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Childhood Gender Nonconformity and Children's Past-Life Memories

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ABSTRACT

Objectives: This study examines childhood gender nonconformity (GNC) in conjunction with the phenomenon in which young children describe memories of a purported previous life. *Methods:* In a case-control study of 469 children reporting past-life memories, we used logistic regression to examine predictors of GNC, measured by documented gender nonconforming behaviors. *Results:* Children who remembered a life involving a different natal sex were much more likely to exhibit GNC than children who remembered a same-sex life. *Conclusions:* After exploring potential explanations, we conclude that past-life memories represent a novel factor that may be associated with the development of GNC.

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Introduction

Despite individual variation within sexes, from an early age boys and girls tend to show differences in behavior, manifesting as divergent preferences for toys, play activities, and playmates (Campbell, Shirley, & Caygill, 2002; Golombok, Rust, Zervoulis, Golding, & Hines, 2012; Hines, 2010). By the age of 3 and even earlier, girls, on average, show more interest in playing with dolls, doll houses, and tea sets and engaging in cooperative play, whereas boys prefer to play with trucks, trains, and toy guns and engage in more rough-and-tumble play (Maccoby & Jacklin, 1987; O'Brien & Huston, 1985; Pasterski et al., 2007; Pitcher & Schultz, 1983; Ruble, Martin, & Berenbaum, 2006; Servin, Bohlin, & Berlin, 1999; Todd et al., 2018; Weisgram, Fulcher, & Dinella, 2014). Such sex-typed toy preferences have been observed even in groups of children as young as 9–17 months, before the age when gendered identity is usually demonstrated (Todd, Barry, & Thommessen, 2017). In addition, by the age of 3, most children tend to prefer playmates of the same sex (La Freniere, Strayor, & Gauthier, 1984; Martin & Fabes, 2001; Zucker, 2005). Such sex-typed behaviors tend to increase as children grow and be stable even through adolescence (Golombok et al., 2012; Martin & Fabes, 2001). However, changes in findings have been seen across time, with both boys and girls but particularly with girls, who have played significantly less with both female-typed toys and male-typed toys in the more recent studies, which may relate to increased efforts by some parents and educators to promote more gender-neutral play (Todd et al., 2018).

Although, on average, boys and girls tend to engage in sex-typed behaviors, some children exhibit considerable departures from such tendencies, which is known as *gender nonconformity* (GNC). GNC is nonpathological, and prevalence estimates suggest that, by age 7, as many as 3.2% of boys and 5.2% of girls exhibit gender nonconforming behaviors (van Beijsterveldt, Hudziak, & Boomsma, 2006). In this article, we focus on GNC in childhood and present a novel factor potentially associated with the development of GNC.

Etiology of GNC

The etiology of individual differences in GNC has been investigated in a number of twin

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studies, which have shed light on the relative contributions of genetic and environmental factors to this trait. Despite variations in methodology (including differences in genetic models tested as well as tools for assessing GNC) and samples (including different ages and geographic sources of the twin samples), results have been somewhat consistent across studies (Alanko et al., 2010; Bailey, Dunne, & Martin, 2000; Knafo, Iervolino, & Plomin, 2005; van Beijsterveldt, Hudziak, & Boomsma, 2006). For girls, there is a significant genetic contribution, with minimal contribution from the environment shared between twins. For boys, the evidence is less consistent, with some studies suggesting that both genetic and the shared environment factors significantly contribute to the variability in GNC (Iervolino, Hines, Golombok, Rust, & Plomin, 2005; Knafo et al., 2005), and other studies pointing to a primarily genetic contribution, similar to that in girls (Bailey et al., 2000; van Beijsterveldt et al., 2006). Although the evidence for both genetic and environmental influences on variability in GNC is strong, the precise nature of these factors remains to be elucidated. Shared environmental factors may include social factors such as parenting style or parent–child interactions (Alanko et al., 2009; Landolt et al., 2004) or biological factors such as prenatal testosterone exposure, which has shown a robust effect on the development of sex-typed behaviors (for a review, see Hines, 2010).

