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# Intersex in the USA's Best-Selling Undergraduate Psychology Textbooks: Uneven Critique in an Ongoing Scientific and Ethical Crisis

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## Abstract

The field of intersex studies is advancing and requires scholars to update their knowledge and representation of people with intersex variations. To examine how psychology students are taught about people with intersex variations, we reviewed best-selling USA psychology textbooks in introductory psychology ( $n=8$ ), psychology of women and gender ( $n=5$ ), human sexuality ( $n=4$ ), and biological psychology ( $n=3$ ). All textbooks indexed *intersex* or cognate terms, with alternative terms (e.g., disorders of sex development) indexed less frequently. Intersex variations were described as emerging during the stages of sex development, and as challenging binary categories for sex. Several specific variations were commonly described as syndromes with little reference to psychological research or lived experiences. Women and girls with congenital adrenal hyperplasia (CAH) were most clearly framed as “natural experiments” about how nature and nurture intersect. Diverse sex development involving 46 XY genotypes tended to be described as *difference* from norms for male endosex development. However, two textbooks included lengthy narratives of people’s lived experiences as intersex, and photographs of intersex-identified individuals were common. Photo images of the South African athlete Caster Semenya depicted more of her body than did the photo images of other intersex-identified individuals. The textbooks generally included critical reflection on the assumptions of a gender binary, and on the attribution of *ambiguity* to others’ bodies, genetic determinism, the medical gaze, and the sex testing of athletes. We consider how information in these textbooks can shape the representation of intersex among psychology students, and how it may be used to develop more humanizing representations of intersex across all psychology textbooks.

**Keywords** Intersex · Psychology textbooks · Discourse · Thematic analysis · Gender · Sex development · Biological psychology · Othering · Stigma · Medical gaze

Psychology’s role in supporting the well-being of people with intersex variations as clinicians, researchers, educators, and advocates is increasingly recognized (Alderson et al., 2023; Hegarty, 2023; Liao, 2022; Sandberg & Gardener, 2022). For the first time, the American Psychological Association has a sitting Task Force that considers the needs of people with *difference of sex development*. One of its goals is to “propose how APA can best meet the needs of psychologists and students with DSD characteristics” (American Psychological Association, 2019). Accordingly,

we examined how future psychologists are being oriented to regard intersex now by analysing how best-selling USA undergraduate texts framed the topic of intersex. Textbooks serve as a socializing agent for students in their emerging understanding and learning of a field’s concepts, methods, and findings. Whilst analyses of textbook topics have been conducted on representations of sexual minority groups in the past (e.g., Barker, 2007), the Task Force’s recognition of the needs of psychologists and students with intersex characteristics urges the current research. To introduce the study, we review how psychologists’ research interests in intersex have been shaped by historical events and describe our analytic approach.

First, a note on terminology. *Intersex* is an imperfect word that refers both to biological sex traits and the people who have them. Intersex is a relatively familiar term to laypeople (Hegarty et al., 2021a, b), and the textbooks we analyse

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showed a clear preference for this term. We describe “people with intersex variations” rather than “intersex people” to bridge language across textbooks and the focus on “intersex characteristics” rather than “identities” that is emphasized by human rights framings of intersex (Carpenter, 2020). Our use of “people with intersex variations” is also informed by findings that people cope with the knowledge that they possess intersex variations by conceptualizing intersex as a part of who they are, rather than all of who they are (see e.g., Lundberg et al., 2016; Guntram, 2013). Whilst intersex refers to a biological context, it is not a natural kind category with clearly defined boundaries (Delimata, 2019; Dreger et al., 2005). Indeed, the term’s meaning has shifted over time, and intersex is currently conceptualized in terms of variations from typical characteristics observed for female and male sex development (Fox, 2016). Finally, it is easy to over-estimate how useful the term ‘intersex’ is to the folks for whom it refers, among whom no umbrella term is clearly favoured, although few of these folks use the label “disorders of sex development” or “DSD,” consistent with the terminology employed by the APA Task Force (Bennecke et al., 2021; Lundberg et al., 2018). The emergence of the DSD framework for intersex, and the textbook’s accounts of these linguistic and conceptual challenges, are described further below.

### Psychologists’ Interest in People with Intersex Variations

In the years following World War II, psychologists approached people with intersex variations to inform questions about the nature and nurture of sexual orientation and gender (Ellis, 1945; Money, 1955). Given the ethos of psychology at this time, people with intersex variations were described within psychological research as deviations of normative sex and gender development. John Money (1921–2006) was the first psychologist to work in a multidisciplinary paediatric team managing intersex care at Johns Hopkins hospital (see Liao, 2022; Reis, 2021; Gill-Peterson, 2018). Far-reaching treatment protocols developed by his team promoted the assumptions that (1) gender identity is plastic, but only during infancy; (2) quick surgery should align visible intersex characteristics to assigned sex to support parent–child bonding and stable gender identity, and (3) secrecy is the best way for individuals and families to address the risks of stigma associated with intersex variations. Money coined the term “gender identity/role” to organize the logic of these protocols, and he understood sexual orientation as a direct expression of gender. Even in the 1980s, after homosexuality had been de-pathologized and the first standards of care for transgender clients had been written, the logic of these protocols retained gospel-like authority in paediatric medicine (see Kessler, 1990).

People with intersex variations effectively challenged these protocols in the 1990s, arguing for a shift away from concerns with their gender identity and sexuality and instead focusing on the stigma attached to people with intersex variations and medically induced harms (see Preves, 2003). They called for patient-centred care, greater autonomy in decision-making, and a suspension of surgeries conducted solely to “normalize” the bodies of people with intersex variations (Chase, 2003). Simultaneously, the famous case of David Reimer was garnering attention for disputing and disproving Money’s claims about sex and gender development. David Reimer was born a boy but raised as a girl after an injury during a routine circumcision burned off his penis, under the encouragement and guidance of John Money. An account of this case revealed that Money had repeatedly exploited Reimer and his twin brother in a “natural experiment” on the role of nurture in gender development, concealing evidence that Reimer never accepted his assigned gender as a girl despite Money’s claims (Colapinto, 2000). Beyond the scientific fraud and ethical abuse observed in this tragic case, researchers also documented support for intersex advocates’ claims that surgeries to “normalize” infants’ genital appearance have long-term iatrogenic effects (e.g., Minto et al., 2003). By the end of the twentieth century, advocacy groups, media coverage and science all cast doubt on the beneficence of historically unquestioned genital surgeries on children with intersex variations.

