



“Diagnosing” Gender? Categorizing Gender-Identity Variants in the Anthropocene

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Abstract

In recent decades, two interrelated major controversies have been unfolding in the area of sex/gender research. (1) Are gender-identity variants to be understood as psychopathology or natural variation? (2) Is gender (and perhaps even sex) better conceptualized as binary or non-binary? The answer depends on the conceptual context and related considerations of utility. In the context of evolutionary biology, marked variants of sex and gender decrease reproductive success and are, thereby, deemed pathologic. In the present era of the anthropocene, however, the material conditions underlying the traditional division of labor between the sexes and the role of reproductive success have dramatically changed. These changes decrease the psychosocial importance of the binary gender distinction, provide more freedom for non-binary gender expression and identity formation, and render the distinction of pathologic and non-pathologic less useful, unless gender dysphoria develops secondary to a psychiatric condition. Although most people state their gender identity in the form of a nominal category, most self-report or interview-based ratings and multi-item scales of gender expression and/or identity show continuous distributions, either unimodal-asymmetric or bimodal, depending on whether they are designed for one or both of the traditional genders. Similarly, the rating scales of androgen-influenced variants of the genitalia—usually designed for one of the traditional sexes—typically represent a unipolar-asymmetric continuum. However, the binary gender system remains the primary framework against which individuals evaluate themselves. For those who develop gender dysphoria, assistance by mental-health service providers continues to be important.

Keywords Gender dysphoria · Transgender · Gender and society · Assessment of sex and gender

Gender-Identity Variants: Pathology or Natural Variation?

At the present early stage of the twenty-first century, clinicians specializing on transgender clients, i.e., individuals whose gender-identity development is at variance with the gender they were assigned at birth, face the polarization that currently characterizes much of public policy debates in American society. In regard to gender, one major controversy focuses on the question of whether atypical or nonconforming gender variants constitute a form of psychopathology or rather a “natural variation” (Meyer-Bahlburg, 2010).

In trying to find a compromise between the need to justify the provision of resources for clinical transgender services and the concerns about stigmatization by clinical terminology, the subworkgroup of transgender specialists for the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) of the American Psychiatric Association (2013) took several steps. They replaced “Gender Identity Disorder” (GID), the diagnostic term used in DSM-IV, with “Gender Dysphoria” (GD). Its definition focuses on distress as the psychiatrically relevant issue rather than the gender-identity variation itself. In addition, they placed GD into a chapter separate from sexual dysfunctions and paraphilias, with which GID had been grouped previously (Zucker et al., 2013). The 2018 version of the 11th edition of the *International Classification of Diseases* (ICD-11) of the World Health Organization, as released in June 2018, has used yet another diagnostic term, “Gender Incongruence,” also along with a revised definition, and has moved that category from the chapter on “Mental and Behavioural Disorders” into a new separate chapter on “Conditions Related

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to Sexual Health” (Reed et al., 2016; World Health Organization, 2018).

While these revisions of the psychiatric nomenclature are under way, the binary (male/female) categorization of sex and gender in general is questioned by individuals and organizations from diverse identity-focused perspectives, especially by feminist, LGBT, and intersex activists (Fausto-Sterling, 2012; Richards, Bouman, & Barker, 2018; Rubin, 2017). The critique of the binary system is based on the lived experience of people who perceive themselves as not fitting into either the female or the male gender role, and on the observation that most cultures and historical eras have been and are aware of individuals who by body, behavior, and/or identity do not conform to the binary sex/gender system (see also Hyde, Bigler, Joel, Tate, & van Anders, 2018).