Here we consider a previously unexplored factor (also occurring in childhood) that may influence variability in GNC and which cannot readily be categorized as either genetic or environmental.

Cases of the reincarnation type

The phenomenon of children claiming to remember a "previous life" occurs in many countries around the world (Stevenson, 2001). For the past 50 years, researchers have systematically collected, studied, and reported in the literature such cases under the term *cases of the reincarnation type* (CORTs) and have found common features among them. These children start talking spontaneously about a life as another individual (referred to as the "previous personality" or PP), typically beginning around the age of 2 to 5 and ending by the age of 6 to 8. In some cases, the details provided by the child about the PP are so specific that they allow for the identification of a deceased person who closely matches the account of the child. Sometimes these cases include additional features beyond the child's verbal statements, such as the child being born with birthmarks or birth defects corresponding to fatal wounds on the PP (Stevenson, 1997), or the child exhibiting behaviors, preferences, or phobias related to the PP (Stevenson, 1990). One interesting feature highlighted in previous published case reports occurs when the child remembers a life as a member of a different sex. Many of these children exhibit various gender nonconforming behaviors (Stevenson, 1977b; Tucker & Keil, 2001). In this article, we systematically explore the association between "sex-change" cases of the reincarnation type in childhood and exhibited GNC across our entire collection of cases, and we discuss potential explanations for our findings.

Methods

CORT database

More than 2200 cases of the reincarnation type from various countries have been investigated and documented by the University of Virginia Division of Perceptual Studies according to an investigational protocol developed by Stevenson (1977a). Once a new case is identified, a trained investigator conducts thorough interviews with the child and his/her parents and closest relatives who serve as firsthand informants for the specifics of each case. The goal of these investigations is to evaluate systematically the evidence for different explanations of each case, including those of an anomalous nature. To standardize the collection of evidence across cases and investigators, the investigators use a registration form that includes a checklist of salient features of CORTs to guide the interviews. All interviewed informants provide informed consent and child participants provide assent, and the study is approved by the university's Institutional Review Board for Social and Behavioral Sciences.

Following this evidence-gathering stage, each case is numerically coded by trained coders into 208 variables pertaining to the case (from information provided in the registration form and the investigator's notes), and entered into an SPSS 24 database. Variables encode, among others, demographics of the individual and the PP, additional features of the case such as presence of unusual birthmarks or behaviors associated with the PP, and timeline of development of the case. Specific variables used in this study are described below. The aggregate database has previously been used to explore salient characteristics across multiple cases in an effort to elucidate processes underlying this phenomenon (Sharma & Tucker, 2004; Stevenson & Haraldsson, 2003; Tucker, 2000).

We refer to children's experiences, statements, and behaviors that pertain to the previous individual as "past-life" memories, as we are not attempting here to determine the etiology of this phenomenon. However, for ease of language, we shall omit the quotation marks in the remainder of this article.