In this context, several medical professionals and some patient advocates jointly worked towards the Chicago Consensus statement, which acknowledged that Money’s psychological hypotheses still lacked evidence, and its authors drew on advances in genetic and endocrinological determinants of human sex and gender variation to advocate for better paediatric care (Lee et al., 2006). The Chicago Consensus statement proposed that multidisciplinary teams that included either a psychologist or psychiatrist were the essential basis of ethical medicine, and that parents held ultimate responsibility for medical decisions affecting their own children. It also landed on the umbrella term “disorders of sex development” or “DSD,” as the preferred terminology for what they referred to as “atypical conditions,” and describing the term “intersex” as imprecise and stigmatizing, even though some people had begun to identify with it (Preves, 2003). Medical professionals quickly took up the term DSD (Pasterski et al., 2010), but over time, some medical experts realized that referring to these variations as disorders was itself stigmatizing and modified the term to refer to “*differences of sex development*” (Delimata et al., 2018). Notably, people who would be classified in this way tend not to use this label to describe themselves (D’Oro et al., 2020; Davis, 2014; Johnson et al., 2017; Lin-Su et al., 2015).

Subsequently, intersex advocacy diversified to include both direct confrontation with the medical establishment and “contested collaboration” working gradually towards better

healthcare (Davis, 2015). Among the most controversial topics was the continuation of surgical interventions on infants with intersex variations, long before informed consent was possible. Surveys of clinicians suggested that the uptake of the new DSD language was more immediate than any cessation of surgical practices (Pasterski et al., 2010). In 2014, the United Nations and other international human rights bodies described early surgery on minors with intersex variation as infringing on their human rights. Since then, several other major human rights bodies, including Amnesty International, Human Rights Watch, and the Council of Europe have echoed these concerns (Zelayandia-Gonzalez, 2023).

While advocates disagree on where to draw the line with the medicalization of intersex variations, there is agreement that people with intersex variations and their families require access to good psychological care, yet research has revealed many gaps in the provision of this care (Liao & Roen, 2014; Liao, 2022; Roen, 2019). First, though the Chicago Consensus statement identified the ideal multidisciplinary team for people with intersex variations as including mental health professionals, psychologists report being marginalized in the healthcare of people with intersex variations and their work is often limited to managing the distress caused by the healthcare environment itself (Liao & Roen, 2021). Second, though the Chicago Consensus statement problematizes non-essential “normalizing” surgery on infants, healthcare professionals in multidisciplinary teams cannot always clearly delineate medically essential from non-essential interventions (Hegarty et al., 2021b). Third, though the Chicago Consensus statement proposed patient-driven decision-making, this approach has not been taken up consistently in clinical practice (Sandberg et al., 2019). Instead, critical health psychology research suggests that even after the Chicago Consensus statement was published many people with intersex variations and their families continued to feel rushed through healthcare, without sufficient time to assimilate information and formulate questions (Roen, 2019). In the context of this ongoing scientific and ethical crisis, it is critical to examine how psychology students are being educated about intersex. Students, or their family members, may have variations themselves, and today’s students may be the clinicians and researchers of the future in this area.

## Psychology Textbooks: Our Critical Approach

Psychology textbooks are written to engage students with familiar topics and demonstrate psychology’s superiority over “common sense” views of those same topics, often by describing psychology as a scientific endeavour (Lamont, 2015; Murray, 2014). Controversial topics are not easy subjects to cover in psychology textbooks, and the representation of people with intersex variations is no exception. In

the current analysis we examined specific features of the coverage of people with intersex variations in psychology textbooks. First, intersex refers to biological characteristics, and psychology textbooks often draw upon medicalized and biological discourse to explain these qualities, often in unexamined ways, even omitting citations to support certain claims, as if a biological framework alone is sufficient evidence (Smyth, 2001). For example, medical discourse conceptualizes sex as binary model in which there exists a female sex and male sex that are categorically different (Butler, 1993; Laqueur, 1990). In one classic study, Martin (1991) described how biology textbooks narrated fertilization as a fairy tale romance between an active sperm and a coy waiting egg. In sex education classrooms, teachers and students alike sometimes describe naturally occurring bodily characteristics such as “man boobs” and women’s facial hair as biological “mistakes,” gendering biological attributes and reinforcing the gender binary (Brömdal et al., 2017). Overall, medicalized and biological discourse regarding intersex variations can communicate that some bodies are more “normal” than others even when healthcare professionals try to avoid doing that (Roen, 2019). We examined the psychology textbooks for how they described biological variation in sex characteristics, communicated evaluative judgments as they did so, and describe which concepts of sex they seemed to be invoking.

Second, psychologists are familiar with intersex primarily within a healthcare context (see e.g., Alderson et al., 2023). Abnormal psychology textbooks (Marecek, 1993) and health psychology textbooks (Murray, 2014) both tend to individualize psychological distress and health and illness, using individuals to illustrate diagnoses, obscuring perspectives on how experiences of health and illness are socially patterned and constructed. We attended to whether textbooks prioritized students’ learning about syndrome categories or the lived experience of people who were being categorized by those syndrome categories within the textbooks.

Third, successful textbooks are written to meet market demands, and the demands of the market can constrain criticism of social injustices in psychology textbooks. For example, as Matlin (2010) notes, authors of psychology of gender textbooks have sometimes been cautious about presenting feminist theory to students in the U.S. out of concern for marginalizing more conservative students. Historically, such textbooks focused on sex differences and only later incorporated feminist ideas explicitly (Unger, 2010). In our analysis of best-selling psychology textbooks, we attended to how titles with greater or lesser market share might represent intersex differently.

Finally, our analysis was informed by a concern with privileging the perspective of experts over those of real individuals with variations, and the reduction of social aspects of health and healthcare to the level of the individual. In a

study of 24 instructors of feminist, gender, and sexuality courses (Koyama & Weasel, 2002), intersex was often on the curriculum, but intersex-identified authors were not, and such curricula assumed that students would be unfamiliar with intersex, overlooking that intersex-identified students might be in the classroom. Koyama and Weasel (2002, p. 173) cautioned against reducing intersex to “an interesting biological trivia rather than a site of intimate physical violation,” by which they meant to convey the need to focus on intersex-identified authors’ accounts of controversial medical interventions rather than the use of intersex-individuals as cases to forward nature vs nurture arguments. Our social constructionist reading of the textbooks aimed to examine these texts “unique discursive qualities, narratives, moral themes, and multiple rhetorical strategies” (Morawski, 1992, p. 164), whilst aiming to keep the reality of psychology students with intersex variations in the foreground of the analysis.

