Gendering Animals

1. Introduction

There has recently been a wave of feminist criticism aimed at scientific programs that investigate sex differences. Like many feminist critics before them, they draw attention to current scientific work that is replete with sexist bias (e.g., Fausto-Sterling 2012; Fine 2010, 2017; Jordan-Young 2010; Richardson 2013; Rippon 2019). Interestingly, while many of these critiques take pains to emphasize the complexity of the sex/gender distinction, sometimes seeming to elide it altogether, they inadvertently assert and reify it at the same time. Although some of these authors debunk the idea that for humans sex, gender, and sexuality can be successfully dissociated, they often do so by presupposing that humans are unique in having such complicated identities. For nonhumans sex and gender are clearly distinguished because, while many nonhuman animals and plants have sexes, few, if any, are thought to have genders. Gender is cultural and thus the stuff of human social identities, whereas sex is biological, in the realm of the natural (read nonhuman) world. This is true even for the members of species closely related to humans. As Cordelia Fine notes, "To suggest that non-human primates have socially constructed gender roles seems more or less akin to pinning a notice to one's back that says, MOCK ME..." (2010, p. 128).

In what follows, we hope to show that there are good, scientifically credible reasons for thinking that some nonhuman animals might have genders while also allowing that the troubling of the sex/gender distinction, typical in current feminist analyses, is importantly right. Using Rebecca Jordan-Young's concept of gendered norms of reaction (2010) and drawing from Sari

van Anders' Sexual Configurations Theory (2015), we will consider what it might mean to say that animals other than humans are gendered in a scientifically respectable sense that does not simply reduce gender to sex. It is important that such an account is not only sensitive to the political ramifications of these terms in feminist and queer politics, but is also sensitive to the ways in which troubling the human-nonhuman animal divide may seem to threaten those humans whose "humanity" is already questioned by sexist (writ large to include heterosexist and cissexist), colonialist, ableist, and racist tropes. Moreover, a species-inclusive concept of gender must respect members of those species to which it applies and must not simply project human gender norms (or, worse yet, contemporary gender norms of the Global North[1]) onto other animals. Instead, it should reflect the species-typical, culturally contingent roles and life ways of the animals themselves.

In the final section, we take up the issue of the ethics of eliding the human-animal divide. We find, drawing from decolonial theory, that it is the human-animal distinction itself that grounds animalizing oppression of various groups. Thus, efforts to build species-inclusive imaginaries through, for instance, defining a species-inclusive gender category is not only consistent with feminist commitments to ending oppression but may indeed forward them. We also point to Indigenous traditions as examples of "non-Western" ontologies where the idea of nonhuman genders may seem less counterintuitive.

[1] As one of us has noted elsewhere, there is no agreed upon term that picks out the cultures that are rooted in the Greco-Roman Christianized world and are now present in various regions globally due to the European project of colonialism in the modern period (Meynell 2009, 1-2). None of them are wholly satisfactory and we have here chosen the term "Global North."

2. Feminist politics, the sex/gender distinction, and sex difference research

In order to interrogate what sociocultural gender in nonhuman animals might mean, we must first shore up some of what is a rather confused, highly politicized terrain around conceptions of sex and gender and understand the context informing current usage. This provides an opportunity to identify what is at stake for feminist and other progressive theorists in maintaining or disrupting the sex/gender distinction. In this section, we identify the political motives that initially inspired the distinction. As we shall see, despite its centrality to feminist politics, defining gender in a way that clearly distinguishes it from biological sex has always been understood to be fraught, though it came increasingly under attack in the 1990s by feminists and queer theorists. At the same time, sex difference research in the biological and behavioural sciences has taken a parallel path, largely untouched by feminist critique. This research tends to downplay the influence of socially constructed gender roles, identifying sex differences in behaviour as fixed in utero by hormones (i.e., brain organizational theory [BOT] [see e.g., Jordan-Young's critique 2010]) or, more mysteriously, genetically programmed (i.e., *narrow* evolutionary psychology [e.g., see Meynell's critique, 2012]). Despite their differences, in some ways the poststructuralist queer and feminist positions and conservative sex difference research agree that the distinction between sex and gender is largely an illusion. Happily, as we show in the next section, Sexual Configurations Theory (SCT) provides an elegant, scientifically robust alternative that avoids both a strict demarcation between sex and gender and a careless conflation of the two concepts. Moreover, we will find that it is eminently applicable to nonhuman animals.