Participants and data

Our study sample was pulled from this large database of cases of children who claim to remember previous lives. Specifically, we identified 469 cases (21.0% out of our total database of 2238 cases) for which the following information is available: sex of subject, sex of claimed PP, and information about whether subject exhibits gender nonconforming behaviors. Cases used in this study come from a total of 23 countries, including Sri Lanka (29% of total sample), Turkey (27%), India (10%), Myanmar (10%), the United States (10%), Thailand, Lebanon, Canada, and Brazil (the latter four each constituting less than 3% of the sample), most of which have a cultural belief in reincarnation. The average age at which subjects began speaking about a PP was $M = 2.77$ years, $SD = 1.35$, with the oldest age being 12. Within this sample, cases where the subject and the related PP were of different sex were defined as "sex-change cases" (107, 22.8%), whereas the remaining cases were defined as "same-sex cases" (362, 77.2%). Information about GNC was extracted from field notes of the investigator and/or narratives of subjects or family members, and was coded dichotomously as positive (107, 22.8%) or negative (362, 77.2%). Gender nonconforming behaviors in the cases included wearing clothes/hairstyles or engaging in play more typical of the nonnatal sex (or reluctance to engage in sex-typical play or have same-sex playmates) and gender dysphoria or transgender identification (Stevenson, 1977b; Tucker & Keil, 2001). This variable in our database asks, "Does S[ubject] exhibit behavior related to that of the opposite sex?" This is similar to two items in the Child Behavior Checklist, a standardized parent-reported behavioral questionnaire (Achenbach & Edelbrock, 1981); specifically, Items 5 and 110 ("behaves like opposite sex" and "wishes to be of opposite sex," respectively) have previously been used as indicators of childhood gender nonconformity (Steensma, van der Ende, Verhulst, & Cohen-Kettenis, 2013; van Beijsterveldt, Hudziak, & Boomsma, 2006).

It is important to note that our data collection has spanned decades and different cultures, and during that time scientific and societal focus has shifted from viewing gender as a binary of either male or female to a more fluid gender continuum. These historical and cultural norms have accordingly influenced both the "opposite sex" terminology used in our CORT codebook, as well as perceptions of what constitutes gender nonconforming behavior. However, instructions in our coding manual specifically state than any determination of such behaviors is to be made based on criteria specific to the culture and time. As such, despite variability in shifting gender norms, our indictor of GNC is still compatible with the latest guidelines, which view gender nonconformity as gender expression or identity that differs from normative ones "in a given culture and historical period" (Coleman et al., 2012).

Statistical analysis

We performed a case-control analysis to investigate factors that may be associated with GNC in CORT subjects. In this observational design, individuals were classified based on the presence or absence of gender nonconforming behaviors, and the "exposure" to a potential influential factor

was then compared between the two groups. For the main factor of interest (reported sex-change memories), the association is first presented in a contingency table and was assessed for significance using the chi-squared test. In addition, we used logistic regression models predicting the outcome of interest (GNC) as the dependent variable, from various factors and confounds (treated as independent variables in the models). Initially, each independent variable was considered in a separate univariate model predicting the outcome. If an individual variable reached level of significance of 0.10 or below, it was subsequently included in a multiple logistic regression model, simultaneously including (and controlling for) all predictors with $p \leq .10$. Thus, the p values obtained from multiple regression models show statistical significance for each variable after adjusting for all other variables in the model. For categorical variables, one category was chosen as a reference category, and comparisons for all other categories against the reference are reported. We used Bonferroni corrections to control the Type I error in 12 univariate regressions, where the Bonferroni significant p value was set at 0.004 (0.05/12). In addition to univariate and multivariate analyses in the full sample, we conducted a control analysis in a subset of the CORTs where the statements of the child have been found to match to a high degree details of the life of an actual deceased person. The purpose of this additional analysis was to limit the possibility that the "memories" reported by children are due to fantasy, by focusing only on cases with verifiable statements.

In both univariate and multivariate analyses, the strength of association between a factor and the outcome of interest was expressed as an odds ratio (*OR*) and its corresponding 95% confidence interval (CI). In this context, the *OR* describes the odds that GNC is reported in subjects with sex-change past-life memories, compared to the odds in subjects with same-sex past-life memories. An *OR* of 1 indicates no effect, such that, for categorical factors, GNC is not more likely in either of the categories being compared, while values greater or less than 1 indicate that the category of interest is associated with higher or lower odds of the outcome, respectively.

In uncorrected analyses, a p value was taken as significant if $\leq .05$. All statistical analyses were conducted in SPSS 24.

Predictor variables included in analysis

In addition to sex-change vs. same-sex past-life memories, we considered additional explanatory and confounding variables in predicting GNC. Among those were demographic and developmental factors, such as natal sex of subject, age at first speaking in coherent phrases, and age at first speaking about the PP.