Cultures differ in the ways in which they are dealing with such exceptions from the binary sex/gender system. Societal responses range from prohibition and suppression to variable toleration of societal third-gender niches. In the extreme, societal rejection leads to infanticide (in some cultures along with matricide), as it has been recorded for newborns with somatic intersexuality on a Babylonian tablet around 700 BCE (Cull & Simmonds, 2010) and by Greek and Roman writers such as Livius, Diodorus of Sicily, and Phlegon of Tralles from the first century BCE to the second century CE (e.g., Hansen, 1996). The bad-omen interpretation of the birth of such infants had already been side-stepped in Greek antiquity by two theories of the natural development of gender and intersexuality: the Aristotelian one focusing on the genitals and the Hippocratic one offering an explanation for both somatic and behavioral sex-atypical and gender-nonconforming features (Daston & Park, 1995). Even in the twenty-first century, however, the bad-omen interpretation is still found in certain underdeveloped rural areas (e.g., Western Kenya; Grady & Soy, 2017). In some traditional cultures, changing to the “other” gender or even just wearing its clothes was prohibited and could be severely punished, as illustrated, for instance, by Shari’a law as practiced in traditional Islamic culture or by Jeanne d’Arc’s condemnation to death in fifteenth-century Christianity (Pernoud, 1962). Other traditional cultures, however, have a long history of providing third-gender niches (Hames, Garfield, & Garfield, 2017; VanderLaan, Ren, & Vasey, 2013). Examples are the Hijra in India (Nanda, 1999) or the two-spirit people in North-American native cultures (Jacobs, Thomas, & Lang, 1997).

In recent years, post-industrial, internet-technology-based societies have gradually moved to acknowledge and accept without moral or legal reservations the existence of gender-nonconforming individuals, although acceptance varies widely within each country. Even two Moslem countries, Iran and Egypt, legalized transsexualism in the 1980s (Alipour, 2017). One by-product of this societal development is the proliferation of personal non-binary gender-identity terms used by many (non-intersex) gender-nonconforming people (Bocking, 2008;

Richards et al., 2018), for instance, “genderqueer,” “gender-fluid,” “non-binary,” “neutrois,” “intersex,” etc. Similarly, in detailed psychological mixed-model studies, Richter-Appelt’s team in Hamburg, Germany, has documented the diverse gender-identity terms and phrases adopted by adults with somatic intersexuality who do not fit neatly into the traditional binary sex/gender categories, even if they have adopted one of the traditional two gender roles in public (Schweizer, Brunner, Handford, & Richter-Appelt, 2013). Similar observations have been reported by the European dsd-LIFE project (Kreukels et al., 2018). A small, but growing number of individuals with somatic intersexuality, especially female-raised individuals with an XY karyotype, have adopted an “intersex” identity in public and received much positive media attention, as, for instance, the Belgian fashion model Hanne Gaby Odiele (Hicklin, 2017). In addition, the gradually rising persuasiveness and power of human rights considerations has inspired an increasing number of governments to formulate regulations that legalize some form of a third-gender status/role on personal identity documents (Meyer-Bahlburg et al., 2016), most recently in Austria (Verfassungsgerichtshof, 2018). In line with these advances, DSM-5 and the 2018 version of ICD-11 have made room for “alternate” gender-identity categories in addition to the traditional binary ones. In several Western countries, some parents are raising their (non-intersex) children as “theybies” or “gender-neutral,” i.e., without designating a gender (Morris, 2018). Yet, even in Western democracies, these developments are still being contested by many professionals and laypeople (Brunskell-Evans & Moore, 2018).

In my view, the assumption that only one or the other position can be correct—gender-identity variants as psychopathology or natural variation, the sex/gender system as binary or non-binary—is unnecessarily restrictive and divisive. What is left out of much of the debate are considerations of context and utility of a category system.

Within the framework of evolutionary theory, biological sex along with a set of gendered behaviors related to courtship, mating, offspring care, and often also territorial defense has evolved as a binary system that characterizes all mammalian species. Successful reproduction and, thereby, the survival of a species, depend on it. The binary nature of this system is pervasive and characterizes, for instance, karyotypes, gonads, internal and external genitalia, sex-hormonal milieu in fetal life, early infancy, puberty, and adulthood, secondary sex characteristics, and reproductive behavior patterns (Puts, 2016).

