilia, a $\frac{1}{4}$ .631). The latter 2 were expected to have lower reliability due to the relative impossibility of being able to make substantial changes to look or function more like the preferred erotic target.

We did not ask participants about their identity labels (eg, whether they explicitly identified as furries or adult-babies) in order to focus on a simpler, arousal-based endorsement of the putative ETIIs. Social identity labels are often confounded by social and cultural pressures and so are less reliable indicators of sexually motivated traits. For the purposes of this study, a participant was considered to be part of an ETII group if they (i) had at least some arousal to imagining themselves taking on characteristics of an erotic target (scoring a 1 or more on the routing items, which represented internal target arousal), and (ii) demonstrated arousal to the external erotic target. Requiring both internal and external target arousal in order to be considered as having an ETII is in keeping with prior literature.[5,13,14,31] Thus, individuals in each of the putative ETII groups will be referred to as having "any level of ETII endorsement." For example, for a natal male to have any level of autogynephilic endorsement, they had to indicate arousal to the thought or dressing or acting as a woman (the internal target) and arousal to the thought of having sex with a woman (the external target). We also calculated the number of peoplehavinga "consistent ETII," meaningthat,in additiontothe requirements of having any ETII endorsement, they endorsed all 4 ETII-specific questions (arousal to being the target and at least the lowest positive response score to the 3 expression items).

Measures of Developmental and Psychological Correlates

Sexual Orientation (Attractions and Identity)

Participants responded to a 9-point Kinsey-like scale: 0, always male; 1, predominantly male and only occasionally female; 2, predominantly male but more than occasionally female; 3, equally male and female; 4, predominantly female but more than occasionally male; 5, predominantly female and only occasionally male; 6, always female; 7, no sexual attraction; and 8, prefer not to say. Those who chose "prefer not to say" (n ¼ 2) or "no sexual attraction" (n ¼ 14) were excluded from analyses including sexual orientation. This is because we had no strong a priori hypotheses about ETIIs in those with ambiguous or no sexual attractions or non-responders. Participants also indicated their sexual orientation identity labels as "heterosexual," "bisexual," "homosexual," "asexual," and "other."

Recalled Childhood Gender Nonconformity (CGN)

Participants indicated their levels of CGN from as early as they could remember to 12 years old on 10 items rated on 5-point scales.[36] An example item is "As a child, I enjoyed playing rough physical sports such as football (soccer), hockey, or rugby." Higher average scores indicate more feminine responses. This scale demonstrated good reliability ($a\frac{1}{4}$ .905).

Gender Identity Discomfort

Participants were asked how comfortable they were with the gender they were assigned at birth and responses ranged from 1 (very uncomfortable) to 7 (very comfortable). Lower scores indicated greater discomfort. The purpose of this item was to determine the relationship between gender-identity discomfort and the level of ETII endorsement.

Autism Spectrum Traits

This was measured using the short, 10-item Autism Spectrum Quotient (AQ-10).[37] Higher scores indicated more autismspectrum traits. The ASQ-10 had acceptable reliability in this sample ($a\frac{1}{4}$ .647).

Masochism and Humiliation

We used 2 subscales determined through exploratory factor analysis and bifactor structural equation modeling of a sexual fantasies and behavior questionnaire (adapted

from Seto et al[38]) for a larger study[35] on atypical sexual interests. Participants were asked to indicate how sexually aroused they became when thinking about or imagining specific scenarios. Responses on a 7point scale ranged from e3 (very repulsive) to 3 (very arousing). The masochism subscale included 11 items related to experiencing sexual arousal to pain (eg, "you are being heavily beaten, flogged, or whipped") and submission (eg, "you are someone's slave"). The humiliation subscale included 4 items for giving and receiving humiliation and degradation (eg, "you are having humiliating statements written on your body"). The humiliation and masochism/submission subscales both demonstrated good reliability (a¼ .916 and a¼ .935, respectively). Higher average scores reflected more masochism and humiliation-related sexual interests.

Social Desirability

Social desirability was measured at the end of the larger questionnaire mentioned earlier on the psychological correlates of atypical sexual interests, and it included 2 items: (i) "To what extent do you feel you were able to be completely open in answering this questionnaire?" and (ii) "How accurately do you believe your answers to the above questions reflect your true feelings and behavior?"[39] Responses were on a 4-point scale from 1 (completely) to 4 (not at all). The items had acceptable reliability (a¼ .635).

Procedure

The survey was administered using Qualtrics, and participants gave informed consent. Ethical approval was obtained from the King's College London Psychiatry, Nursing & Midwifery research ethics subcommittee (HR-17/18-5550). The survey first asked about demographic variables, followed by sexual orientation, gender identity discomfort, sexual interests (including ETII questions), autism traits, CGN, and social desirability responding items. For all analyses, results were considered statistically significant if a< .05.

Results

Autogynephilia

A total of 522 natal males indicated arousal to the thought or fantasy of acting and/or dressing like a woman and to the thought or fantasy of having sex with a woman. Of the 522 natal males, 502 identified their gender as a man (96.7%), 3 identified as a woman (0.6%), and 14 (2.7%) identified as another gender (5 did not provide gender identity). Also, 95.2% (n ¼ 497) found the thought of actually being a woman at least mildly arousing (scoring 1 on the arousal measure), and 40.5% (n ¼ 211) found the thought very arousing (scoring 3 on arousal).