Furthermore, we considered factors which are proxies for the "depth" and salience of the memories, such as presence of emotion during the recall of the past-life memories and an overall scale measuring the extent of a possible anomalous explanation of each case, where a higher score indicates stronger evidence for an anomalous explanation. This "strength-of-case scale" (Tucker, 2000) includes four categories of factors: birthmarks and birth defects, behaviors deemed to relate to the PP, type and number of verified statements made by the child about the PP, and extent of social and physical proximity between the subject and the PP. Although normally included in the scale, for the purposes of this analysis, the variable coding for gender nonconforming behaviors was excluded from the calculation since we were specifically interested in the factors that explain these behaviors.

We also considered confounding factors that may shape expectations about the claims of the child, including initial parental attitudes towards the child's claims (coded as "encouraging or positive" versus "negative or neutral"). In addition, in certain cases (113, 22% of total) the PP and the child are from the same family (i.e., the PP was a relative who passed away before the child was born). Relatedly, in some cases family members have an "announcing dream" in which they are informed about the future identity of the child, and sometimes specifically by a deceased relative who claims that he/she will reincarnate as the child. Although cases in our collection span a large number of countries, Myanmar (or Burma) is unique in that it is the only country where the majority of cases show gender nonconforming

Table 1 Descriptive Statistics for Samples of Cases of the Reincarnation Types.

	Full sample		Solved cases		Solved cases from same family	
Variable	n^a	$M \pm SD$ or %	n^a	$M \pm SD$ or %	n^a	$M \pm SD$ or %
Gender nonconformity (present)	469	22.8%	296	25.0%	202	22.3%
Sex-change memories (yes)	469	22.8%	296	25.3%	202	21.3%
Sex of subject (female)	469	49.5%	296	47.3%	202	50.5%
Age in months at 1st speaking in coherent phrases	384	22.0 ± 10.3	246	22.6 ± 11.0	176	23.4 ± 11.6
Age in months at 1st speaking about PP	469	33.3 ± 16.2	296	33.4 ± 15.6	202	32.6 ± 12.7
Strength-of-case scale	469	11.6 ± 8.9	296	14.2 ± 9.4	202	16.7 ± 9.5
Emotion during recall (yes)	382	38.2%	235	41.0%	169	46.2%
Announcing dream (yes)	410	38.5%	268	52.6%	179	45.3%
Same family (yes)	453	21.0%	294	31.3%	202	0.0%
Mother's attitude towards claims (encouraging)	307	15.6%	197	18.3%	136	11.8%
Father's attitude towards claims (encouraging)	285	11.6%	189	12.7%	141	12.1%
Birthmarks (yes)	469	25.0%	296	27.7%	202	29.7%
Subject from Myanmar (yes)	469	10.4%	296	12.2%	202	6.4%

[a]*n* is number of observations for each variable in each sample.

Table 2 Univariate Analysis of Association Between Type of Memories and GNC (Contingency Table).

	Sex-change		Same-sex	
GNC	*n*	% within column	*n*	% within column
GNC present	86	80.4	21	5.8
No GNC	21	19.6	341	94.2
$\chi^2(1)$	260.82			
p	< .0001			
OR	66.50			
95% CI for *OR*	[34.74, 127.31]			

Note. GNC = gender nonconformity; $\chi^2(1)$ = chi-squared statistic with 1 degree of freedom; *OR* = odds ratio; CI = confidence interval.

behaviors, and about half of all Burmese CORTs occurred in the same family. Thus, we included an indicator variable for cases from Myanmar as a possible confound in explaining GNC in our sample. Finally, we considered the presence of birthmarks related to the PP as a confound of expectations in CORTs, since they may lead a family to associate the child with a particular individual who died with a similar wound.