The development and sexual differentiation of the gonads involves a variety of genes and gene networks acting synergistically or antagonistically (Bashamboo, Eozenou, Rojo, & McElreavey, 2017). Given the number of genes involved, it is to be expected that various mutations occur, which may interfere with the development of a distinct sex dimorphism in the affected individuals, as is so clearly illustrated by the diverse forms of somatic intersexuality. Many of these mutations also

reduce or totally block the heterosexual attractivity of the affected individual (if left untreated) as well as the individual's capacity for peno-vaginal intercourse, conception, pregnancy, and/or birth; thus, they impair fertility/fecundity by one or more mechanisms. The sexual differentiation of the brain is even more complex than that of the reproductive tract and involves many hundreds of genes, most of which are affected (either activated or inhibited) by steroids already during early development (Shi, Zhang, & Su, 2016; Yang et al., 2006); more recently, the additional role of epigenetics has also been recognized (McCarthy & Nugent, 2015; Nugent et al., 2015). In this context, Polderman et al. (2018) have provided strong arguments in support of their hypothesis that “gender identity is a multifactorial complex trait with a heritable polygenic component.” Again, one must expect that mutations of the many associated genes occur, some of which may interfere with the development of a clear behavioral gender dimorphism (although evidence of the latter is still missing), with their own implications for fecundity. Thus, from a strictly evolutionary perspective, marked sex/gender atypicalities do constitute pathology specifically in terms of reproductive capacity, but may not necessarily be associated with other forms of somatic, physiologic, or behavioral/psychiatric dysfunctions or pathologies.

One has to keep under consideration, however, that the binary system of sex/gender in humans originally developed during a geological/biological period when humans roamed the planet in small groups that had to be continuously on the lookout for and evade all kinds of predators, while at the same time competing with similar groups of other humans for unstable food resources (Kelly, 2013). Women underwent a continuous sequence of pregnancy and lactation periods (with associated responsibilities of young-child care), while men were challenged by pressures to gain and maintain their intra-group physical dominance status, to hunt, and to engage in territorial defense, all activities that require great muscle strength, in which males still today surpass females at all ages (Frontera, Hughes, Lutz, & Evans, 1991; Janssen, Heymsfield, Wang, & Ross, 2000; Latorre Román et al., 2017; Laurson, Saint-Maurice, Welk, & Eisenmann, 2017; McKay et al., 2017). Compared to today, the life span was short for either sex and child mortality high (Roser, 2018). The evolutionarily developed division of labor between the genders continued beyond the hunter-gatherer stage through the agricultural and early industrial stages of human development, with gender-role demands on women complicated by additional demands from agricultural work requiring increased arm strength (Macintosh, Pinhasi, & Stock, 2017).

By contrast, we are now living in the era of the “Anthropocene,” a term coined by geologists to denote the current geological epoch that is defined by the action of humans on the planet (Zalasiewicz, Williams, Haywood, & Ellis, 2011). This term ought to be extended to cover the biopsychosocial sequelae as well. Along with the pervasive geological changes

of the anthropocene also the material basis of human existence has been profoundly affected, especially in the post-industrial, increasingly urbanized, internet-dominated countries of the twenty-first century. As a consequence of social evolution (Morin, Keefe, & Naftolin, 2014), the current living conditions of the human species in many countries are radically different from the conditions under which the human genome developed originally. Animal predators have mostly been exterminated; tasks demanding physical strength (including heavy manual work, long-distance travel on foot or horseback, and early forms of warfare) are largely performed by machines; local territorial defense is replaced by legal institutions and by enforcers (police/army) who also rely much less on physical strength (firearms rather than whips, clubs, and swords); deindustrialization has led to dramatic decreases in physical activity and an increasingly sedentary lifestyle (Freese, Klement, Ruiz-Núñez, Schwarz, & Lötzerich, 2018; Rind & Jones, 2014; Rind, Jones, & Southall, 2014). Moreover, child mortality has been drastically reduced and long-term survival of individuals markedly increased (Roser, 2018). Due to the separation of sexual activity from reproduction (Morin et al., 2014), for women, the years of pregnancy and lactation have been drastically reduced, if not abolished, as documented in detail by Trevathan (2010; see also Trevathan, Smith, & McKenna, 2008). Moreover, the planet is over-saturated with human beings that are straining its natural resources to the limits, and high rates of reproduction can no longer be sustained for the species as a whole. Thus, in the contemporary post-industrial societies, the material basis underlying the traditional demands for a gender-based division of labor has much diminished. The societal consequences are pervasive as exemplified by the progressive relaxation of rules prescribing gender differences in clothing and other physical accentuations of gender roles, the increasing establishment of laws promoting equal rights and opportunities for females and males (World Economic Forum, 2017), and emerging attempts at creating gender-neutral environments for children's socialization (Shutts, Kenward, Falk, Ivegran, & Fawcett, 2017).