In terms of expression (Table 1), an autogynephilic response was significantly positively correlated with frequency of dressing up or behaving as a woman (r ¼ .32; P $<$ .001), feeling as if they would be better off living as a woman (r ¼ .50; P $<$ .001), and considering making permanent body changes to look and/or function more like a woman (r ¼ .25; P $<$ .001). Excluding those responding "never," 68.8% (n ¼ 359) had dressed or acted as a woman, 34.7% (n ¼ 181) said they would be better off living as a woman (also excluding those responding "rarely" to this item), and 30.1% (n ¼ 157) had desired to make physical changes to look or function more like a woman. The average arousal to the thought of being a woman was 6.00 (SD ¼ 1.03), and the average sum score for all 4 autogynephilia items was 12.09 (SD ¼ 3.20).

Regarding correspondence between reported arousal to external and internal erotic targets, we looked at Kinsey scores. Of the initial 522 males, 501 (95.9%) reported having at least equal attraction to men and women (a Kinsey 3 or more). Specifically, 4.8% (n ¼ 25) said their attraction was equally to men and women, 56.1% (n ¼ 293) reported their attraction to be predominantly to women, and 35.1% (n ¼ 183) reported exclusive attraction to women. Most of the 522 males (62.8%) (n ¼ 328) identified as heterosexual, 30.3% (n ¼ 158) as bisexual, 1.5% (n ¼ 8) as homosexual, 0.2% (n ¼ 1) as asexual, and 5.2% (n ¼ 27) as other.

Table 1. Inter-item correlations for 4 ETII questions by ETII group

	Inter-item correlation (95% CI with 5,000 bias-corrected and accelerated bootstrap samples)			
ETII group (N 543)	Question 1	Question 2	Question 3	Question 4
Autogynephilia				
Q1: You are a woman	1	.32* (.15e.48)	.50* (.40e.58)	.25* (.02e.43)
Q2: Acting as a woman	—	1	.33* (.20e.46)	.44* (.31e.56)
Q3: Life would be better as a woman	—	—	1	.54* (.41e.64)
Q4: Make changes to be a woman	—	—	—	1
Autoandrophilia				
Q1: You are a man	1	.21* (.12e.31)	.35* (.25e.43)	.26* (.18e.34)
Q2: Acting as a man	—	1	.39* (.29e.49)	.44* (.34e.54)
Q3: Life would be better as a man	—	—	1	.46* (.38e.54)
Q4: Make changes to be a man	—	—	—	1
Autonepiophilia				
Q1: You are an infant/child	1	.43* (.35e.50)	.31* (.24e.39)	.14* (.07e.21)
Q2: Acting as an infant/child	—	1	.38* (.30e.46)	.17* (.09e.24)
Q3: Life would be better as an infant/child	—	—	1	.32* (.21e.42)
Q4: Make changes to be an infant/child	—	—	—	1
Autoanthropomorphozoophilia				
Q1: You are an animal	1	.37* (.27e.46)	.30* (.18e.40)	.19* (.10e.27)
Q2: Acting as an animal	—	1	.37* (.26e.48)	.40* (.28e.51)
Q3: Life would be better as an	—	—	1	.43* (.31e.53)

ETII ¼ erotic target identity inversion.
*P< .001.

Multiple regression models were computed to regress sexual orientation (attractions), CGN, gender identity discomfort, and AQ-10 scores on autogynephilia sum scores (Table 2). The model was significant, accounting for 14.5% of the variance (90% CI for R^2, 0.091e0.193; R ¼ 0.38, F[4, 429] ¼ 18.23; P < .001). Neither sexual orientation nor AQ-10 scores significantly predicted autogynephilia, but gender identity discomfort and CGN did. This indicated that more discomfort with gender assigned at birth and more feminine childhood behaviors were related to autogynephilia.

In addition to the requirements of being part of the putative autogynephilic group, those with consistent autogynephilia had to indicate arousal to the thought of being a woman, dressing or behaving as a woman one or more times in the past, at least sometimes feeling as if it would be better to live as a woman, and considering making permanent changes to look and function more like a woman at least once. Under these criteria (positive endorsement of all ETII items), 33 natal males had a consistent autogynephilic ETII, or 6.3% of the original autogynephilia sample. Of these, 23 identified as a man (69.7%) and 10 identified as another gender (30.3%). The average sum autogynephilia score for this group was 17.57 (SD ¼ 2.11).

Autoandrophilia

A total of 328 natal females reported at least some sexual arousal to acting or dressing like a man. One individual (0.3%) identified as a man, 95.1% (n ¼ 311) identified as a woman, and 4.6% (n ¼ 15) identified as another gender (1 did not provide gender identity). The majority (70.1%) (n ¼ 230) reported at least mild levels of sexual arousal (scoring at least 1 on arousal response) to the thought or fantasy of being a man, and 14.1% (n ¼ 46) found this to very arousing (scoring 3).

In terms of expression, autoandrophilic response was significantly related to the frequency of dressing up or behaving as a man (r ¼ .21; P < .001), feeling as if life would be better off as a man (r ¼ .35; P < .001), and the consideration of making permanent changes to look and function more like a man (r ¼ .26; P < .001) (Table 1). Excluding those responding "never," 55.8% (n ¼ 182) had dressed or acted as a man, 41.4% (n ¼ 136) said they would be better off living as a man (also excluding those responding "rarely" to this item), and 25.6% (n ¼ 84) desired to make physical changes to look or function more like a man. Average arousal to the thought of being a man was 5.04 (SD ¼ 1.36), and the average autoandrophilia sum score was 10.76 (SD ¼ 3.17).