Although not directly included as a predictor variable, we also considered the effect of verifiability of children's statements on the relationship between "sex-change" vs. "same-sex" CORTs and GNC. Accordingly, we conducted analyses in a subset of data consisting of "solved" cases where the details provided by the child on the PP are rich and sufficient to identify a particular deceased person who corresponds to the description. Some such cases may also include controlled tests of recognition in which the child is presented with multiple-choice options of objects or individuals from the PP's life that were previously unknown to the child.

Results

Descriptive statistics of demographics and analysis variables for our full sample, as well as for two reduced samples used in sensitivity analyses, are presented in Table 1.

The association between type of past-life memories and gender nonconformity was highly statistically significant, with sex-change memories associated with much higher odds of GNC compared to same-sex memories (*OR* = 66.50, CI: [34.74, 127.31]; Table 2). Eighty percent of subjects with sex-change memories exhibited gender nonconformity, compared to only 5.8% of subjects with same-sex memories.

The various factors that could be potential predictors of gender nonconformity were each considered in a univariate regression analysis. Consistent with results from the contingency table analysis above, reported sex-change memories were independently a significant predictor of GNC (*OR* = 66.50, CI: [34.74, 127.31]; Table 3). Other factors associated with higher odds of GNC included: natal female subject (*OR* = 3.06, CI: [1.93, 4.86]), subject showing emotion during recall of past life (*OR* = 2.17, CI: [1.26, 3.74]), a positive maternal attitude towards claims (*OR* = 2.35, CI: [1.17, 4.70]), and a subject from Myanmar vs. other countries (*OR* = 12.08, CI: [6.19, 23.61]). In addition, the child and PP being from same family was marginally significant in predicting GNC (*OR* = 1.63, CI: [0.98, 2.70]). After Bonferroni corrections, only sex-change memories, female natal sex, and subjects from

Table 3 Univariate Analyses Predicting GNC (Regression Models).

Predictor	*N*	Category	*OR*	$Wald_1$	*p*	95% CI for *OR*
Sex-change memories	469	Yes	66.50	160.4	< .0001*	[34.74, 127.31]
		No	–	–	–	–
Sex of subject	469	Female	3.06	22.4	< .0001*	[1.93, 4.86]
		Male	–	–	–	–
Age at 1st speaking in coherent phrases	384	–	.99	1.07	.301	[.96, 1.01]
Age at 1st speaking about PP	469	–	1.01	2.34	.126	[1.00, 1.02]
Strength-of-case scale	469	–	1.01	.58	.445	[.99, 1.03]
Emotion during recall	382	Yes	2.17	7.70	.006	[1.26, 3.74]
		No	–	–	–	–
Announcing dream	410	Yes	1.26	.92	.338	[.79, 2.02]
		No	–	–	–	–
Same family	453	Yes	1.63	3.60	.058	[.98, 2.70]
		No	–	–	–	–
Mother's attitude towards claims	307	Encouraging	2.35	5.81	.016	[1.17, 4.70]
		Neutral or negative	–	–	–	–
Father's attitude towards claims	285	Encouraging	1.93	2.38	.123	[.84, 4.45]
		Neutral or negative	–	–	–	–
Birthmarks	469	Yes	1.09	.11	.740	[.66, 1.78]
		No	–	–	–	–
Subject from Myanmar	469	Yes	12.08	53.18	< .0001*	[6.19, 23.61]
		No	–	–	–	–

Note. GNC = gender nonconformity; *OR* = odds ratio; $Wald_1$ = Wald statistic with 1 degree of freedom; CI = confidence interval.
*Significant after Bonferroni correction.

Table 4 Multivariate Analysis Predicting GNC, $N = 270$.