In this context, a strictly binary view of gender is gradually losing at least some of its utility. The liberation from the binary straight-jacket of individuals who by body or behavior are somewhere between the (still) dominant poles on the bimodal gender continuum is to be expected and welcomed as a by-product of the changing material basis of human lives. Members of modern societies can afford to relax when confronted with gender-nonconforming behavior or identity in a given individual. Most tasks of modern life can be performed by either gender, and reproduction has lost the essential role it had in the past.

This change of perspective does not imply that all gender variations are equally beneficial for all individuals. One important consideration is the differential diagnosis. In rare cases, gender-themed delusions (Meijer, Eeckhout, van Vierken, de Vries, 2017) and even gender dysphoria (Schwarz et al., 2016)

may develop as a by-product of psychosis and resolve, if the psychiatric condition is successfully treated. Some other individuals appear to “perceive gender transition as a solution—a way out of some form of social, psychological, or developmental paralysis” (Levine & Solomon, 2009). Moreover, in a study of parental reports, Littman (2017, 2018) described in adolescents and adults without a preceding history of marked gender-nonconforming behavior an apparently rapid onset of gender dysphoria under the influence of peers and social media. In such situations, fast progression to gender reassignment combined with irreversible medical procedures would be contraindicated. Instead, detailed discussion of clients’ expectations from social and medical gender transition, identification of potential, unexpected, and adverse side effects—both social and medical—as well as exploration of non-binary gender options are important.

It is important to note, of course, that occasionally gender dysphoria may develop independently of and coexist with psychosis; in such cases, gender-affirmative treatment of the gender dysphoria and stabilization of psychotic symptoms need to be combined (Meijer et al., 2017). In addition, we need to take into consideration that at present atypical gender expression and identity are still associated with various forms and variable degrees of chronic stigma (Reisner, Greytak, Parsons, Ybarra, 2015) that has psychiatric consequences of its own and presents an additional challenge to the clinician trying to ascertain cause-and-effect relationships (van der Miesen, Nab-bijohn, Santarossa, & VanderLaan, 2018).

Assessment of Gender-Identity Variants

General Issues

Given the foregoing considerations, a comprehensive assessment of children, adolescents, and adults with gender-nonconforming identity variants is still needed, especially when a client—in the context of gender transition—applies for medical treatments that may lead to poorly reversible or irreversible somatic and physiological changes, may be associated with risks of adverse side effects, and will add to the societal costs of health care. Clinicians ought to maximize the chance that such treatment will really be beneficial to the patient in the long run and not just satisfy a client’s acutely felt, but transient need for gender transition, that may later be followed by de-transitioning and a request for treatment to undo the changes.

Comprehensive assessments of gender development involve a multi-informant and multi-method approach including detailed medical, developmental, psychiatric, and gender histories, standardized structured and semi-structured interviews and questionnaires that allow a determination of the degree of gender nonconformity over time, an analysis for factors and motivations that likely contributed to the transgender development of a client, in order to establish to what extent a client

meets criteria for existing transgender categories or diagnoses, facilitate an evidence-based reasonable (but never 100% certain) prognosis of long-term gender outcome with its implication for the likely long-term benefit of irreversible somatic changes by medical treatments, and help the clinician make reasonable, beneficial recommendations. As there are several published reviews that describe available gender assessment tools (Meyer-Bahlburg, 2011; Zucker, 2005), those details will not be repeated here. New on the horizon are various tools of brain imaging. Yet, as recent reviews of the status of brain imaging in transgender individuals have shown (Guillamon, Junque, & Gómez-Gil, 2016; Mueller, De Cuypere, & T’Sjoen, 2017; Smith, Junger, Derntl, & Habel, 2015; Zucker, Lawrence, & Kreukels, 2016), the data available are not yet useful for clinical decision making in individual cases; considerably more research is needed in order to achieve clinical utility.