## Method

### Selecting Textbooks for Review

We selected textbooks using the Brian Murphy Group’s database on the top-selling U.S. psychology undergraduate textbooks in 2019 available in print or e-books ( $N = 16,180$ ). The popularity and impact of each textbook was estimated from (1) the number of institutions and instructors who assigned it and (2) projected student enrolment for their courses. We aimed to sample twenty best-selling textbooks in four areas: introductory psychology, biological psychology, psychology of sexuality, and psychology of women and gender. We only considered physical psychology textbooks, rather than online resource packages, and only considered textbooks whose total estimated enrolment was at least 1,000 students. We selected the best-selling psychology textbooks across these four areas that met these criteria to balance the goals of (1) sampling textbooks with the largest market share, (2) textbooks which covered the four areas, and (3) sampling 20 textbooks. We considered, but excluded, two best-selling textbooks on relationships (Miller, 2018) and health psychology (Straub, 2019) which did not index relevant content. In two cases, due to difficulties encountered when accessing hard copies of older textbooks, we reviewed newer editions than those available in 2019 (i.e., King, 2022; Pinel & Barnes, 2022). The introductory ( $n = 8$ ), biological ( $n = 3$ ), sexuality ( $n = 5$ ), and psychology of women and gender textbooks ( $n = 6$ ) selected were each assigned a number (#1–20) to facilitate presentation (see Table 1).

## Analysis

For each textbook, the second author noted how many pages indexed terms related to intersex (e.g., “intersex,” “disorders of sex development”) and terms specific to intersex variations (e.g., “Congenital Adrenal Hyperplasia,” “Turner’s Syndrome”). Both authors met in person to read the indexed pages over two days in 2022, taking notes on the text and accompanying images. Our reading was informed by our positionality. The first author is a middle-aged White cis-gender endosex professor of psychology with experience studying and teaching psychology in the USA. The second author is a nonbinary intersex person, undertaking a master’s degree in clinical health psychology in the UK. Notably, the second author kept the perspective of students with intersex variations at the forefront of the analysis and the first author shared discursive critiques that resonated with the second author’s reading experiences. Next the first author drew together a theme for each of the indexed terms and the second author gave feedback. This process followed principles of thematic analysis, which allows health researchers a way of creating sophisticated and accessible analyses of text (Braun & Clarke, 2014).

We organized the analysis largely by the indexed terms, in part because surveys suggest that students might look in the index for the term for a specific variation rather than “intersex” (Bennecke et al., 2021). However, we grouped similar discussion of different genetic variations together into a single theme, and generated a theme on textbook *images*, that we did not anticipate whilst reading the textbook indices. We recognized variability in the text, such as the selective inclusion of lived experience, the reduction of people with intersex variations to “biological trivia” (Koyama & Weasel, 2002), and the use of intersex to frame critical thinking as performative discourse or discursive action (Butler, 1993; Potter & Wetherell, 1987). Where discursive actions were very similar, we aimed to quote from textbooks with larger market share.

## Results

Table 2 presents the number of pages indexed by each individual term, and cumulatively by all terms, within each of the four textbook genres. All textbooks indexed intersex or cognate terms, and CAH was the most frequently indexed variation. In addition, we searched for two other variations sometimes included in the category of intersex (i.e., Smith Lemli Opitz Syndrome and Mayer Rokitansky-Küster-Hauser Syndrome), but found zero content indexed for these terms. As Table 2 shows, coverage of intersex, as measured by indexed pages, was the least elaborate in introductory textbooks. Among the

**Table 1** Textbook Authors, Titles, Sales Rank, Projected Students and Coverage (in Indexed Pages)

Authors	Date	Title and Edition	Sales Rank <sup>a</sup>	Students <sup>b</sup>	#Indexed Pages <sup>c</sup>
Introductory Psychology ( <i>N</i> =8)					
1 Myers & DeWall	2019	<i>Exploring Psychology</i> (11th Ed)	8	18,764	2
2 Grison & Gazzaniga	2019	<i>Psychology in Your Life</i>	9	13,919	3
3 Myers & DeWall	2018	<i>Psychology</i> (12th Ed)	10	13,813	1
4 Laura King	2022	<i>Experience Psychology</i>	24	8,216	1
5 Coon, Mitterer & Martini	2019	<i>Introduction to Psychology</i>	64	5,063	2
6 Gazzaniga	2018	<i>Psychological Science</i> (6th Ed)	65	5,062	1
7 Hockenberry & Nolan	2018	<i>Psychology</i> (8th Ed)	84	4,572	2
8 Weiten, Dunn, & Hammer	2018	<i>Psychology Applied to Modern Life</i>	94	4,416	1
Biological Psychology ( <i>N</i> =3)					
9 Kalat	2019	<i>Biological Psychology</i> (13th Ed)	32	7,345	2
10 Pinel & Barnes	2022	<i>Biopsychology</i>	130	3,664	3
11 Lambert	2018	<i>Biological Psychology</i>	889	986	4
Psychology of Sexuality ( <i>N</i> =4)					
12 Crooks & Baur	2017	<i>Our Sexuality</i> (13th Ed)	91	4,465	5
13 LeVay, Baldwin & Baldwin	2019	<i>Discovering Human Sexuality</i> (14th Ed)	246	2,706	6
14 Carroll	2019	<i>Sexuality Now: Embracing Diversity</i> (6th Ed)	290	2,412	5
15 Lehmiller	2018	<i>The Psychology of Human Sexuality</i> (2nd Ed)	345	2,167	12
Psychology of Women and Gender ( <i>N</i> =5)					
16 Else-Quest & Hyde	2018	<i>The Psychology of Women and Gender</i> (9th Ed)	356	2,114	5
17 Bosson, Vandello, & Buckner	2019	<i>The Psychology of Sex and Gender</i>	535	1,558	13
18 Brannon	2017	<i>Gender</i> (7th Ed)	695	1,236	9
19 Crawford	2018	<i>Transformations</i> (3rd Ed)	739	1,158	10
20 Liss, Richmond, & Erchull	2019	<i>Psychology of Women &amp; Gender</i>	827	1,039	15

<sup>a</sup>Sales Rank = Sales rank among all U.S. textbooks in 2019

<sup>b</sup>Students = Number of students projected to be enrolled in classes using the textbook

<sup>c</sup>Indexed Pages = Number of pages indexed jointly by all search terms

more specialist texts, coverage was most fulsome in Psychology of Gender textbooks followed by Sexuality textbooks, and was least fulsome in Biological Psychology textbooks.

### Theme 1: What is Under the Umbrella? What does “Intersex” Index?

Intersex was defined in three introductory textbooks (#2, 4, 5) in terms of sex characteristics that were “not typical” (King, 2022, p. 294), “suggestive of both sexes” (Coon et al., 2019, p. 693), or that “do not clearly fall into either category of biologically male or biologically female” (Grison & Gazzaniga, 2019, p. 283). The biological psychology textbooks (#9–11) varied in the sex characteristics that they placed at the centre of the description of the category of “intersex,” namely genetics (Pinel & Barnes, 2022), hormones (Lambert, 2018), or genital anatomy (Kalat, 2019). Intersex was thus framed as being about sex and gender, first and foremost, rather than about stigma, human rights, or social justice (see Chase, 2003). We discuss two sub-themes:

(1) troubling binary sex/gender beliefs and (2) uses of related umbrella terms.