Predictor	Category	*OR*	$Wald_1$	*p*	95% CI for *OR*
Sex-change memories	Yes	67.54	57.35	<.0001	[22.70, 200.93]
	No	–	–	–	–
Sex of subject	Female	1.62	.93	.335	[.61, 4.34]
	Male	–	–	–	–
Emotion during recall	Yes	1.74	1.19	.275	[.64, 4.73]
	No	–	–	–	–
Same family	Yes	.62	.54	.464	[.17, 2.21]
	No	–	–	–	–
Mother's attitude towards claims	Encouraging	3.00	2.94	.087	[.85, 10.52]
	Neutral or negative	–	–	–	–
Subject from Myanmar	Yes	.36	.63	.426	[.03, 4.53]
	No	–	–	–	–

Note. *OR* = odds ratio; CI = confidence interval; GNC = gender nonconformity; $Wald_1$ = Wald statistic with 1 degree of freedom.

Myanmar remained significant predictors of GNC.

All of the predictors that were significant at alpha 0.10 (uncorrected) on univariate analysis were then included in a multivariate analysis (Table 4). The result was that only sex-change memories remained significantly associated with GNC, controlling for all other variables in the model ($OR = 67.54$, CI: [22.70, 200.93]). Based on these results and the *OR*s in both univariate and multivariate regression models, sex-change memories are an overwhelmingly stronger predictor of GNC compared to other factors assessed in this analysis.

To address the possibility that the association between "sex-change" memories and GNC is due to the child's statements being pure fantasy, we conducted additional analyses in two samples of cases in which the child's statements have been found to correspond to the life of an actual deceased person. The first sample consisted of 296 such "solved" cases and the second sample consisted of 202 "solved" cases while excluding cases occurring in the same family. In the first sample, 81.3% ($n = 61$) of subjects with sex-change memories exhibited GNC, compared to only 5.9% ($n = 13$) of subjects with same-sex memories, and type of case ("sex-change" vs. "same-sex") achieved an *OR* of 69.71 (CI: [31.11, 156.25]) in predicting GNC (Table 5). In the second sample, 83.7% ($n = 36$) of subjects with sex-change memories exhibited GNC, compared to only 5.7% ($n = 9$) of subjects with same-sex memories, and type of case achieved an *OR* of 85.71 (CI: [29.92, 245.57]) in predicting GNC (Table 5). These effect sizes are very similar to

TABLE 5 Univariate Regression Analyses Predicting GNC in Two Samples of "Solved" Cases.

Sample	Predictor	*n*	Category	*OR*	$Wald_1$	*p*	95% CI for *OR*
Solved cases only	Sex-change memories	296	Yes	69.71	106.25	< .0001	[31.11, 156.25]
			No	—	—	—	—
Solved cases which were not in the same family	Sex-change memories	202	Yes	85.71	68.69	< .0001	[29.92, 245.57]
			No	—	—	—	—

Note. *OR* = odds ratio; CI = confidence interval; GNC = gender nonconformity; $Wald_1$ = Wald statistic with 1 degree of freedom.

those obtained in the univariate analysis in the full sample (Tables 2 and 3). The multivariate analyses, although not reported here, similarly revealed that type of case was the strongest predictor of GNC in the control samples as well.

Discussion

Our study demonstrates that among children who describe memories of a past life, a strong association exists between gender nonconformity and memories of a life as a member of a different sex. It is unclear whether one causes the other or if they travel together as two parts of one overall process.

To explore the question of whether the presence of GNC can lead a child to report past-life memories, we considered scenarios in which parents, believing in reincarnation, would be most likely to interpret GNC as an indication that a child had a past life as a member of a different sex. These would include situations in which a family member of a different sex has recently died, ones in which a child is born with birthmarks that are similar to fatal injuries that a family member or acquaintance of a different sex recently suffered, and ones in which a parent dreamed during a pregnancy that a different-sex family member announced a plan to return as the baby. In these circumstances, parents might identify the child as being the previous person reborn and might thereby induce false memories of that person's life in the child. We found, however, that GNC does not show a significant association with birthmarks or announcing dreams. Likewise, the association with the child being from the same family as the previous personality did not remain significant when other factors were controlled for in the multivariate analysis. Similarly, a positive maternal attitude toward the child's past-life memories was associated with GNC, raising the possibility that such mothers might encourage a past-life explanation for the GNC, but this association was no longer significant after accounting for other factors. Thus, we found no association between gender nonconformity and circumstances in which GNC itself would be most likely to lead to the creation of past-life memories.