Regarding correspondence between external and internal target responses, about half (55.5%; n ¼ 182) reported predominant attraction to men (either occasionally or more than occasional attraction to women), 17.7% (n ¼ 58) reported equal attraction

to men and women, and 10.4% (n ¼ 34) reported exclusive attraction to men. With respect to sexual orientation identities, 34.1% (n ¼ 112) of natal females identified as heterosexual, 47.6% (n ¼ 156) as bisexual, 3.4% as homosexual (n ¼ 11), 1.5% as asexual (n ¼ 5), and 13.4% (n ¼ 44) as other.

Multiple regressions were computed among sexual orientation (attractions), CGN, gender identity discomfort, AQ-10 scores, and autoandrophilia sum scores. The model was significant, explaining 29.4% of the variance (90% CI for R^2, 0.211e0.362; R ¼ 0.54; F[4, 276] ¼ 28.72; P < .001). Significant predictors were sexual orientation, AQ-10, gender identity discomfort, and CGN (Table 2). Nonheterosexual attractions, more gender identity discomfort, higher autism trait scores, and more masculine childhood behaviors were related to autoandrophilia.

23 natal females (7.0% of the original 328) had a consistent autoandrophilic ETII (all 4 ETII questions having a positive response). Only 1 (4.1%) identified as a man, 18 identified as a woman (78.3%), and 4 (17.4%) identified as another gender. The average consistent autoandrophilia arousal score was 15.56 (SD ¼ 2.46).

Comparing Autogynephilia and Autoandrophilia

Table 2. Standardized b values for multiple regression analyses predicting ETII group scores

ETII group	Standardized b value Sexual orientation (attractions)	AQ-10	CGN	Gender identity discomfort
Autogynephilia	-.08	.04	.28***	-.14**
Autoandrophilia	.11*	.20***	-.33***	-.23***
Autonepiophilia	-.13*	.14**	.07*	-.05
Autoanthropomorphozoophilia	-.19**	.07	-.01	-.22***

*P< .05; **P< .01; ***P< .001.

AQ-10 ¼ 10-item Autism Spectrum Quotient; CGN ¼ childhood gender nonconformity; ETII ¼ erotic target identity inversion.

The percentage of natal males (24.6%) from the original sample (n ¼ 2124) who endorsed any level (scores of 1 or above on the external and internal target arousal items) of autogynephilia was significantly greater than the percentage of natal females (15.3%) from the original sample (n ¼ 2146) who endorsed any level autoandrophilia (c^2[1, N ¼ 4,280] ¼ 57.81; P < .001; odds ratio [OR] ¼ 1.81; 95% CI, 1.55e2.11). Natal

females had significantly lower autoandrophilia scores (mean ¼ 10.68; SD ¼ 3.13) than the autogynephilia scores of natal males (mean ¼ 12.06; SD ¼ 3.20) (F[1,848] ¼ 62.03; P < .001; h^2_p ¼ 0.068; 90% CI, 0.043e0.097). When comparing across gender identity label, those who identified as a man (24.9%) had higher rates of ETII endorsement than those identifying as women (18.1%). However, those who identified as any other gender had the highest rate of autogynephilia/autoandrophilia endorsement (30.1%), c^2[1, N ¼ 4,272] ¼ 33.92; P < .001; Cramer's V ¼ 0.111; 95% CI with 5,000 bootstrap samples, 0.083e0.142).

Autonepiophilia

In order to be redirected to the ETII questions for autonepiophilia, participants had to state some level of arousal to at least 1 of the following 4 fantasies: behaving like or mimicking an infant or child; being treated like a child (eg, using baby talk); having a partner that acts in some way as a parent (eg, calling them mommy or daddy); or wearing diapers. To be considered part of the putative autonepiophilia group, participants also had to have a positive response to at least 1 of 4 external target arousal questions: engaging in sexual activities with a consenting adult acting like an infant or child; treating someone as a child; acting as a parental figure or caregiver for a sexual partner; or looking at an adult in diapers. A total of 489 adults indicated arousal to 1 or more of these fantasies from each group, with 44.1% (n ¼ 215) being natal females and 55.9% (n ¼ 273) being natal males (1 participant did not provide natal sex). Similarly, 42.4% (n ¼ 206) identified as a woman, 54.7% (n ¼ 266) as a man, and 2.9% (n ¼ 14) as another gender (3 did not provide this information). The majority were either heterosexual (49.5%; n ¼ 242) or bisexual (31.5%; n ¼ 154), and 7.2% (n ¼ 35) reported being homosexual, 1.6% (n ¼ 8) asexual, and 10.2% (n ¼ 50) other.

238 (47.6%) indicated arousal to the thought or fantasy of actually being a child: 118 males and 114 females (1 unspecified); 51 individuals (10.4%) found this to be very arousing (scoring 3 on the arousal response). The average arousal response to this item was 3.76 (SD ¼ 1.99). Autonepiophilia scores were significantly positively related to the frequency of engaging in child-like behaviors (r ¼ .43; P < .001), feeling as if life would be better off living as an infant or child (r ¼ .31; P < .001), and the frequency of considering making permanent changes in order to look or function more like a child/infant (r ¼ .14; P < .001) (Table 1). Approximately half (54.1%; n ¼ 266) had dressed or acted as a child, 25.3% (n ¼ 124) said they would be better off living as a child/infant (excluding those responding "rarely"), and 6.4% (n ¼ 32) desired to make physical changes to look or function more like a child/infant. The average sum score of autonepiophilia was 9.16 (SD ¼ 3.66).