#### Subtheme 1a: Does Intersex Trouble Sex/Gender Binaries?

Intersex was used in the textbooks to call attention to the construction of sex and gender categories in several ways. First, intersex falsified the common-sense idea that sex was binary and one-dimensional. Pinel and Barnes (2022) cautioned against the “men are men, and the women are women assumption,” which they shortened to *mamawawa* in their textbook, because this assumption includes “thinking of “male” and “female” as mutually exclusive, opposite categories” (p. 352). Second, intersex was used to introduce the fact that some human societies include more than two gender categories, which tended to reify the link between sex and gender; societies could have more than two genders because sex was, after all, not binary. Third, some textbooks described medical interventions on intersex variations as controversial. Specifically, three psychology of

**Table 2** Mean and Range of Textbook Coverage (in Indexed Pages) by Textbook Sub-Discipline and Search Term

Textbook Sub-Discipline:	Introductory ( <i>n</i> =8) <i>M</i> [Range]	Biological ( <i>n</i> =3) <i>M</i> [Range]	Sexuality ( <i>n</i> =4) <i>M</i> [Range]	Gender ( <i>n</i> =5) <i>M</i> [Range]	All Texts ( <i>n</i> =20) <i>M</i> [Range]
Umbrella Terms					
Intersex	1.50 [1–3]	1.00 [1–1]	5.00 [3–10]	7.20 [3–12]	3.55 [1–12]
Hermaphrodite	0.13 [0–1]	0.67 [0–1]	0.50 [0–1]	1.20 [0–2]	0.55 [0–2]
DSD <sup>a</sup>	0.00 [0–0]	0.00 [0–0]	1.75 [0–4]	1.20 [0–3]	0.65 [0–4]
Specific Terms					
CAH <sup>b</sup>	0.63 [0–3]	2.00 [1–3]	2.25 [0–5]	3.00 [1–5]	1.75 [0–5]
<i>TS</i> <sup>c</sup>	0.25 [0–1]	0.00 [0–0]	2.00 [1–3]	1.80 [0–4]	0.95 [0–4]
<i>KS</i> <sup>d</sup>	0.38 [0–1]	0.00 [0–0]	1.75 [1–2]	1.20 [0–2]	0.80 [0–2]
<i>AIS</i> <sup>e</sup>	0.38 [0–1]	1.33 [1–2]	2.25 [2–3]	2.20 [1–3]	1.35 [0–3]
<i>5αRD</i> <sup>f</sup>	0.00 [0–0]	0.33 [0–1]	0.75 [0–3]	0.60 [0–2]	0.35 [0–3]
All Pages	1.63 [1–3]	3.00 [2–4]	7.00 [5–12]	10.40 [5–15]	5.10 [1–15]

<sup>a</sup>DSD, Disorders/Differences of Sex Development

<sup>b</sup>CAH Congenital Adrenal Hyperplasia

<sup>c</sup>*TS* Turner's Syndrome

<sup>d</sup>*KS* Klinefelter's Syndrome

<sup>e</sup>*AIS* Androgen Insensitivity Syndrome

<sup>f</sup>*5αRD* 5-Alpha Reductase Deficiency

sexuality textbooks (#12, 14, 15) and three psychology of gender textbooks (#17, 19, 20) covered the mistreatment of David Reimer, problematized surgeries conducted for normalizing reasons, and described the opposition of human rights organizations (e.g., United Nations) to medical interventions such as paediatric surgery. Bosson et al. (2019) explicitly described unnecessary normalizing surgeries as “reflecting and reinforcing a cultural worldview that recognizes “two and only two categories of sex” (p. 93). Liss et al. (2019) first introduced intersex with a photograph of protesters led by Sean Saifa Wall and the caption, “Intersex activists have been at the forefront of creating awareness and change” (p. 165).

In contrast, introductory textbooks rarely discussed these issues, and biological psychology textbooks never did. Among the introductory textbooks, two of them (#1, 3) described David Reimer's mistreatment by John Money, but confined the controversy to the past with a reassuring conclusion: “experts generally recommend postponing surgery until a child's naturally developing physical appearance and gender identity become clear” (Myers & DeWall, 2018, p. 159; Myers & DeWall, 2019, p. 168). This conclusion is inaccurate, however, to the extent that experts do *not* postpone those decisions in practice.

Fourth, terms such as “ambiguity” or “ambiguous” were applied uncritically by half of the textbooks to define and discuss intersex bodies or individuals (#2, 5, 6, 7, 8, 9, 13, 14, 16, 19). Two textbooks challenged the concept

of ambiguity directly (#15, 20), and both textbooks urged students to critically reflect on sources that used the term:

You may see other sexuality texts refer to intersexed individuals as having “ambiguous” genitalia...however, keep in mind that any ambiguity is on the part of the perceiver. To intersexed persons, there is nothing “ambiguous” about what is between their legs (Lehmiller, 2018, p. 121).

However, for some scholars, the term “ambiguous genitalia” doesn't merely reinforce the idea of a gender binary but depends on a binary. As stated in Liss et al. (2019): “nature doesn't decide where the category of “female” ends, and “male” begins. Humans decide. Biology is not the only basis for determining sex” (p. 173).

Fifth and finally, one introductory textbook (#7) left the last word on intersex to an intersex person, who voiced a critique of the gender binary:

Ultimately every single person is confined, conflicted, marginalized, and minimized in some way by the arbitrary, unreasonable, and impossible artificial gender expectations of our society. This is no less true for [cisgender individuals] than for [intersex individuals]. Whenever we show them how part of their story are like parts of our story and vice versa, we knock another brick out of the gender wall (Costich, quoted in Hockenberry & Nolan, 2018, p. 388).

### Subtheme 1b: “Intersex” and Related Umbrella Terms

“Intersex” was indexed far more than alternative umbrella terms (see Table 2). The indexes to nine textbooks included *hermaphrodite* or cognate terms (#5, 9, 11, 12, 13, 17, 18, 19, 20). However, these terms were also problematized in some textbooks by describing this term as outdated (#12), appropriate only when describing animals (#13) or directing students to the index entry for “intersex” (#5). One biological textbook used the term most often (#9), included an index entry for “Hermaphrodite individual who appears as a mixture of male and female anatomies,” and introduced the term “true hermaphrodite” as the correct contemporary term for referring to individuals with both ovarian and testicular tissue, whilst cautioning students not to believe reports of any “hermaphrodite” said to have impregnated themselves.

Only three psychology of sexuality textbooks (#12, 13, 14) and three psychology of gender textbooks (#17, 18, 20) indexed the term “DSD” as suggested by the Chicago Consensus statement. Two psychology of sexuality textbooks (#12, 13) defined people with intersex variations as a subgroup of those with DSD “who possess biological attributes of both male and female sexes” (Crooks & Baur, 2017, p. 126), or who “end up in a state that is intermediate between male and female forms or has some features of both” (LeVay et al., 2019, p. 94), whereas one psychology of sexuality textbook (#14) equated the terms disorder and difference when referring to intersex. Across the 20 textbooks, one textbook (#20) was most critical of the DSD neologism, describing the term as falling short of the intended “enlightened advancement” because “some individuals with intersex conditions worry that the new language continues to stigmatize” (Liss et al., 2019, p. 172).