Given the diversity of presentations of late-onset gender-identity variants (GIVs) and the potential severity of decisions for medical treatments that yield irreversible somatic changes, a comprehensive assessment of an individual with a GIV ought to include the following major domains.

- (1) The gender culture (family, school, work, neighborhood, and peer network [including on the internet]) in which the individual lives;
- (2) the individual’s current gender status in terms of behavior, identity, and gender-related dysphoria (behavioral and anatomic);
- (3) social blending-in/passing in the desired gender;
- (4) family support and other social supports;
- (5) gender-related stigma, discrimination, harassment, and violence including considerations of emotional and physical safety;
- (6) current psychiatric status (including suicidality and non-suicidal self-injury);
- (7) gender history;
- (8) psychiatric history (including suicidality and non-suicidal self-injury) and its interaction with gender development;
- (9) biological and psychosocial factors potentially contributing to the GIV;
- (10) anticipated future gender role/identity and its perceived implications for education, occupation, partnership, procreation/parenting; and
- (11) perceived options for gender expression and plans for social transition (including preferred gendered name and pronouns) and for medical transition and the expected effects along with potential adverse side effects.

Some of these domains lack standardized assessment tools altogether; for others, such as psychiatric status and history, a variety of standardized screening and evaluation tools have been available and are accessible in the respective literature. Several clinically useful methods are available for the assessment of variants of reproductive-tract configuration, gendered behavior, and gender identity. They include various standardized rating scales, questionnaires, and semi-structured interviews, which need to be complemented with detailed qualitative clinical interviews. Most of the standard tools have been developed in the context of a binary sex/gender system, and their quasi-norms are based on convenience samples.

Sex Variants: Binary Categories or Continuum?

As stated initially, sexual differentiation of the body is a complex multifactorial process that usually produces one of two distinct sexes, male or female, which is recognized at birth by the appearance of the genitalia and constitutes the basis for gender assignment within the traditional binary system. However, various disturbances of the process of sexual differentiation (e.g., genetic mutations, disruptions of cell migrations, hormonal abnormalities) may lead to a less distinct outcome, a reproductive tract that is “ambiguous” in regard to sex/gender and, thereby, “intersex” (translated from Latin: “between the sexes”).

For identifying in large-scale population surveys people with the diverse conditions of “Disorders of Sex Development” (DSD), of which somatic intersexuality constitutes a subgroup, the GenIUSS group recommended the following single item: “Have you ever been diagnosed by a medical doctor with an intersex condition or a “Difference of Sex Development (DSD)” or were you born with (or developed naturally in puberty) genitals, reproductive organs, and/or chromosomal patterns that do not fit standard definitions of male or female?”, with the response options, “Yes,” “No,” or “I don’t know” (Gender Identity in U.S. Surveillance [GenIUSS] Group, 2014). This question was tried in a recent online survey with a convenience sample of 111 relatively well educated adults with a DSD (Tamar-Mattis et al., 2018); it was concluded that multiple items may be necessary to accurately capture the diversity of individuals with DSD conditions.

Among the somatic intersex conditions, most easily noticed are variants of the external genitalia. In the 46,XX newborn with a history of exposure to female-typical low levels of prenatal androgens, the external genitalia will appear female; the more the fetal androgen levels exceed those of typically developing females, the more masculinization of the external genitalia will occur. In the 46,XY newborn with a history of exposure to male-typical androgen levels, the more the androgen receptors are impaired, the less masculinization of the external genitalia will occur; an analogous outcome occurs in 46,XY newborns with deficient prenatal androgen production. In case of the best-known underlying single-gene disorders such as 21-hydroxylase deficiency, 5 α -reductase-2 deficiency, or androgen insensitivity, it depends on the specific locus of the lesion on the gene involved, how severe the resulting androgen excess, androgen-receptor insensitivity, or androgen deficiency is. The hypermasculinization of the 46,XX newborn or the hypomasculinization of the 46,XY newborn can range from relatively minor deviations from the karyotype-typical appearance of the external genitalia to one that looks very similar to that of the “other” sex. In addition, the internal reproductive tract may develop in a sex-atypical fashion. There are other variants such as penile agenesis in 46,XY newborns or cloacal exstrophy of the bladder that are associated with a broader spectrum of genital abnormalities with a more complex etiology.