Males had significantly lower scores (mean ¼ 8.53; SD ¼ 3.53) than females (mean ¼ 9.90; SD ¼ 3.64) (F[1, 486] ¼ 17.42; P < .001; h^2 ¼ 0.035; 90% CI, 0.013e0.065). However,

females were significantly less likely than males to endorse any level of autonepiophilia (c^2[1, N ¼ 4,215] ¼ 8.79; P ¼ .003; OR ¼ 0.75; 95% CI, 0.62e0.91). With respect to gender identity, men had significantly lower autonepiophilia scores (mean ¼ 8.47; SD ¼ 3.40) than women (mean ¼ 9.86; SD ¼ 3.78) and those who identified as another gender (mean ¼ 11.71; SD ¼ 3.77) (F[2, 483] ¼ 4.78; P < .001; h^2_p ¼ 0.049; 90% CI, 0.013e0.065). Those who identified as a woman or another gender did not differ significantly.

Regression analysis on the role of developmental factors revealed a significant overall model, explaining 7.80% of the variance (90% CI for R^2, 0.034e0.118; R ¼ .28; F[4, 384] ¼ 8.10; P < .001). Sexual orientation, CGN, and the

AQ-10 significantly predicted autonepiophilia scores, but gender identity discomfort did not (Table 2). The lack of association with gender identity discomfort may be due to autonepiophilia not being tied directly to gender identity expression issues in the same way that autogynephilia and autoandrophilia are. Greater male attractions, more stereotypically female behaviors in childhood, and higher autism trait scores were related to autonepiophilia.

Only 15 participants (3.1% of the initial 488) fulfilled the criteria for a consistent ETII here: 8 males, 6 females, and 1 other. Five of these individuals identified as a man, 8 as a woman, and 2 as another gender. The average autonepiophilia arousal score for this group was 13.7 (SD ¼ 2.79).

Autoanthropomorphozoophilia

As with autonepiophilia, several statements redirected participants to the 4 autoanthropomorphozoophilia ETII questions. These 2 internal target items asked about arousal to being treated or acting like an animal (engaging in "pet play") and arousal to wearing any sort of fur suit (as is sometimes seen in furries). To be considered for the putative autoanthropomorphozoophilia group, participants needed to also indicate arousal to the external target item: watching others engage in animal-like behaviors (eg, dressing like animals; we did not ask about arousal to/sexual interest in real animals). This broadened the definition of Hsu and Bailey,[13] who focused on those that identified as "furries," including those who engaged in non-anthropomorphized animal-like behaviors for sexual arousal. Thus, our ETII questions focused on arousal to becoming an animal more generally.

329 participants indicated some level of arousal to either of the 2 internal target questions and the 1 external target question, with 43.4% (n ¼ 142) being natal females and 56.6% (n ¼ 185) being natal males (2 did not specify sex). 38% (n ¼ 125) identified as a woman, 55.3% (n ¼ 182) as a man, and 6.7% (n ¼ 22) as another gender. 43% (n ¼ 142) were heterosexual, 35.3% (n ¼ 116) were bisexual, 7.6% (n ¼ 25) were homosexual, 3.3% (n ¼ 11) were asexual, and 10.6% (n ¼ 35) other.

Over half (68.6%; n ¼ 286) reported arousal to the thought or fantasy of being a real animal: 101 females and 185 males. 47 (14.2%) reported this to be very arousing. The

mean arousal score for this item was 4.79 (SD ¼ 1.43). Autoanthropomorphozoophilia was significantly correlated with the frequency of dressing or behaving as an animal (r ¼ .37; P < .001), having feelings of life being better if they were an animal (r ¼ .30; P < .001), and the frequency of considering making permanent life or body modifications in order to look or function more like an animal (r ¼ .19; P < .001) (Table 1). With regard to expression, 45.2% (n ¼ 148) had dressed or acted as an animal, 24.7% (n ¼ 81) said they would be better off living as an animal (also excluding those responding "rarely"), and 11.6% (n ¼ 38) desired to make physical changes to look or function more like an animal. The mean autoanthropomorphozoophilia sum score was 9.94 (SD ¼ 3.17).

Natal females had significantly higher autoanthropomorphozoophilia scores (mean ¼ 10.31; SD ¼ 2.30) compared to the natal males (mean ¼ 9.55; SD ¼ 3.29) (F[1, 325] ¼ 4.98; P ¼ .026; h^2 ¼ 0.015; 90% CI, 0.001e0.044). However, natal males were more likely to endorse any level of autoanthropomorphozoophilia than natal females were (c^2[1,

N ¼ 4,270] ¼ 6.64; P ¼ .011; OR ¼ 1.35; 95% CI,

1.07e1.69). These scores also differed significantly by gender identity label (F[2, 326] ¼ 5.96; P ¼ .003; h^2_p ¼ 0.035; 90% CI, 0.007e0.070). Those identifying as another gender had significantly higher scores (mean ¼ 11.64; SD ¼ 3.59) compared to those of men (mean ¼ 9.49; SD ¼ 3.15) but not women (mean ¼ 10.30; SD ¼ 2.96). Women's scores did not differ significantly from men's scores.

In terms of developmental factors, the regression model was significant and accounted for 10.2% of the variance (90% CI for R^2, 0.041e0.155; R ¼ 0.32; F[4, 259] ¼ 7.33; P < .001).

Sexual orientation and gender discomfort were significant predictors, but not CGN or AQ-10 scores (Table 2). Greater male attraction and more discomfort with gender assigned at birth were related to higher levels of autoanthropomorphozoophilia endorsement. Only 19 participants (5 female, 12 male, 2 unspecified; 5.8% of the 329), met the criteria for a consistent autoanthropomorphozoophilic ETII. The mean arousal score for this group was 17.05 (SD ¼ 2.32).