In sum, *intersex* was constructed as troubling students “common sense” binary thinking via scientific facts about sex, gender, medical treatment, language, or intersex people’s own voices. Textbook authors who used the term “hermaphrodite” largely described it as an outdated pejorative term when applied to humans, with a notable exception. Divergent relationships between the concepts of DSD and intersex were constructed in psychology of sexuality textbooks. The next three themes of our analysis address specific intersex variations.

### Theme 2: Sex Chromosome Variations: Genetic Determinism and Lived Experience

Genetic variations in sex characteristics were often the first variations described. Both Turner’s Syndrome (hereafter TS) and Klinefelter’s Syndrome (hereafter KS) were each indexed in three introductory texts (#1, 2, 5), none of the biological texts, and all sexuality texts (#12–15). TS was indexed in three psychology of women and gender textbooks

(#18, 19, 20) and KS in four (#17, 18, 19, 20). Other chromosomal variations, such as 46 XXX (also called triple X syndrome), 46 XYY (also called Jacob’s syndrome), and 46 XXXY were described only occasionally. TS and KS were typically described together, and each in terms of their distinct sex chromosome patterns (i.e., 46 XO and 46 XXY respectively) and common characteristics.

In three introductory textbooks (1, 2, 5), variations were organized by narratives of human sex development beginning with conception and/or fertilization. Accordingly, genetic variations were often presented before other variations. Two textbooks (#3, 5) described TS and KS with only a sentence or two, but one textbook (#2) included a whole paragraph on the symptoms, hormonal treatment, and incidence rates of each variation (i.e., 1 in 2,500 births for TS and 1 in 500–1000 births for KS). The four sexuality textbooks elaborated on these descriptions of TS and KS as biological syndromes chiefly by discussing possibilities of fertility among women with TS (#14, 15), and sex drive and sexual orientation among men with KS (#12, 13). One textbook (#14) came closest to describing the lived experience of learning about one’s variation by noting possible hormonal treatment for fertility for girls with TS (p. 86), and noting how KS is often detected when men engaged fertility treatment services (p. 84). However, the psychological impact of discovering one’s limited fertility resulting from TS or KS was not described in detail in any sexuality textbooks.

Three psychology of women textbooks (#18, 19, 20) engaged with questions of how genetic determinist thinking can lead to the stigmatizing of people with sex chromosome variations. All three textbooks problematized “sensationalist reports” of “faulty research” (#18, p. 87) or “media hype” that showed “simplistic thinking about genetic determinism” (#19, p. 133) that had wrongly associated men with KS with aggression and criminality, stating that such research has “contributed to stigma” (#20, p. 167). Nonetheless, genetic determinism is evident elsewhere in these same textbooks. One of these textbooks (#19) described KS as a “chromosomal irregularity” characterized by “lower intelligence and educational level” and the “cognitive deficits” of girls with Turner’s syndrome in areas such as math aptitude and performance on mental rotation tests (p. 132, 135). Another textbook (#18) used normalizing language to endow sex development with intentionality, describing TS as a “*mis-take* in chromosome number” and described how individuals with KS may “*fail* to develop the body shape typical of men” (p. 89, emphasis added). With greater insight into the ways that stigma might be expressed through biomedicine, one textbook (#20) described research showing that expectant parents were likely to terminate a pregnancy if they received a diagnosis of KS and described specific learning difficulties as a possible, rather than inevitable, or prototypical, psychological outcome of these genetic variations (p. 167).



Finally, only one textbook (#20) included a full-page feature of a person with intersex variation, narrated by Jessica Lord Bean who has TS. It was focused on her journey to adoptive motherhood (p. 138): “A child born to another woman calls me mom. The depth of the tragedy and the magnitude of the privilege are not lost on me.” This narrative of personal growth and ambivalent reflection stands out among descriptions of genetic variations in these textbooks, describing infertility as a biological attribute that a woman discovers rather than as a symptom of a syndrome. Whilst this narrative may help orient students towards thinking about the psychological lives of folks with TS, no equivalent first person account of KS appeared in any text (Table 3).

### Theme 3: Congenital Adrenal Hyperplasia (CAH)— Natural Experiments and the Medical Gaze

CAH was indexed by three introductory textbooks (#2, 5, 8), all three biological textbooks (#9–11), three sexuality textbooks (#13, 14, 15), and all five psychology of gender textbooks (#16, 17, 18, 19, 20). In introductory textbooks, CAH was described as a syndrome caused by “abnormally high levels of androgens during prenatal development” (#7, p. 385), as a “problem” (#5, p. 349), and as “conflicts in hormones” that lead to “genitals that are not clearly male or female” among women and girls (#2, p. 384).

In more specialized textbooks, women and girls with CAH were described as “good participants for studies of the effects of fetal androgen exposure on psychosexual development” (#10, p. 60) or simply as a “natural experiment” (#16, p. 230). In one biological psychology textbook, CAH

was described as the most common cause of the “condition” of intersex and most often referred to research with women and girls with CAH as a natural experiment (p. 339). Most research on girls and women with CAH covered in this textbook focused on gendered attributes and behaviors, including preferences for typical girls’ and boys’ toys, mathematical and spatial skills, interest in sports and glamour magazines, levels of physical aggression, interest in infants, liking for rough sports, engagement in male-dominated professions (such as truck driver), and gender identification; however, unlike several other textbooks (#11, 13, 14, 16, 18, 19), this textbook does not mention studies on the sexual orientations of women with CAH. It is important to consider that a student with CAH, whose introductory textbook had already constructed her body as a problem, might feel stigmatized by this narrow framing of her body and psychological experience, positioning her body as an inherent conflict between nature and nurture.

Textbooks did mention aspects of the lived experience of CAH, such as parental concerns or the possible experience of infant surgery. Two textbooks framed these matters not as important lived experiences for psychology students to learn about, but as variables that would confound the use of women and girls with CAH as “natural experiments” for research (e.g., Else-Quest & Hyde, 2018, p. 230; Pinel & Barnes, 2022, p. 360). Going beyond this narrow framework, Bosson et al., (2019, p. 88) raised ethical questions about surgery for girls with CAH, and Liss et al., (2019, p. 173) also described the risks of the steroid dexamethasone, prescribed to some pregnant women to prevent the effects of CAH on antenatal development.