2.1. The feminist politics of the sex/gender distinction

When feminists first adopted the sex/gender distinction in the 1960s and 1970s it formed the keystone in their theoretical framework. In a social context where it was typically assumed that the social and political differences between the sexes found in practically every part of daily life were the result of natural, essential, biological sex differences, the idea that many of these differences were, in fact, socially constructed gender differences offered hope of subverting patriarchy. Marilyn Frye offers a typical way of thinking about the distinction and its meaning for sexual justice in the conclusion of her influential chapter on 'Sexism" from *The Politics of Reality*:

> The cultural and economic structures which create and enforce elaborate and rigid patterns of…gender as we know it, mold us as dominators and subordinates….They construct two classes of animals, the masculine and the feminine, where another constellation of forces might have constructed three or five categories, and not necessarily hierarchically related. Or such a spectrum of sorts that we would not experience them as 'sorts' at all. (1983, p. 38)[2]

Through this lens, these contingent, gendered social structures indicate a profound failure of liberal society. Once we recognize them simply as a social product, they are revealed to be clearly inequitable and unjust, and their supposedly necessary or natural character is seen merely as a way of rationalizing this injustice. Whether "gender," as a term, necessarily implies an

[2] Although published in the *Politics of Reality* in 1983, Frye notes that she had developed the main themes of this paper as early as 1974.

unjust power structure of dominators and subordinates remains a contentious issue among feminists (and we will return to it in section 4, below). Here we note, as Frye does, that gender understood as a power structure can be *conceptually* separated from gender understood as a sex-linked social category. This will be important later on.

Despite its significance to early second-wave politics, the sex/gender distinction has been challenging for feminists to maintain. We can, in fact, see the seeds of its demise in the same early second-wave work that introduced the distinction. For instance, Frye notes, just a few pages before the passage quoted above, "Enculturation and socialization are, I think, misunderstood if one pictures them as processes which apply layers of cultural gloss over a biological substratum." And later, "Socialization molds our bodies; enculturation forms our skeletons, our musculature, our central nervous systems. By the time we are gendered adults, masculinity and femininity *are* 'biological.' They are structural and material features of how our bodies are" (p. 37). From this insight (which is, in effect, an early articulation of Jordan-Young's gendered norms of reaction) we see the difficulty of maintaining any sex/gender distinction that assumes that we can observe and clearly ascribe traits as one or the other.

The problems with the concept of gender were, in fact, far more profound. As feminists of colour and lesbian feminists pointed out (e.g., hooks 1984; Moraga and Anzaldúa 1981; Rich 1980), the way that straight, white, Anglo, middle-class feminists identified gender oppression and described gender enculturation frequently left them out. Many connected the problems of patriarchy with colonialism and European culture, while some noted that other cultures, such as some Indigenous cultures, were not only more gynocratic and accepting of sexual diversity, but also more generally respectful of the life with which we share the planet (Allen 1986). They

noted that feminists who were privileged in every way except for gender often not only viewed their issues as central to the women's movement—truly "women's issues"—but demanded solidarity from "Other" women while showing them little in return. Kimberlé Crenshaw's concept of intersectionality neatly summarized this critique (1991). However, because the critique also blew up any idea of "*the* woman's experience" or "*the* woman's voice" (Lugones and Spelman 1983) it further muddied the very issues of identity, bodily reality, and social location that the concept of gender sought to clarify.

Poststructuralist feminists and queer theorists, following the early work of Judith Butler (1990), took this troubling of the sex/gender distinction a step further and rightly insisted that sexuality was inextricably bound up with both of them. They not only deconstructed all three concepts but accused second-wave feminists of a self-defeating political strategy, reifying and essentializing gender through a political focus on sisterhood and women's oppression while simultaneously trying to dismantle it (Butler 1990).[3]

2.2. The logic of sex difference research

Running parallel to these developments in feminist theory, though largely immune to its critique, sex difference research has continued to search for (and claimed to find) dimorphic sex differences. Brain Organizational Theory (BOT) (the main target of Jordan-Young's analysis (2010]) is a case in point. It is tempting to dismiss this research as simply a result of sexist ideology and see its imperviousness to feminist critique as evidence of the resilience of

[3] See Nicholson's "Interpreting Gender" (1994) and Mikkola's "Feminist Perspectives on Sex and Gender" (2019) for a rather less cursory overview.

heteropatriarchy. Certainly, Jordan-Young's assessment of the theoretical and methodological flaws in BOT provide ample grounds for dismissing most of the putative findings of this research program and rejecting the general account of sex differences drawn from them. However, sex difference researchers might be forgiven for dismissing some feminist criticisms, particularly those that are premised on the inscrutable complexity and interrelatedness of human sex, gender, sexual identity, and sex-typical behaviour. As life scientists, sex researchers know that all organisms are extraordinarily complex. They know that within all species, including our own, there is significant variation. Like all scientists, they use idealized theoretical models that simplify the subject matter to make it empirically tractable; often they start with animal models to identify basic structures that they hypothesise are shared with humans. While work with lab animals allows scientists to reduce the noise in their data by purchasing experimental subjects with minimal variation (say, mice that are virtually genetically identical and who have been raised in very similar conditions), human populations are typically chosen by convenience and, of course, comprise individuals with different developmental histories. This means that any hope of finding basic behavioural sex differences (and even some physiological ones) requires interpretative creativity and flexibility to make up for a lack of robust experimental controls.