Associations with Masochism and Humiliation

As masochism and humiliation are considered unique, alternative explanations for ETIIs, we regressed these onto the sum scores for each of the ETIIs separately in multiple regression models (Table 3). The simple correlation between masochism and humiliation scores was r ¼ .73, P < .001, but no collinearity was detected in any of the regression models. For autogynephilia, the model was significant (R ¼ 0.19; F[2, 497] ¼ 9.14; P < .001; R^2 ¼ 0.040; 90% CI, 0.012e0.064). Humiliation significantly predicted autogynephilic interests, but masochism did not. For autoandrophilia the regression model was significant, with only humiliation significantly predicting autoandrophilic interests (R ¼ 0.17; F[2, 316] ¼ 4.71; P ¼ .010; R^2 ¼ 0.029; 90% CI, 0.004e0.063). For autonepiophilia, humiliation was a significant predictor, but masochism was not (R ¼

0.30; F[2, 464] ¼ 22.93; P < .001; R^2 ¼ 0.090; 90% CI, 0.051e0.133). The model for autoanthropomorphozoophilia was not significant (R ¼ 0.07; F[2, 311] ¼ .66; P ¼ .517; R^2 ¼ 0.004; 90% CI, 0.000e0.019).

Co-occurrence of ETIIs

Because paraphilias tend to co-occur, odds ratios were used to determine the extent to which endorsement of one ETII was associated with endorsement of another. In the context of the larger sample, a total of 959 (433 females, 523 males, 3 not

Table 3. Standardized b values for multiple regression analyses with masochism and humiliation predicting ETII group scores

	Standardized b value	
ETII group	Masochism	Humiliation
Autogynephilia	-.02	.20**
Autoandrophilia	-.17	.24**
Autonepiophilia	.01	.29***
Autoanthropomorphozoophilia	.06	e.09

*P< .05; **P< .01; ***P< .001. ETII ¼ erotic target identity inversion.

specified) had only 1 ETII group endorsement, whereas 247 endorsed 2 ETIIs (93 females, 154 males) and 65 endorsed 3 ETIIs (21 female, 44 males). Overall, males were almost twice as likely to endorse more than 1 ETII group than females (OR ¼ 1.85; 95% CI, 1.46e2.35; P < .001; n ¼ 4205). Males who endorsed any level of autogynephilia were approximately 3.1 times more likely than those who did not endorse autogynephilia to endorse any level of autonepiophilia (OR ¼ 3.12; 95% CI, 2.39e4.05; P < .001; n ¼ 2092) and 3.2 times as likely to endorse any level of autoanthropomorphozoophilia (OR ¼ 3.22; 95% CI, 2.37e4.38; P < .001; n ¼ 2114). Males who exhibited autonepiophilic arousal were six times as likely to also display autoanthropomorphozoophilia arousal than males without autonepiophilic arousal (OR ¼ 6.02; 95% CI, 4.32e8.38; P < .001; n ¼ 2084). Females with autoandrophilic responses were 2.5 times more likely than females without autoandrophilic interests to also have autonepiophilic arousal (OR ¼ 2.52; 95% CI, 1.83e3.48; P < .001; n ¼ 2123). Autoandrophilic females were also 2.7 times as likely to exhibit autoanthropomorphozoophilic arousal than non-autoandrophilic females (OR ¼ 2.71; 95% CI, 1.86e3.94; P < .001; n ¼ 2137). Females with autonepiophilic arousal were 6.3 times as likely to show autoanthropomorphozoophilic arousal than natal females without this arousal (OR ¼ 6.28; 95% CI, 4.30e9.17; P < .001; n ¼ 2121), although confidence intervals were wide.

Tests for Potential Sampling and Responder Biases

ETII endorsement did not differ by country or age (P > .05). Those who endorsed ETII items had fewer years in education (mean ¼ 16.48; SD ¼ 3.36) than those who did not (mean ¼

16.78; SD ¼ 3.21), but the effect size was small (F[1, 4168] ¼ 7.32; P ¼ .007; h^2 ¼ 0.002; 90% CI, 0.000e0.001). With respect to social desirability scores, participants responding "not at all" to either question were removed (n ¼ 5). There were no significant associations (P < .05), except a weak one between autonepiophilia and the first social desirability item (b ¼ .15; P ¼ .008) but not the second (b¼e.00; P ¼ .946) (R ¼ 0.15;

F[2, 385] ¼ 4.27; P ¼.015; R^2 ¼ 0.022; 90% CI,

0.003e0.049). ETII scores did not differ between social media vs. Mechanical Turk/ non-social media recruitment sources (P > .05). There were no associations with having committed a violent crime or ever having been incarcerated (P > .05).

Discussion

This is the first large non-clinical and non-forensic study of ETII preferences in men and women. Mild self-reported patterns of ETII arousal were common among the 4 groups examined, characterizing about half of them. Reported gender identity discomfort, gender nonconformity, and, more weakly, autism scores were linked with ETII arousal in some groups but not others.

This may due to a closer link between ETIIs such as autogynephilia and autoandrophilia and measures of gender identity discomfort and gender nonconformity, as those ETIIs involve arousal to the thought of dressing or acting as a gender different to their gender assigned at birth. Those who reported "another" selfidentified gender label had higher scores on autonepiophilia and autoanthropomorphozoophilia than those who did not.