The possibility that children's past-life statements may be fantasies independent of any parental influence merits further attention as well. Can preexisting GNC lead a child to report past-life memories specifically as a member of a different sex, as if playing out gender nonconforming tendencies in fantasy? Several points argue against this possibility. First, although it is impossible to rule out that in some of these cases the child's statements and behaviors may be rooted in fantasy, in more than half of our cases the idiosyncratic details of the past life have been found to match the life of an actual deceased individual. When limiting our analysis to such cases only, we find an equally strong association between GNC and memories of a life as a member of a different sex. In addition, as has been previously documented (Tucker, 2008), a high percentage of reported deaths in our CORTs are due to violent causes such as accidents, homicide, suicide, and drowning (70% in the full sample and 63% in children exhibiting GNC). As the details of these deaths are often remembered and re-lived by the children, sometimes leading to traumatization (Haraldsson, 2003), it appears unlikely that a child would conjure up a fantasy of a life that ended violently.

It is also true that some evidence suggests that individuals who report past-life memories may be more prone to false memories compared to control subjects of similar age and education, as measured by false recall and recognition in an experimental task (Meyersburg, Bogdan, Gallo, & McNally, 2009). However, the samples and types of reported past-life memories differ considerably

between the study of Meyersburg and colleagues and the CORT phenomenon discussed in this article. CORTs are typically characterized by spontaneously reported, and often verifiable, memories in young children, and these memories are occasionally accompanied by birthmarks, birth defects, and phobias related to the purported previous life. Conversely, the sample in Meyersburg at al. (2009) consisted entirely of adults, with unverified past-life memories of a heterogeneous origin, including memories "recovered" through hypnotic regression, which may be inherently influenced by suggestibility. In fact, when specifically examining cases of spontaneous past-life memories in childhood, across two cultures, Haraldsson (1995, 1997, 2003) found that these children were no more suggestible than age- and sex-matched controls. In addition, in at least one of the samples, children whose memories were verified were less suggestible than both the control group and children with unverified, i.e., "unsolved" memories (Haraldsson, 1997). Taken together, these considerations lead us to doubt that false memories alone, or predominantly, can fully explain the past-life reports in children with gender nonconformity.

So far we have addressed scenarios in which gender nonconformity might cause a child to report past-life memories or to report memories specifically of a life as a member of a different sex. Can the reverse be true? Can past-life memories lead to gender nonconformity? That is a more complex question. Stevenson and Keil (2005) argued that in addition to genetics and environmental influences, previous lives may be a third factor that shapes personality development. Our study may offer some support for such a possibility.

Limitations

Certain limitations of our study should be noted. First, the level of evidence of the association between sex-change past-life memories and GNC is constrained by the observational nature of our study. At best, the reported association is only correlational. Second, the main outcome of interest—GNC—encompassed a broad range of behaviors, and it is unclear if past-life memories of a different sex are differentially associated with specific behaviors. Third, despite the observed association between sex-change past-life memories and gender nonconformity, it is unclear if this association persists as memories of the past life fade, as they typically do.

Conclusions

Among children who report memories of a previous life, gender nonconformity is strongly associated with a purported life as a member of a different sex. This association may offer insights into contributors to gender nonconformity in children who do not express such memories. In clinical settings, when past-life memories are present in conjunction with GNC, it may be beneficial to address this connection in focused psychotherapy. It is possible that currently unidentified hormonal or neurochemical factors could predispose affected children to both phenomena, or as Stevenson and Keil (2005) suggested, perhaps a previously unrecognized factor of consciousness may be involved.

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