A feminist critic might object that such considerations do not explain, let alone justify, the fact that in most sex difference research scientists simply *assume* that there are significant dimorphic cognitive and behavioural sex differences with underlying physiological causes—an assumption that appears to be unshakable despite repeated failures throughout the history of the modern sciences to find them (Fausto-Sterling 2000; Fine 2017; Rippon 2019; Schiebinger 1989). Researchers need only reply that they are following the practice that has been enshrined in

human research since the Nuremberg trials of testing hypotheses about humans in other animals first. The dimorphic model of sex goes largely unchallenged in most research on nonhuman animals, and gender is a non-issue. The projection of this approach to humans is not unreasonable given that *humans are animals*. Humans share an evolutionary history with the rest of life on the planet and we share a number of traits with our closest relatives (and some not-so-close relatives too). Clearly, many (at least moderately) sex dimorphic morphological and physiological traits are shared by humans and other mammals (consider sex chromosomes, reproductive organs, mammary glands, hormonal profiles, and size dimorphism[4]), and it is at least plausible that various sex dimorphic behavioral traits will be shared also.

In sum, researchers who study nonhuman animal sex differences describe two distinct sets of morphological, physiological, and behavioral traits producing two distinct biological kinds—male and female. Given evolutionary continuity it stands to reason that some of these, or evolutionarily homologous dimorphic sex traits, will exist in the human population. That is what most sex difference research in humans has attempted to uncover. To claim that sexually dimorphic behaviors in the rest of the animal kingdom have nothing to tell us about human sex differences implies a degree of human uniqueness that is simply implausible. Certainly, most sex difference researchers would allow that cultural gender norms add complexity to the expression of the underlying phenomena, but they will maintain that sex differences must be there nonetheless.[5] It is in this politicized landscape that we find a number of scientists and journalists

[4] See Blackless et al. (2000) for a useful discussion of absolute versus moderate sex dimorphism.

[5] Larry Cahill's review of Gina Rippon's *Gender and Our Brains* (2019) basically plays out this kind of argument, as does Jerry Coyne's review of Fine's *Testosterone Rex* (2017).

calling feminist critics ideological or scientifically illiterate (e.g., Barash 2005; Cahill 2019; Coyne 2017; Soh 2017)—this despite a generally critically pro-science ethos among feminists who study the sciences (Meynell 2016) and, of course, among feminist scientists as well.

2.3. How poststructuralist feminist politics and conservative sex difference research agree

While the traditional approach to sex difference research may be overly biologically deterministic and dualistic, poststructuralist approaches following Butler appear to err in the direction of making sex overly culturally contingent.[6] Although correct in rejecting a sex/gender demarcation that is developmentally and conceptually free from social construction, this approach appears to suggest that it follows that no sex/gender distinction is viable. From a biological, medical, or social science perspective, this is a serious loss. There are, after all, certain scientific projects for which a reasonably clear sex/gender distinction in humans appears useful, if not necessary. Much of the world remains hierarchically organized according to gender classifications and norms, many of which seem entirely functionally separable from biological features (consider the underrepresentation of women in philosophy and the physical sciences in the Global North). Moreover, biological sex differences exist within multiple species, they have broad explanatory power over a range of phenomena in the life sciences, and they are of significant human medical interest, especially when it comes to reproductive health, regardless of any social practice or meaning.[7] Thus, this deconstructive move threatens to sideline a useful,

[6] For instance, in *Bodies That Matter* (1993) Butler neither presumes nor negates materiality (1993, p. 30). She argues that we "discover that matter is fully sedimented with discourses on sex and sexuality that prefigure and constrain the uses to which that term can be put" (p. 29).

[7] The point here is not that the way these sex differences are treated, say in the medical world, is not thoroughly imbued with and shaped by social values, but rather that no matter what shape these institutions might have they will

albeit provisional, changeable, and imprecise tool for describing the character of the gender injustice that structures our society, and simply ignores many valuable projects in medicine and the life sciences. For the project at hand, the poststructuralist move appears to be devastating as it characterizes gender as the effect of an extremely complex cultural discourse, full of symbolic meaning and self-conscious performance, thus reifying the idea that humans are unique in having culture and, concomitantly, unique in having socially constructed sex/gender/sexualities.