In regard to etiological theories involving other paraphilic interests, masochism scores were unrelated to ETII arousal. Regarding reported arousal, there was some variation with stronger endorsement among autogynephilia, autoandrophilia, and autonepiophilia groups compared to autoanthropomorphozoophilia. About 40% of the autogynephilia group reported strong arousal (score of 3) to internal targets but less than 15% did so in the other groups. Rates of consistent ETII responses among the 4 groups were also low. Most of those with ETII arousal (74.5%; n ¼ 959) reported arousal to only 1 ETII, 19.2% (n ¼ 247) reported arousal to 2, and 5.0% (n ¼ 65) reported all 3 possible ETIIs (participants could not report both autogynephilia and autoandrophilia). Odds ratios indicated that the co-occurrence of ETIIs was not statistically unusual (<15% occurrence rate), especially in natal males. Autonepiophilia and autoanthropomorphozoophilia had the highest cooccurrence rates in both females and males. Overall, these results suggest that a non-negligible number of people with sexual interest in particular external erotic targets also have erotic arousal to targets located in their own bodies. The strength of desire to the external target was significantly related to the overall ETII score for each group consistent with the concept of

ETIIs.[3,5,13,14,31] The relative consistency of this pattern across the groups suggests some specificity to the ETIIs (preferences for certain kinds of external targets correspond to the kinds of targets people wish or fantasize to be).

Behavioral correlates of the ETIIs (dressing like the target, thinking one was better off being the target, and wishing to physically become the target) were strongly correlated with ETII arousal across all groups. However, there was a decrease in the strength of responses to the behavioral expression items as the questions became more

extreme. As expected, fewer people endorsed permanent physical changes to become animals and children given the difficulty of achieving this. This pattern of behavioral and arousal responses may support the notion that ETIIs exist on a continuum. More broadly, they support growing calls among scholars that the erotic target location may be another dimension of human sexual orientation, in addition to gender and age (or sexual maturity[28]).

Prevalence rates in this sample suggest the presence of ETIIs in both males and females. In keeping with the literature, males were more likely to endorse any level of all 4 ETII groups.[15,17] However, the number of females that reported ETII arousal was non-negligible, suggesting that researchers need not use allmale samples for the sake of statistical convenience.

In terms of developmental factors, gender identity discomfort was most strongly associated with autogynephilia, autoandrophilia, and autoanthropomorphozoophilia, followed by childhood gender nonconformity with autogynephilia and autoandrophilia (but weakly with autonepiophilia). Nonheterosexuality was associated with autoandrophilia, autoanthropomorphozoophilia, and autonepiophilia, but with small effect sizes, as were autism scores with autoandrophilia and autonepiophilia. Our results show empirical support for a link between gender identity discomfort and ETIIs.[15,31] However, it is not clear whether gender identity issues are primary or secondary factors in ETII development or simply co-occurring or even comorbid phenomena. For example, gender discomfort may be associated with atypical sexual interests more generally instead of ETIIs specifically. Similarly, the association between CGN and some ETIIs is not immediately clear; however, both patterns of associations (gender identity and CGN) could point to a common phenotype, such as sex atypical psychological gender, underpinning atypical or nonheterosexual sexual interests in general.[30] Although our study did not look specifically at transgender identity within the 4 ETII groups, these results suggest that gender-nonconforming individuals or those experiencing some gender identity discomfort may be more likely to experience any type of ETII arousal and that this relationship is not limited to gender-specific ETIIs. The association between autism-like traits, autoandrophilia, and autonepiophilia is novel and could suggest some role for common causal factors (such as prenatal androgen levels) or gender- and age-related obsessionality, such as concern with male clothing or child-like appearances.[33,40]

We found no empirical evidence to support the hypothesis that masochism per se may be an alternative sexual motivation for ETIIs.[14,31] Although there was evidence that ETII endorsement was linked to humiliation, effect sizes were small. The link between humiliation and ETIIs may be due to the tendency for paraphilic interests to co-occur, perhaps representing a broadening of an individual's sexual interests. Alternatively, it is possible that some may use ETIIs as an outlet for sexual humiliation. For example, being treated as a child or an animal may be perceived as humiliating or degrading via the creation of a power imbalance between sexual partners, and this secondary psychological element may be sexually arousing. Or, it is possible that hu-

miliation promotes a form of stimulus contrast and novelty by promoting psychological distance (in sexual fantasy) between the imagined sexual target and the self.

This study added to the current body of sex research on ETIIs in 3 primary ways. First, it investigated the presence of ETIIs in an otherwise unselected Internet sample, including sufficient numbers of females, who are poorly studied in this area.[11,12,14] The demonstration of ETIIs among females shown here is novel and requires further study in terms of causal pathways for any sex differences herein. Second, this study quantified the cooccurrence of several ETIIs, supporting the notion that paraphilias tend to be comorbid. Our results offer tentative support for the hypothesis that paraphilic interests may represent a broadening of one's psychological sexual repertoire in that we found substantial low-level (non-consistent) endorsement of ETII responses.[41] Third, it quantitatively investigated the role of several potentially important psychological correlates, including gender identity discomfort, masochism, and humiliation.

There are several important limitations to this study. The use of an Internet sample may be unrepresentative and unsystematic; however, this is a problem in all studies of atypical sexual interests and rare paraphilias because there is no standardized way to recruit people with these minority preferences. Such people may be socially stigmatized, are likely rare at the population level, and thus difficult to access through conventional means (eg, via word-of-mouth or population sampling). Clinic-referred samples are limited because the presenting condition may often be psychological distress (eg, guilt, depression, anxiety, low selfesteem), sexual dysfunction, or gender identity problems rather than an ETII.[5] People who are concerned about the legality of their sexual desires may not be forthcoming about them. The Internet has the unique advantage of being able to access rare and stigmatized groups in psychological research, particularly those whose feelings and desires are by definition hidden.