Specific 5- to 7-point pictorial rating scales have been devised to classify the degree of genital variation in single-gene disorders: for instance, for 46,XX newborns with congenital adrenal hyperplasia due to 21-hydroxylase deficiency (Prader, 1954); for 46,XY newborns with androgen insensitivity (Quigley et al., 1995); and for 46,XY newborns with 5 α -reductase-2 deficiency (Sinnecker et al., 1996), although these rating scales are also often applied to other conditions of genital ambiguity. Ahmed, Khwaja, and Hughes (2000) have constructed for use across intersex conditions an external masculinization scale (range 0–12) and an internal masculinization scale (range 0–10). For variations of the Müllerian duct and related anomalies, i.e., the female internal genitalia, no similarly continuous rating system has been constructed; a complex categorical classification system appears more useful (Epelman et al., 2013).

From a measurement perspective, the medical diagnoses of individuals with somatic intersexuality constitute nominal categories, denoting syndromes with specific genetic, endocrine, phenotypic, and developmental-course characteristics. Yet, each syndrome covers a continuum of “severity” in terms of degree of deviation from the typical process of sexual differentiation and phenotypic outcome; the latter can be assessed by ordinal rating scales in most androgen-influenced syndromes.

Gendered-Behavior Variants: Binary Categories or Continuum?

Most questionnaire- or interview-based scales in use for the assessment of gendered behavior (aka gender-role behavior, sex-dimorphic behavior, gender expression, etc.) have been constructed by selecting behaviors in which males and females differ significantly in terms of frequency of engagement in the behavior or of degree of liking or preference. An individual rates his/her frequency or preference on each item’s response scale (or these ratings are performed by an interviewer on the basis of the interviewee’s descriptive responses). Then, an individual’s total scale score is obtained by summing up or averaging that person’s scores across all items. The resulting total-scale distributions are continuous and bimodal, with very large effect sizes for gender, as has been shown for scales of childhood play and other childhood behaviors (Golombok & Rust, 1993; Grellert, Newcomb, & Bentler, 1982; Meyer-Bahlburg, Dolezal, Baker, Ehrhardt, & New, 2006a; Meyer-Bahlburg, Sandberg, Dolezal, & Yager, 1994a; Meyer-Bahlburg, Sandberg, Yager, Dolezal, & Ehrhardt, 1994b), adult gendered behaviors in general and specific subdomains such as career preferences and leisure time preferences in adolescence or adulthood (Berenbaum, 1999; Lippa, 1995; Meyer-Bahlburg et al., 2006b; Orlofsky, Ramsden, & Cohen, 1982), and for sexual orientation (Meyer-Bahlburg, Dolezal, Baker, & New, 2008). The scale distributions demonstrate that gendered behaviors ought not to be conceptualized as distinct binary categories, but as continua. Individuals who show behavior patterns that—across domains—deviate

far from the mode of their same-gender peers in the direction of the mode of the other gender are often recognized as gender non-conforming and possibly at increased risk of developing gender dysphoria.

Gender-Identity Variants: Binary Categories or Continuum?

Gender-identity labels such as the traditional, binary ones like “boy,” “girl,” “man,” “woman,” as well as labels that deliberately side-step the binary gender system (or, better, constitute interpolations between the male and female poles and are sometimes referred to as “third gender”), for instance, “genderqueer,” “neither-nor,” or “intersex,” represent nominal categories. For the screening assessment of gender identity and the identification of people with gender-identity variants in large-scale surveys, a two-step question has become common (Deutsch et al., 2013; Reisner et al., 2016). The first question asks for the current gender identity with several response options including male, female, one or more specific third-gender options, and a write-in option. The second question asks for the sex or gender assigned at birth/entered in the birth certificate, usually with the two response options “male” and “female”; of course, a third option needs to be added for studies in U.S. states or countries that have already created an “undetermined” or third-gender category for official documents.