Paradoxically, this implicit assertion of human uniqueness, common in feminist discourse, entails a version of the very sex/gender distinction that it seeks to disrupt: all other animals have sexes; only humans have gender/sex/sexualities. This is as much as to say that only humans have culturally specific, socially constructed genders. Clearly, such a position is self-defeating. After all, those scientists engaged in BOT and other related research programs will simply respond that they don't care what you call it (indeed, the fact that many authors use "sex" and "gender" interchangeably shows that they really don't [Hammarström and Annandale 2012]); what they are interested in studying are those parts of human bodies and human lives—like sex dimorphic hormonal profiles, genital and other morphology, reproductive role, etc.—that humans have because of our biological nature as animals. As noted above, concerns that this biological basis is complicated by its interaction with social or cultural causes creates methodological challenges that are no different in kind from countless other investigations in the life sciences. So, in an important sense, these conservative sex difference researchers and poststructuralist queer and feminist theorists agree—the distinction between sex and gender is

still need to cope with basic sexed bodily functions, such as puberty, menstruation, ejaculation, pregnancy, and so forth.

largely an illusion. It's just that the first group believes that sex/gender/sexuality is generally socially constructed, with perhaps a small but uninteresting biological aspect, while the latter group thinks it is all biologically determined, albeit with some cultural differences on top, producing rather noisy data.

3. Defining species-inclusive sex and gender

3.1 Sexual configurations and gendered norms of reaction (in humans)

Recognizing this theoretical quagmire helps one appreciate the scientific importance and liberatory potential of Sari van Anders' Sexual Configurations Theory (SCT) (2015). For van Anders, sex and gender are components of a larger sexual configuration, replacing what variously has been called sexuality, sexual orientation, or sexual identity with a method of categorization that is more nuanced, more rigorous, more representative of the actual sexual diversity found in the world, and more useful in the liberatory projects of women and sexual minorities. The revolutionary character of SCT is written deep into its theoretical structure. Van Anders rejects the method of investigating sexual configuration through identifying difference, which tacitly presupposes some amorphous yet unified norm (e.g., heterosexuality or man) contrasted with some Other (pp. 1187-8). Instead, she applies a sexual diversity lens, identifying multiple axes along which different individuals vary in both character and strength. Sex and gender are then two distinct parameters within this larger sexual configuration; so-called sexual orientation is included through other parameters identifying the gender and sex of one's actual and preferred sexual, romantic, and life partners, as well as one's public identity. Van Anders

recognizes that this configuration evolves over a lifetime and interacts with other intersectional identities (such as race and class) (pp. 1188-9). While SCT includes far more than just sex and gender (and that of one's partners)—with the axis of partner number sexuality[8] being particularly pertinent to the study of the sexual behaviour of animals other than human—we limit the current discussion to sex, gender, and what van Anders calls gender/sex.

Although van Anders is stuck with the apparent conceptual binary of the sexes given in the English language, her operational definitions of sex and gender neither assume a binary configuration nor even a simple two-dimensional spectrum. Certainly, one may identify as one of the traditional binary sex and gender types, but one may also identify as neither, both, or somewhere in between. Importantly, one can inhabit the in-between space in a number of different ways. One might locate oneself as a woman but with a few traditionally masculine traits in a way that disrupts neither identity. Alternatively, one might locate oneself as someone who disrupts gender and sex binaries (and there are any number of different ways to do so). Alternatively, sex and/or gender might simply not be particularly relevant to one's identity or behavior. Because van Anders is primarily interested in developing a tractable method of specifying the identity, preferences, and behaviours of individuals, she constructs a (visually represented) conceptual space that allows individuals to be positioned along each independent parameter as part of their sexual configuration.

On top of all this, van Anders reasserts the basic kernel of the sex/gender distinction—the

[8] Van Anders explains, "Partner number sexuality refers to the number of partners people have or are interested in having. For example, someone might want to have no partners, one partner, two partners concurrently, or more" (2015, p. 1193).

idea that gender is cultural and sex is biological. She defines them as follows:

> Gender: Aspects of masculinity, femininity, and gender-diversity that are situated as *socialized, learned, and cultural* (e.g., appearance, behavior, presentation, comportment). May refer to one's internal sense of one's self, culture, roles, other's beliefs about one's self, structures and systems, etc. [Label examples:] Feminine, masculine, genderqueer, transgender, trans, tomboy, butch, femme, etc.
>
> Sex: Aspects of femaleness, maleness, and sex-related bodily features that are situated *as biological, bodily, evolved, physical, and/or innate* (e.g., vulvas, penises, breasts, body shape). May also refer to one's internal sense of one's self. [Label examples:] Male, female sexqueer, trans, transsexual, intersex (2015, p. 1181 [Table 2], emphasis ours)