It is also possible that our participants were unrepresentative of people with ETIIs in general and not all potential ETIIs were explored (eg, acrotomophilia). Instead of limiting recruitment to those who self-identify with an ETII label, the goal of the current study was to survey those with self-reported ETII arousal patterns. There were no differences in ETII arousal between recruitment sources, but this does not exclude the possibility that people responding to a survey about atypical sexual interests differ in demographic, personality, or other factors compared to normative populations as a whole. Interestingly, ETII arousal was not associated with self-reported criminality.

Our research relied on self-reports, and we did not validate these with objective measures (eg, genital arousal). Our analysis of socially desirable responding suggests that intentional deception or mischievous responses were unlikely. Participation was anonymous and could not result in embarrassment, social stigma, or criminal sanctions. We also used conceptual anchors for our arousal and behavioral expression items, allowing for more precise interpretation. The consistency of the associations between ETII arousal and behavioral expression among the 4 groups was also quite high; however, within each ETII group, we were unable to determine specificity of arousal to kinds of internal targets (eg, different animals among autoanthropomorphozoophilia). It is

also possible that the initial routing questions for each ETII group did not capture the nuances of the specificity of erotic target preference or were simply too broad in scope.

Due to the cross-sectional nature of this study, no causal claims about the development of ETIIs can be made. We may have missed other important developmental factors such as other psychopathology or neurodevelopmental events. We also did not measure psychological closeness to the relevant erotic targets which might be another alternative explanation for the ETIIs—for example, comparing imagining being emotionally close to the target to sexual arousal to the thought of being the target. Also, we did not measure other potential predictors such as guilt or shame, nor did we measure adult gender nonconformity, focusing instead of childhood gender nonconformity.

Conclusion

Future research should investigate the specificity of arousal patterns within each of these unique ETII categories. Moreover, further empirical work is needed to clarify the role of location of erotic arousal towards internal targets in otherwise normative sexual orientation. For example, do typical heterosexual men show greater than expected sexual arousal to thoughts of being women? This may help explain patterns such as heterosexual genital arousal in men who have gynandromorphophilic interests.[42] Similarly, do gay men show greater than expected arousal to thoughts of being men? Comparing gay to heterosexual men would clarify the specificity of any internally directed sexual attraction because gay men are by definition attracted to targets that are similar to self (other males). Such research would enhance our understanding of whether arousal to internal targets is part of the psychological structure of otherwise healthy sexual orientations.

Corresponding Author: Ashley Brown, Psychology Department, Institute of Psychiatry, Psychology, and Neuroscience, King's College London, 5th Floor Bermondsey Wing, Guy's Hospital, SE1 9RT, London; E-mail: ashley.brown@kcl.ac.uk or qazi.rahman@kcl.ac.uk.

Conflict of Interest: The authors report no conflicts of interest.

Funding: None.

Statement of Authorship

Category 1

(a) Conception and Design

Ashley Brown; Qazi Rahman; Edward D. Barker

(b) Acquisition of Data

Ashley Brown

(c) Analysis and Interpretation of Data

Ashley Brown

Category 2

(a) Drafting the Article

Ashley Brown; Qazi Rahman

(b) Revising It for Intellectual Content

Ashley Brown; Qazi Rahman; Edward D. Barker

Category 3

(a) Final Approval of the Completed Article

Ashley Brown; Qazi Rahman; Edward D. Barker

References

1. APA. Diagnostic and statistical manual of mental disorders. 5th edition. Washington, DC: American Psychological Association; 2013.

2. Dawson SJ, Bannerman BA, Lalumière ML. Paraphilic interests: An examination of sex differences in a nonclinical sample. Sex Abuse 2016;28:20-45.

3. Blanchard R. Clinical observations and systematic studies of autogynephilia. J Sex Marital Ther 1991;17:235-251.

4. Freund K, Blanchard R. Erotic target location errors in male gender dysphorics, paedophiles, and fetishists. Br J Psychiatry 1993;162:558-563.

5. Lawrence AA. Erotic target location errors: An underappreciated paraphilic dimension. J Sex Res 2009;46:194-215.

6. Blanchard R. The concept of autogynephilia and the typology of male gender dysphoria. JNervMentDis 1989; 177:616-623.

7. Blanchard R. Nonmonotonic relation of autogynephilia and heterosexual attraction. J Abnorm Psychol 1992;101:271-276.

8. Meyer-Bahlburg HF. Do some men who desire sex reassignment have a mental disorder? Response to Lawrence (2011). Arch Sex Behav 2011;40:655-657.

9. Serano JM. The case against autogynephilia. Int J Transgenderism 2010;12:176-187.

10. Blanchard R. Early history of the concept of autogynephilia. Arch Sex Behav 2005;34:439-446.

11. Blanchard R. Partial versus complete autogynephilia and gender dysphoria. J Sex Marital Ther 1993;19:301-307.

12. Blanchard R. Varieties of autogynephilia and their relationship to gender dysphoria. Arch Sex Behav 1993;22:241-251.

13. Hsu KJ, Bailey JM. Autopedophilia: Erotic-target identity inversions in men sexually attracted to children. Psychol Sci 2017;28:115-123.