In their thorough mixed-method investigation of gender outcome in individuals with somatic intersexuality, Richter-Appelt and her team in Hamburg, Germany, found that many of their patients were satisfied with the binary gender category (or “gender role” in the terminology of the investigators) they were assigned to or are currently living in, but nevertheless rated themselves as uncertain of belonging to that gender and/or developed a private identity that was more nuanced and often quite similar to a third-gender category (e.g., a “mixed” two-gender identity or “neither-nor”; Schweizer et al., 2013). It was concluded that gender role and gender identity need to be conceptually separated. “Gender role could provide a framework for meeting the need to belong to established social categories, while gender identity represents a space for internal, possibly private individual experiences” (Schweizer et al., 2013, p. 22). A recent mixed-method investigation of a diverse (non-intersex) sample with high frequencies of sexual and gender minorities came to the same conclusion. On that basis, it was proposed to use in future surveys a Multidimensional Sex/Gender Measure involving three multiple choice questions regarding the sex assigned at birth, the current gender identity, and the (social) gender the person lives in currently (Bauer, Braimoh, Scheim, & Dharma, 2017).

For more detailed assessments, several questionnaires and interview schedules have been developed that combine a broader range of items on aspects of gender identity with

somewhat global items on aspects of gendered behavior (e.g., Cohen-Kettenis & van Goozen, 1997; Deogracias et al., 2007; Johnson et al., 2004; Schneider et al., 2016; Singh et al., 2010; Zucker et al., 1993, 2006). Their primary purpose is the differentiation of transgender or gender-dysphoric individuals from cisgender individuals, i.e., people who identify with one of the traditional two gender categories. In the scoring procedures, both males and females are typically combined. The resulting distributions are unipolar-asymmetric continua.

Cisgender individuals are aware that there is some variability of gender expression within each gender, i.e., in the degree to which individuals fit the stereotypical expectations for a given gender. To capture this aspect of identity, several investigators have used simple ratings of the degree of masculinity and femininity, applied to various ages (retrospectively) and contexts (e.g., as self-perception or as seen by others). One example is the Sex Role Identity Scale (Storms, 1979). By construction, both the individual ratings as well as derived summary scales represent continuous distributions.

Other investigators expand the concept of gender identity. Egan and Perry (2001), for instance, assessed three “components of gender identity”: (1) felt psychological compatibility with one’s gender (i.e., feeling one is a typical member of one’s sex and feeling content with one’s biological sex), (2) felt pressure from parents, peers, and self for conformity to gender stereotypes, and (3) intergroup bias (i.e., the sentiment that one’s own sex is superior to the other). They showed in a study of children in Grades 4 through 8 that adjustment in terms of self-esteem and peer acceptance was positively associated with felt gender compatibility and negatively with felt pressure and intergroup bias.

Conclusions

Whether gender identity variants are to be understood as pathology or natural variation depends on the conceptual context and considerations of utility. In the present era of the anthropocene, the traditional view of GIVs as psychopathology is gradually losing its societal utility, except when the GIV develops as a feature of a psychiatric condition. The binary sex/gender system remains the primary framework against which individuals evaluate their own gender development. Yet, most self-report or interview-based ratings and multi-item scales of gender expression and/or identity show continuous distributions, either unimodal-asymmetric or bimodal, depending on whether they are designed for one or both of the traditional genders. This fact makes it easier for gender-nonconforming individuals to adopt a non-binary gender-identity category, given the diminished societal pressures for the binary gender system. In view of the complex considerations involved in decisions for gender transition, the diverse gender options available, and the frequent association of gender dysphoria with psychiatric difficulties,

assistance by mental-health service providers continues to be important.

Compliance with Ethical Standards

Conflict of interest The author declares that he has no conflict of interest.

Human and Animal Rights This article does not contain any studies with human participants or animals performed by the author.

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