Of course, van Anders is keenly aware of the various considerations that led feminists and queer theorists to reject the sex/gender distinction. Moreover, she is well aware that typically the "internal sense of oneself" is not easily recognized as clearly one or the other. She asks, "What to call those features that are both gender and sex, socialized and biological?" And answers, "Gender/sex" (2015, p. 1181), which she defines as:

> Whole people/identities and/or aspects of women, men, and people that relate to identity and/or cannot really be sourced specifically to sex or gender [Label examples:] Woman, man, trans woman, trans man, ciswoman, cisman, genderqueer, intersex (2015, p. 1181 [Table 2])

Thus van Anders retains a robust sex/gender distinction, while acknowledging that even if some traits can clearly be identified as one or the other, others cannot.

Moreover, she recognizes that—far from being reductive and dichotomous—both sex and gender are multifactorial and, within each parameter, admit of a range of different types. While contemporary North American, Anglo gender norms make plain the non-dimorphism of gender (perhaps best exemplified by the mainstreaming of the singular "they"), it is equally important to emphasize that sex is also not absolutely dimorphic (at least in humans) and that sexual categorization, though by no means *completely* arbitrary, is far from simply given by nature. While sex difference researchers (and those who quote them in the popular media) often imply that sex differences are absolutely dimorphic, meaning that they assume there is a set of covariant traits that are exclusive to each sex, there is, in fact, only modest dimorphism between the sexes. One only finds certain statistical regularities in sex-typical differences and a tendency for them to cluster together, but neither these differences nor their covariation hold absolutely for either primary or secondary sex characteristics. The existence of intersex individuals with diverse biological variation in their primary sex characteristics complicates sex identification, given that sex chromosomes, gonads, sex hormones, and the anatomy of genitalia can diverge from typical or expected congruence (Fausto-Sterling 2000). The same holds for secondary sex characteristics. While there are sex-typical differences, such as height differences or differences in hairiness between adult human males and females, the existence of very short males or very hairy females does not mean these are not secondary sex characteristics or that these individuals have been mis-sexed, but only that they possess a characteristic typical of another sex. This moderate dimorphism suggests that we should treat sex as a cluster concept and which primary

or secondary characteristics are to be deemed salient will be fixed by context and the interests of those doing the classifying.

As noted above, van Anders recognizes that one's gender, sex, and gender/sex may change throughout one's lifetime. It is here that Jordan-Young's gendered norms of reaction become salient. The concept of norms of reaction is simply a way of specifying the developmental contingency of a given trait—the various different possible outcomes, given a certain genetic (and, of course, morphological and physiological) starting point (Meynell 2008, p. 93). While the paradigmatic model is comparing genetic clones (i.e., individual organisms with the same genotype) as they develop in different environments (Jordan-Young 2010, pp. 272-5), one can also use the idea to look at how a single ecotype (i.e., a specific local variety within a species, the members of which are phenotypically and likely genotypically similar) will develop in different environments and then compare a variety of ecotypes in terms of how they develop in a variety of different environments. The reaction norm of a particular trait identifies the range of possible outcomes for that trait which a particular genotype or ecotype might manifest, depending on the environment in which it develops. Whether the reaction norm for a particular trait is wide—with a large range of very different possible outcomes—or narrow—with a few, very similar possible outcomes—is an empirical matter.

Jordan-Young proposes treating the sexes as different ecotypes in a cultural environment, noting that different cultural inputs and culturally mediated environmental inputs for a given sex may result in a wide variety of outcomes (p. 276). She notes that development is crucially interactive; a difference between sexes that is robust across a number of different environments

may nevertheless be inverted in some others.[9] Moreover, gender norms that shape individuals at an earlier point in development may have physiological outcomes that when observed in adulthood appear to be biologically driven rather than cultural. Jordan-Young muses that her concept might give rise to alternative hypotheses to those offered by BOT. For instance, she wonders if the differences in sexual behaviour in women born with Congenital Adrenal Hyperplasia (a relatively common disorder of sexual development) compared to developmentally typical ciswomen might be a result of their growing up with a combination of feminine gender norms and extensive medical surveillance of their genitals, rather than their having a masculinized brain fixed *in utero*, as is supposed by many brain organization theorists (pp. 237-68).