**Table 3** Key Themes of the Analysis

Theme	Examples	Indexed Terms
1. What is Under the Umbrella? 1a: Does intersex trouble sex/gender binaries? 1b: “Intersex” and related terms	“a cultural worldview that recognizes “two and only two categories of sex” “some individuals with intersex conditions worry that the new language continues to stigmatize”	Intersex Disorders/Differences of Sex Development Hermaphrodite
2. Sex Chromosome Variations: Genetic Determinism and Lived Experience	“mistake in chromosome number” “The depth of the tragedy and the magnitude of the privilege”	Turner’s Syndrome Klinefelter’s Syndrome
3. CAH: Natural Experiments and the Medical Gaze	“good participants for studies of the effects of fetal androgen exposure on psychosexual development” “dehumanization that occurs when medical providers treat a person’s body separate from that person’s sense of self”	Congenital Adrenal Hyperplasia
4. 46 XY Variations: The Failure to Become Male vs. Discovering Difference	“a zygote with XY sex chromosomes – genetically male—may be born with what looks like a vagina.” “I realized that AIS could be part of my life without dominating it, and ... the loneliness I felt abated.”	Androgen Insensitivity Syndrome 5-alpha Reductase Deficiency
5. Photographs of Individuals: Regarding Caster Semenya Differently		None

Finally, the bodies of women and girls with CAH were made particularly visible to readers in the images included in four textbooks (#9, 11, 13, 19). These images took the form of a cartoon-style drawing (#9, p. 339), a pair of anatomy diagrams (#19, p. 136), a photograph of the external genitalia of a girl with CAH (#13, p. 95), and a pair of photographs showing the external genitalia of a girl with CAH before and after surgery (#11, p. 318). In contrast to these objectifying portrayals, one textbook (#20) introduced the concept of the medical gaze as “a process of dehumanization that occurs when medical providers treat a person’s body separate from that person’s sense of self” (p. 174), and described the experience of a woman with CAH who had been observed and touched by 30 health professionals, none of whom made eye contact with her, along with a photograph of six medical doctors attending to and staring at a patient in a hospital bed. Students were encouraged to reflect on how the medical gaze would make them feel:

Many intersex and trans individuals experience the “medical gaze” while receiving health care. Have you ever experienced the medical gaze? Would having many health-care professionals staring at your body make you more cautious about seeking medical treatment? (p. 174).

Finally, there were significant gaps in the descriptions of CAH as a medical syndrome, which can be life-threatening. An infant born with CAH has a 75% chance of an adrenal crisis in each of the first five years of life, which can be fatal if not addressed quickly (Fleming et al., 2017). Simply giving a diagnosis of CAH does not equip parents to talk about their child’s variation with others, leaving them to figure out social strategies to ensure both their child’s physical safety and their privacy (Lundberg et al., 2017). Concerns with balancing autonomy and privacy continue for school children with CAH (Carroll et al., 2021). It is important to consider that these schoolchildren with CAH may become psychology undergraduates who read about themselves in the pages of these textbooks. Through those texts they would learn that their classmates are being socialized to think about CAH in limited and potentially stigmatizing ways. None of these aspects of the lived experience of CAH were described in any textbook.

#### **Theme 4: 46 XY Variations: The Failure to Become Male vs. Discovering Difference**

This theme draws together descriptions of two variations involving 46 XY genotype: Androgen Insensitivity Syndrome (AIS) and 5-alpha reductase deficiency (5 $\alpha$ RD). AIS was indexed in two introductory textbooks (#2, 5) and all the biological (#9–11), sexuality (#12–15), and gender (#16–20) textbooks. 5 $\alpha$ RD was indexed in one biological textbook

(#11), one sexuality textbook (#15), and two gender textbooks (#18, 20).

Descriptions of AIS in introductory textbooks briefly described sex development in AIS as a conjunction of 46 XY genotype and androgen insensitivity. Although the textbooks consistently describe people with 46 XY as female-identified, their sex development was largely narrated as *difference* from 46 XY endosex male development, reflecting mamawawa thinking and attributing essential maleness to the XY chromosomes of women with AIS; the women with AIS being described not only as having *male genes*, but as being *genetic males*. For example, “Conversely, genetic males (XY) with a syndrome called androgen insensitivity syndrome ...” (#7, p. 385); “By contrast, a zygote with XY sex chromosomes – genetically male – may be born with what looks like a vagina” (#2, p. 385); “A genetic male with low levels of testosterone or a deficiency of testosterone receptors may develop a female or intermediate appearance” (#9, p. 339). Two textbooks (#9, 14) stated that the outdated term “testicular feminization” and AIS were synonyms. One textbook (#9) also included an in-text question for students that requires them to conceptualize a woman with AIS as a “genetic male” to answer it correctly.

This deficit model portrayal can lead to sex development in AIS being described in terms of what it is not, or what it might – or should – have been, instead of what it is. Drawing from medical case histories, one textbook (#10) described the sex development of “Anne” in the following ways: “her body could *not* respond,” “her *unresponsive* androgen receptors,” “as if *no* androgens had been released,” “*without* the effects of testosterone,” “her testes *could not* descend,” “*no* scrotum,” “Anne *did not* develop,” “*in the absence* of the counteracting effects,” “adrenal androstenedione was *not able* to stimulate the growth of pubic and axillary hair” (p. 359, emphasis added throughout). In another textbook, AIS development was analogized as follows: “their bodies are deaf to these hormones” (Brannon, 2017, p. 89).

Several textbooks also leaned on a genetic determinist narrative that delegitimized the bodies of women with AIS. For example, one textbook describes women with AIS as having genitalia that “looks like” a vagina (#2, p. 385). One textbook (#15, p. 123) stated that, “The end result” of sex development “is a body and genitals that have a female *appearance*” and another textbook (#12, p. 128) stated that the baby’s female genitals are not normal, but “normal-looking.” These constructions echo Butler’s (1993) argument that embodiment is often delegitimized by describing it as a copy or flawed imitation of some original.

These descriptions also recalled Laqueur’s (1990) continuous one-sex model—the sex development of women with XY genes seemed to have been narrated within an androcentric understanding of sex in which male sex development is normative and female development is viewed as inferior. Our

reading of how sex development in 5 $\alpha$ RD was described in these textbooks led to similar conclusions. In one textbook (#20), people with 5 $\alpha$ RD were also described as falling short of endosex male development in a manner similar to the descriptions of AIS described above:

because they *don't have* sufficient 5-alpha reductase, *they're unable* to convert testosterone to dihydrotestosterone and, therefore, *cannot masculinize* their external genitalia in utero (p. 170, emphasis added).

However, the emergence of male phenotypic traits at puberty in 5 $\alpha$ RD takes the narrative in new directions. Textbooks varied in describing adult gender identities among people with 5 $\alpha$ RD after male-typical physical traits emerge at puberty, with some describing them as prototypically male (#11, p. 124), female to a greater extent than researchers have acknowledged (#18, p. 90), a third gender category in some cultural contexts (#18, p. 90; #11, p. 316), or risking the stigmatization of their entire families (#20, p. 170). One textbook (#15, p. 124) described how “testosterone production ramps up” during puberty, sex characteristics typically associated with men emerge, most switch to a male identity, and those that do “are usually sexually interested in women.” Here, testosterone’s heroic achievements in producing endosex male characteristics shift the narrative from tragedy to triumph: “Men with 5 $\alpha$ RD may be capable of penetrative intercourse and produce viable sperm but this varies with persons.”