14. Hsu KJ, Bailey JM. The "furry" phenomenon: Characterizing sexual orientation, sexual motivation, and erotic target identity inversions in male furries. Arch Sex Behav 2019;48:1349-1369.

15. First MB. Desire for amputation of a limb: Paraphilia, psychosis, or a new type of identity disorder. Psychol Med 2005; 35:919-928.

16. Furth GM, Smith R. Amputee identity disorder: Information, questions, answers and recommendations about self-demand amputation. Bloomington, IN: 1stBooks; 2002.

17. Abel GG, Osborn C. The paraphilias: The extent and nature of sexually deviant and criminal behavior. Psychiatr Clin North Am 1992;15:675-687.

18. Baur E, Forsman M, Santtila P, et al. Paraphilic sexual interests and sexually coercive behavior: A population-based twin study. Arch Sex Behav 2016;45:1163-1172.

19. Joyal CC, Carpentier J. The prevalence of paraphilic interests and behaviors in the general population: A provincial survey. J Sex Res 2017;54:161-171.

20. Money J. Paraphilia in females: Fixation on amputation and lameness; two personal accounts. J Psychol Human Sex 1991; 3:165-172.

21. Kaldera R. Transpersonal: when sex is a drag. Part III. Uncharted territory: FTVs (or girls who get off on being guys). Available from: `http://scarletletters.com/currer` Accessed February 21, 2008.

22. Chivers ML, Bailey JM. Sexual orientation of female-to-male transsexuals: A comparison of homosexual and nonhomosexual types. Arch Sex Behav 2000;29:259-278.

23. Dickey R, Stephens J. Female-to-male transsexualism, heterosexual type: Two cases. Arch Sex Behav 1995; 24:439-445.

24. Långström N, Zucker KJ. Transvestic fetishism in the general population. J Sex Marital Ther 2005;31:87-95.

25. Långström N, Seto MC. Exhibitionistic and voyeuristic behavior in a Swedish national population survey. Arch Sex Behav 2006;35:427-435.

26. Cohen-Kettenis PT, Gooren LJ. Transsexualism: A review of etiology, diagnosis and treatment. J Psychosom Res 1999; 46:315-333.

27. Hsu KJ, Rosenthal A, Bailey JM. The psychometric structure of items assessing autogynephilia. Arch Sex Behav 2015; 44:1301-1312.

28. Seto MC. The puzzle of male chronophilias. Arch Sex Behav 2017;46:3-22.

29. Bailey JM, Vasey PL, Diamond LM, et al. Sexual orientation, controversy, and science. Psychol Sci Public Interest 2016; 17:45-101.

30. Bailey JM, Dunne MP, Martin NG. Genetic and environmental influences on sexual orientation and its correlates in an Australian twin sample. J Pers Soc Psychol 2000; 78:524-536.

31. Lawrence AA. Clinical and theoretical parallels between desire for limb amputation and gender identity disorder. Arch Sex Behav 2006;35:263-278.

32. Glidden D, Bouman WP, Jones BA, et al. Gender dysphoria and autism spectrum disorder: A systematic review of the literature. Sex Med Rev 2016;4:3-14.

33. Pasterski V, Gilligan L, Curtis R. Traits of autism spectrum disorders in adults with gender dysphoria. Arch Sex Behav 2014;43:387-393.

34. Gosselin C, Wilson GD. Sexual variations: Fetishism, sadomasochism, and transvestism. New York: Simon & Schuster; 1980.

35. Brown A, Barker ED, Rahman Q. Development and validation of the atypical sexual fantasies and behaviours scale: a structural equation model. Poster presented at: Society for Personality and Social Psychology Annual Convention. February 7e9; 2019; Portland, OR.

36. Zucker KJ, Mitchell JN, Bradley SJ, et al. The recalled childhood gender identity/ gender role questionnaire: Psychometric properties. Sex Roles 2006;54:469-483.

37. Allison C, Auyeung B, Baron-Cohen S. Toward brief "red flags" for autism screening: The short autism spectrum quotient and the short quantitative checklist in 1,000 cases and 3,000 controls. J Am Acad Child Adolesc Psychiatry 2012;51:202-212.e7.

38. Seto MC, Lalumière ML, Harris GT, et al.The sexual responses of sexual sadists. J Abnorm Psychol 2012;121:739-753. Brown et al

39. Dunne M, Bailey J, Kirk K, et al.The subtlety of sex-atypicality. Arch Sex Behav 2001;29:549-565.

40. Zucker KJ, Nabbijohn AN, Santarossa A, et al. Intense/obsessional interests in children with gender dysphoria: A cross-validation study using the Teacher's Report Form. Child Adolesc Psychiatry Ment Health 2017;11:51.

41. Brown A, Barker ED, Rahman Q. A systematic scoping review of the prevalence, etiological, psychological, and interpersonal factors associated with BDSM. J Sex Res 2019:1-31.

42. Hsu K, Rosenthal A, Miller D, et al. Who are gynandromorphophilic men? Characterizing men with sexual interest in transgender women. Psychol Med 2016;46:819-827.

Ashley Brown, Edward D. Barker, and Qazi Rahman
Erotic Target Identity Inversions Among Men and Women in an Internet Sample
Received August 27, 2019. Accepted October 18, 2019.

Ted Kaczynski had sexual fantasies imagining himself disabled, then a woman, then later fantasies of being to a god like little children, free in the forest. So, analysis of unusual sexual fantasies, their causes, and their effects later in life feels like a useful area of reading for this archive.

Psychology Department, Institute of Psychiatry, Psychology, and Neuroscience, King's College London