The picture that we get from van Anders and Jordan-Young does not deny that there are robust biological causes that create reproductively distinct kinds, in other words, sexes. However, because van Anders starts from a sexual diversity perspective, her system does not assume dimorphism—it does not assume that all sex traits will be clumped together or can be reduced to a single underlying essential trait. What dimorphism exists must be discovered; but already, the manifest evidence (for instance, the existence of various differences of sexual development) shows that sex dimorphism *is not* absolute but only moderate. As for gender, the cultural significance of certain biological markers gives rise to a set of social causes that tend to produce certain behaviours and interact with biological development. How exactly we carve up

[9] One of Jordan-Young's examples makes this point forcefully—the "very low bone mineral density in the lower back among ultra-Orthodox Jewish adolescents" (2010, p. 285). Although typically in this age group bone density is higher on average in boys than girls, in this population this is inverted. Moreover, "the sex difference was found even after [the researchers] controlled for [environmental factors associated with higher bone density], such as hours per week of weight-bearing exercise and walking" (p. 285).

the population into sex or gender categories, though by no means arbitrary, is to an important extent, a matter of decision, premised on which sex-typical traits we count. In this way, van Anders offers definitions of sex and gender that are clearly trans* inclusive.

The concept of gendered norms of reaction aids an appreciation of how highly contingent traits of an ecotype or sex with wide norms of reaction may nevertheless give rise to very specific and highly regular outcomes if the environment—be it chemical, physical, *or cultural*—is stably configured in a particular way. This alerts us to the difficulty of distinguishing biological causes from cultural causes—sex from gender—and reminds us of the ineliminable role of gender-sex in providing non-question-begging accounts of sex-typical behaviours. Ultimately, this picture of sex and gender appears mostly compatible with the account offered by poststructuralist queer and feminist theorists, but it rests on biologically robust evidence, offers methods of operationalization and investigation that are scientifically rigorous, and can be extended to species-inclusive biological research.

3.2. Sex, Gender, and Gender/Sex for All Sexual Organisms

Jordan-Young and van Anders have provided us with a theoretical account of sex and gender that is grounded in contemporary biology but, unlike most contemporary sex research, acknowledges the manifest diversity of sex morphology and physiology, gender expression, and sexuality, and the contingency of their development. The next step is to generalize this framework to include nonhumans and operationalize gender to make it empirically tractable. From van Anders' distinctions, we can define three categories as such:

Sex: A cluster of traits that are highly correlated with or physically integrated with differential gamete size within the species and that have biological causes, both proximately by various means—like genetic causes and fetal development—and ultimately through evolution;

Gender: A cluster of traits that are highly correlated with or culturally integrated with sex in the species—typically, behavioral, psychological, and social traits but in some cases, morphological and physiological traits—and that have sociocultural and historical causes, both proximately by way of social learning and ultimately by way of tradition;[10]

Gender/sex: Traits related to sex and gender whose etiology cannot be identified, or traits in which sociocultural and biological causes are so closely interrelated (consider surgical interventions) that the distinction cannot be drawn (whether in the lived experience of individuals or, as is more salient for the study of nonhuman animals, by external observers). Sometimes with gender/sex traits we will be able to abstract separate gender and sex components and sometimes we won't.

We note that there is both an ontological and an epistemological version of gender/sex. Ontologically, a trait counts as gender/sex when its etiology involves both sociocultural and

[10] This definition is in line with Whitehead and Rendell's definition of culture: "culture is information or behavior—shared within a community—which is acquired from conspecifics through some form of social learning" (2015, p. 12). However, it requires an important proviso. Nonbinary gender identities and traits are neither correlated nor culturally integrated with sex yet must nonetheless be distinguished from non-gender traits that have sociocultural and historical causes (like speaking Spanish, wearing a hanbok, or using a fork). We propose that nonbinary genders and gender traits exist only in cultures with binary genders and can only emerge in reaction and relation to binary gender identities and traits. What the details of a given nonhuman nonbinary gender might be are not entirely clear but must be considered species by species. We note that cultures with a gender binary may evolve to have three distinct genders and, concomitantly, there is the possibility that cultures with three distinct genders might have non-ternary genders, and so on.

biological causes. Epistemologically, a trait should be considered a gender/sex trait if it cannot yet be ruled out that sociocultural causes play a significant role or it is not yet clear that the etiology of the trait is overwhelmingly sociocultural. In other words, when we do not know if a trait should be classified as gender, sex, or gender/sex we should treat it as gender/sex, so as to avoid erroneously assuming an etiology that might misdirect subsequent research.