Alternative narratives to this androcentric framing of sex development were also evident. Textbooks also described how events unfold when girls or women with AIS learn about their variation. One textbook described Phoebe Hart’s discovery of her AIS (# 11, pp. 317–318). One textbook (#20, p. 174) included an account of a woman with AIS who discovered that she was deceived into thinking her gonadectomy operation was a cancer treatment. One textbook (#16) described how elite athletes Maria José Martínez-Patiño and Dutee Chand had been subjected to sex testing. Whilst biological sex development was most often framed in terms of a *failure to become male*, these *discovery narratives* describe women and girls making sense of surprising biological discoveries and developing autonomy in psychosocial contexts.

One textbook (#13) provided the most extensive discovery narrative with a full-page essay by psychiatrist Kat Dalke, which described how collapsing in the shower at the age of seven led her to a surgeon’s discovery of atypical genital anatomy and XY chromosomes. After this incident, Dalke’s parents decided to tell her about her AIS only gradually, though her sister’s education in biology classes lead them to do so when Kat was 16, faster than they had intended. Dalke describes her reaction to the discovery as follows:

I was devastated and angry, feeling betrayed by my parents and my own body. Looking back, I know those emotions came from a fear of what was wrong with me, plus the eternal conflict of adolescence; someone else deciding what’s best for you. (LeVay et al., p. 96)

The essay ends happily with Dalke describing how she met her future husband at college and became involved in a support group: “It was only after finding the AIS Support Group, the summer before college, that I realized that AIS could be part of my life without dominating it, and that the loneliness I felt abated” (LeVay, p. 96). Similar narratives of understanding one’s AIS, and the genetic variation that characterizes it as only one part of the self, have been reported by young European women in psychological research (Lundberg et al., 2016).

In Dalke’s narrative, atypical gonads and genetics were discovered, and she is explicit that they introduced the threat of fear and isolation into her life. However, across adolescence and into adulthood, social events involving parents, a sibling, a partner, and a support group, enabled a sense of identity. Dalke’s discovery narrative stands apart from most of the textbook accounts of sex development in AIS that we observed. The events that she narrates should also remind psychologists that classroom accounts of AIS or other variations may travel home and get talked about, impacting how young people with variations discover facts about their bodies (whose discovery other family members may be attempting to delay or control).

### Theme 5: Photographs of Individuals: Regarding Caster Semenya Differently

In this theme we focused on photographs of intersex individuals used to illustrate the text. Twenty-eight visual images illustrated the written information pertaining to intersex across the 20 textbooks. We have already described four textbooks that included images that invited a ‘medical gaze’ on CAH (#9, 11, 13, 19) and one image that challenged it (#20). Two introductory textbooks (#2, 6) included abstract diagrams using abstract continua to that explain the existence of intersex as between male and female sex development. Two textbooks included photographs of David Reimer, who was an endosex man at birth (#14, 17). In this theme we focused on the remaining 19 images which were photographs of intersex individuals; two each of model Hanna Gaby Odiele (#7, 13) and athlete Maria José Martínez-Patiño (#16, 17), and one each of Jessica Lord Bean (#19), Kat Dalke (#13), Dutee Chand (#16), Phoebe Hart (#11), Sara Kelly Keenan (#2), Sean Saifa Wall (#20), and Dr Catherine Ward-Melver (who has Turner Syndrome, #13). Eight images of South African Caster Semenya, “the world’s

most scrutinized athlete,” appeared across the twenty textbooks (c.f., Karkazis & Jordan-Young, 2018). Four images of Semenya appeared in introductory textbooks (#1, 2, 3, 8), one appeared in a human sexuality textbook (#15) and three appeared in psychology of women and gender textbooks (#17, 19, 20).

The images of Semenya were distinct in several ways. First, Semenya is one of only two Black intersex individuals included (along with Wall) across the textbooks, and one of only three non-Americans (along with Martínez-Patiño and Chand, the other two athletes). Second, Semenya was always portrayed alone or with competitors, whereas other intersex individuals tended to be portrayed with supportive others in these photographs, such as a husband (#2, p. 383), their children (#19, p. 138), or fellow protestors (#20, p. 165). Third, Semenya was consistently photographed in whole body shots wearing athletic gear rendering her physical body particularly visible. Indeed, we examined the 18 photographs of intersex individuals for facial prominence operationalized in terms of the ratio of (a) the distance from the top point of their head to their chin to (b) the distance from the top point of their head to the lowest part of the body visible within the photograph (Archer et al., 1983). Caster Semenya was much less facially prominent,  $M = .20$ ,  $SD = .03$ , than were the other intersex individuals,  $M = .34$ ,  $SD = .10$ ,  $t(17) = 3.72$ ,  $p = .002$ , Cohen's  $d = 1.85$ . Intersex athletes who have been subjected to invasive sex testing are not necessarily shown with their bodies on display in these ways (e.g., #16, 17).

Swarr (2023) argues for *intersex decoloniality*, problematizing visual attention to the body of Caster Semenya. Swarr (2023) and celebrates how Semenya's South African supporters connect this attention to that endured by Sara Baartman, a woman who was abducted from South Africa and displayed her body and body parts as a spectacle in Paris in London in the early 1800s. In some introductory psychology textbooks, Semenya's exclusion from her sport was used to foster critical thinking about the real-world impact of holding to the sex binary. For example, one textbook (#2) stated, “[T]he point here is that athletics may have separate events for males and females, but biological sex is not that simple” (p. 383). Another textbook (#15) asked readers, “Do we use biology, psychology, or both in making decisions about whether someone should compete against men or against women?” (p. 123).

Four psychology of women and gender textbooks (#16, 17, 19, 20) devoted considerably more attention to sex testing, expanding discussion of the treatment of Caster Semenya to include how women athletes were previously sex tested by physical examination and then by chromosome testing both of which were “physically and psychologically invasive” (Crawford, 2018, p. 134), and the leaking of Semenya's sex test results to the media as “a blatant

disregard for her privacy” (Liss et al., 2019, p. 150). One textbook (#19) particularly critiqued the 2011 decision of the International Association of Athletics Federations (IAAF, now titled World Athletics) to shift from gender verification tests to excluding female athletes with “hyperandrogenism,” which is not supported by evidence linking testosterone levels with women's athletic performance (pp. 134–135, see also Pielke et al., 2019). Another textbook (#17) directly asked students to question why levels of circulating testosterone should receive more scrutiny than other physical features which could be linked with athletic performance, and two textbooks (#16, 17) constructed sex testing as discriminatory against women; all elite athletes have atypical bodies, but invasive and humiliating sex testing is only performed on women athletes. Two textbooks (#17, 20) also noted the criticisms of academics and South African sporting authorities that the scrutiny of Semenya's muscular body was consistent with a more general racialized association of Black women athletes with hyper-masculinity. By problematizing the IAAF and the scrutiny and objectification of Caster Semenya's body, and the intersection with racial stereotypes and mamawawa thinking, these psychology of gender texts approach the intersex decoloniality described by Swarr (2023) more than other textbooks did.