Of course, many organisms that have sexes will not have genders (e.g., dioecious plants). Sex is a biological classification that rests primarily on reproductive processes—the mixing of the genetic material of two parents in reproduction—and differential gamete size, with females producing large gametes and males producing smaller gametes. Some organisms produce both male and female gametes and some organisms transition from one sex to another under certain circumstances (Roughgarden 2004, pp. 30-35) (which, interestingly, means that for these species all the physiological and morphological features of one sex are within the reaction norm of the other sex, at least at some points in development). For different species, there are different clusters of secondary sex characteristics that, while not strictly speaking essential to the reproductive role, are nonetheless statistically correlated with reproductive role and gamete size. While these have some regularity throughout some taxa, there are invariably exceptions. For instance, across mammals females typically produce milk for their offspring; however, some males even of our own species can produce milk under some circumstances (for a discussion of lactating cis males see [Diamond 1995] and for lactation in trans* males [and other trans* and nonbinary people] see [MacDonald 2019]). Within each sexual species, there will be a set of primary and secondary sex characteristics—morphological, physiological and often behavioural—that can be specified and that will tend to cluster, often due to shared genetic

characteristics, developmental paths, and triggers. How tightly they cluster, how dimorphic the sexes tend to be, and how many exceptions occur is an empirical question that must not be elided by a simplistic and dogmatic *a priori* assertion that there are two sexes. Which traits are taken to be particularly salient to determining sex may well vary among scientists or be discipline-specific.

As for gender, as it is a cultural kind that depends on social learning, only what Andrew Fenton has called "intensely social animals [who] require a stable social environment to develop typically" (2018, p. 629), will have genders. Many scientists now accept that there are socially learned traits that within some species collectively comprise cultures (see e.g., Whitehead and Rendell 2015). Of course, the meaning of this claim and ultimately its plausibility depends on what is meant by the term "culture." Perhaps unsurprisingly, defining "culture" appears to be at least as controversial as defining "gender." Nonetheless, relatively straightforward etiological kinds promise to provide empirically tractable criteria for identifying cultural phenomena. At the ultimate level, sociocultural traditions can be distinguished from biological evolutionary processes; at the proximate level, social learning[11] can be distinguished from developmental or genetically driven processes.

Of course, not all traits acquired by social learning—even ones that are expressed by half the population—will be gender. To count as gender, a behaviour (or a physiological or

[11] It is not clear that we should include all types of social learning as evidence of culture. Whitehead and Rendell provide a useful list of social learning processes, differing in "complexity and cognitive demand" from stimulus enhancement to emulation (2015, pp. 16-17). Whether only those species that display complex and cognitively demanding types of social learning are capable of having cultures is an important question that must be left to a later discussion.

morphological trait resulting from behaviour) must not only be socially learned but it must also be, to some extent, sex-linked. What it means to be sex-linked will inevitably depend on what are understood to be the primary and secondary sex characteristics of the species in question. A high degree of statistical correlation of a particular socially learned behaviour (or a physiological or morphological trait resulting from such behaviour) with the members of a sex, however it is defined, is an important mark of gender (with some important provisos [see note 10, above]).

This discussion of sociocultural and historical causes intersects in useful ways with Jordan-Young's gendered norms of reaction. The reaction norms of the morphological and physiological characteristics associated with sex have varying widths, depending on their biological basis, and have their outcomes determined during the development of the individual through their interaction with environmental factors. A culture is part of the environment of the individual and a given culture might significantly narrow the norms of reaction for a certain biological trait. Consider, for a human example, a trait like foot size for the population of Chinese women before and after foot binding became the norm in China (Cummings, Ling and Stone, 1997). Nonetheless, due to the sheer variety of cultures one might expect gender traits across cultures to be highly variable and the reaction norm for any given cultural trait in a given individual to be extremely wide outside its culture even if within its culture it is quite narrow. Presumably, this will be the same for other species as cross-generationally stable, socially learned, sex-typical behaviours have feedback effects on the physiology and morphology of the population.

Although we anticipate serious challenges for operationalizing gender in many species, nonetheless, we have the tools for recognizing at least *some* cases of nonhuman gender. As we

have noted, to count as gender a trait must be sex-linked and socially learned. Some tells that may indicate that a sex-typical trait is a gender trait include having a very broad norm of reaction, when looking at the species as a whole. Cross-cultural comparisons between conspecific communities are likely to be particularly informative (just as they are in the human case). At the level of the individual, the capacity to change sex-typical behaviour from one type to another, without any clear biological cause—or, better yet, with a clear social cause—is perhaps one of the clearest markers of gender. Patrick Hopkins (1996) has dubbed "the violation of 'the rules' of gender identity/performance" (p. 171) gender treachery. We take this term to identify individuals whose behaviour does not conform to the socially learned, sex-typical behaviour of their community. The concept of gender treachery neatly points to both the sex-linked character of gender, the narrowness of gender norms, *and* their contingency, recognizing that a single individual may fail to conform to a gender norm or, in some cases, switch their behaviour from one gender kind to another.