## General Discussion

Our analysis is the first to inform the question of how best-selling psychology textbooks represent people with diverse intersex variations, both in toto, and by specific variations. Overall, we found that best-selling psychology textbooks commonly discuss intersex in ways that trouble students' binary thinking about sex, gender, and development (Koyama & Weasel, 2002). The one-page features by Jessica Lord Bean (#19) and Katherine Dalke (#13) provide first-person accounts by people with intersex variations which allows their voices to be heard in these textbooks. By reproducing photographs of people with intersex variations who have been public about this part of themselves, textbook authors and publishers also mitigate the reduction of intersex to what Koyama and Weasel (2002) refer to as “biological trivia.” Several textbooks, notably those that were somewhat newer to the market, also equipped students with critical reflection concepts such as mamawawa (#10), ambiguity (#15, 20), and the medical gaze (#20). Androcentric accounts of AIS were tempered by individualized narratives of how girls and women discovered their sex variations and made sense of them as parts of themselves.

Some notable critiques were observed for specific intersex variations presented. First, the factual framing of variations as clusters of biologically determined features was most clear in relation to Klinefelter's and Turner's syndrome.

However, somewhat surprisingly, these variations were not indexed in the biological psychology textbooks reviewed here. Second, Ellis' (1945) and Money's (1955) arguments that psychologists should approach people with intersex variations as "natural experiments" was most often used when describing women and girls with CAH, who were also associated with visual depictions of genital ambiguity. Third, discussions of variations involving XY genotypes seemed most to draw on an androcentric "one-sex" conception of sex (c.f., Laqueur, 1990), in which testosterone is framed as producing ideal male bodies out of lesser female bodies.

### Practice Implications

This analysis has practical implications for authors, publishers, instructors, and students who are concerned about an empathic, non-stigmatizing, and accurate representation of intersex. In addition to the use of outdated terms (e.g., hermaphrodite, testicular feminization), we observed that some authors critically reflected on terms, thereby flagging them as problematic to students. Understandably, in a context where there is no consensus on a single correct term in this area among experts (Delimata et al., 2018), a variety of terms have been used somewhat inconsistently across textbooks (e.g., intersex, DSD). We recommend that psychology textbooks to respond to the complexity of terminology by including coverage of research on individuals' diverse preferences for terms (e.g., Bennecke, et al., 2021; D'Oro et al., 2020; Lundberg et al., 2018). Such inclusion might both allow students with variations greater permission to speak in their own terms and educate future psychologists to respect the diverse ways that people with lived experience talk about their variations.

Second, we urge critical reflection on the use of one variation, such as CAH, to represent or typify intersex variation across the board, as this can limit understanding of what constitutes intersex. Third, we query the continued use of the "natural experiment" framework used in some textbooks, particularly when its use obscures genuine healthcare concerns. Fourth, introductory textbooks that deploy the popular fame of individuals such as Caster Semenya to interest students in more theoretical issues should also discuss sex testing practices critically, as specialized women and gender textbooks already do in some depth. Indeed, during the writing of this article, Semenya published her own autobiography, which will allow authors to revise textbooks to be informed by her own account of events (Semenya, 2023).

Drawing on her unique experience as a clinical psychologist working with adults with intersex variations for decades, Liao (2022) created anonymized vignettes to sensitively draw readers into the dilemmas experienced by people with intersex variations. Her vignettes may also serve as a resource for how to meet student needs to learn about the

experiences of people with intersex variations without being subject to potentially dehumanizing discourse. Such dialectical approaches that do not "other" students may require incorporating different kinds of text and narratives, but there are signs of this shift even within the current textbooks on the market. Overall, these recommendations call on textbook authors to exercise greater empathy with people with intersex variations, including those who might be directly influenced by these textbook accounts, and to avoid stigmatizing people with intersex variations when fostering more critical thinking about the gender and sex binaries.

### Limitations and Future Directions

Our analysis was limited to recent and best-selling psychology textbooks, and therefore to the impact of recent historical events, such as the Chicago Consensus statement, on representations of intersex in textbooks. Though once presented as routine material on intersex, John Money's framework, invasive sex testing of athletes, and research associating men with KS and aggression may now be presented more critically and less regularly in psychology textbooks than before. We also found more critical insights in the somewhat less commercially successful books within the set we sampled (#7, 11, 20), suggesting that more niche textbooks may offer more critical representations of people with intersex variations, and we might not observe the same trends in less commercially successful textbooks. Relatedly, the inclusion of photographs of individuals who have been public about their intersex variations raises questions about whether the images of intersex people in psychology textbooks have become more humanizing over time. Finally, as a qualitative inquiry, ours is necessarily interpretive and we attended to what material was problematized and what was not. Whilst we have aimed to be transparent about our subject positions, other authors may well have produced a different analysis of these same textbook materials.

### Conclusion

The current analysis of the representation of people with intersex variations in psychology textbooks offers insight into how contemporary scholars understand and communicate to students about intersex (Alderson et al., 2023; Hegarty, 2023; Liao, 2022; Sandberg & Gardener, 2022). This snapshot of recent, influential textbooks revealed an uneven representation within a context of ongoing scientific and ethical controversy about the medicalization of intersex variations. As such, this study both informs understanding of the needs of students with intersex characteristics by considering what they are presented as the scientific evidence about themselves, as well as suggesting how we might communicate to all students about the lives of people

with intersex variations in non-stigmatizing and humanizing ways.

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**Data Availability** The data that support the findings of this study are available from Peter Hegarty upon reasonable request.

## Declarations

**Statement of Compliance with Ethical Standards** In compliance with the ethical standards of Sex Roles, we assert the following with regard to the attached manuscript:

- The manuscript has not been submitted to any other journal for simultaneous consideration.
- The submitted work is original and has not been published elsewhere in any form or language (partially or in full).
- The data has not been “salami-sliced.”
- There is no concurrent or secondary publication requiring justification.
- Results are presented clearly, honestly, and without fabrication, falsification or inappropriate data manipulation.
- We have adhered to discipline-specific rules for acquiring, selecting and processing data.
- No data, text, or theories by others are presented as if they were the author's own (‘plagiarism’).
- Proper acknowledgements to other works has been given, including quotations which are presented consistent with 7th edition of the APA Manual of Style.

Peter Hegarty, Sam Vaughan.

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