3.3. Mama as gender traitor[12]

[12] While the restrictions of space limit a fulsome discussion of other examples, we can at least gesture toward a couple of other promising cases. For chimpanzees, it is plausible that at least some of their hunting practices are socially learned; considered at the level of species, hunting is strongly sex-linked with males. However, female participation differs significantly between communities (Pruetz et al. 2015, p. 9). Most notably, the practice of hunting with modified "spearing" tools (Pruetz and Bertolani 2007), used only by a community of chimpanzees (*Pan troglodytes verus*) at Fongoli, Sénégal, is practiced more by females than males (Pruetz et al. 2015). This suggests that various hunting practices are gender or perhaps gender/sex traits. (We leave readers to make their own inferences about what this finding might suggest for "man the tool-making hunter" hypotheses in evolutionary psychology.)

Another interesting place one might look for gender is in sperm whale (*Physeter macrocephalus*) cultures. While adult male sperm whales live mostly solitary lives, female sperm whales have clear communities, the structure of which differ between oceans (Whitehead and Rendell 2015, p.148). Given our definition, any socially learned adult behavior that is specific to a family unit or clan will be gender or gender-sex. Perhaps more interesting is the possibility that within a community there might be distinct socially learned roles among the females, meaning there

To illustrate, we discuss a possible case of gender treachery—Mama, a member of the chimpanzee colony at the Royal Burgers' Zoo in Arnhem, Netherlands, who is described by Frans de Waal in his *Chimpanzee Politics: Power and Sex Among Apes* (1998). Physically, Mama was "exceptionally broad and strongly built," and, at the time de Waal was writing, she served as "the leader of collective female power" in the colony (p. 45); in other words, she was the alpha female. In this role, she played an important part in the social dynamics of the group, often acting as a conciliator in cases of conflict. As an example, de Waal describes one occasion in which the chimpanzees turned on a new alpha male, Nikkie, chasing him up a tree. The rest of the colony only stopped harassing him once Mama reconciled with him (pp. 44-5). However, long before Nikkie became the alpha male, it was Mama who dominated both the male and female chimpanzees. Leading the colony for approximately eighteen months, she effectively took on the role of alpha male (p. 46). A male chimpanzee, Yeroen, did eventually replace her, but not without difficulty, resistance from Mama, and human intervention.

As an alpha male, Mama ruled the other chimpanzees with an iron fist. She would engage in intimidation displays, typical of male chimpanzees, with her trademark display involving using her arms as a swing for her body to deliver a thunderous kick to a metal door, creating a deafening sound in the vicinity (pp. 49-50). She was also very violent. She was known to attack

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could be two (or more) genders among females. So, it is possible that there could be two (or more) female genders and no male gender among sperm whales.

While it is tempting to include examples of same-sex sexual behavior here, we must be cautious. Unless a behavior is socially learned and culturally contingent it is not gender as we have defined it. Moreover, as SCT reveals, the relationship between sexual behavior and gender is complicated and the two can be conceptually distinguished. For instance, the well-known same-sex sexual behavior among bighorn sheep (*Ovis canadensis*) (Roughgarden 2004, pp. 137-40) may be biologically driven and thus have no relationship to gender. However, if such behavior is socially learned or has a socially learned component, then it will be a gender or gender-sex trait.

the other chimpanzees in conflicts, tearing their skin and drawing blood so often that de Waal notes that she would injure another chimpanzee almost once a week (p. 49). When Yeroen and two other males were first introduced, Mama led the rest of the female chimpanzees in harassing and terrorizing them, forcing them to climb upon drums and huddle in fear as the females attacked them, biting the males' feet and pulling their hair (pp. 46-7). This continued for several days before a decrease in aggression allowed the other chimpanzees to cautiously approach the males. Still, violent conflicts were common. De Waal believes that Mama saw her position in the colony threatened and refused to cede her role and influence to the males. Two weeks after the introduction of the male chimpanzees, Mama and Gorilla (her close friend and supporter) were removed from the group for three months. During this time, Yeroen was able to impress the other chimpanzees and establish dominance over them (p. 47). Upon Mama's reintroduction, however, conflict returned and the males were once again fearful and scrambled to the top of the drums to avoid Mama's aggression. De Waal notes, however, that due to her absence Mama had lost the influence she once had and could not draw on the support of the rest of the group to regain control. Still, Mama's dethroning and Yeroen's ascendancy was not immediate upon reintroduction, taking several weeks (p. 49).

We think that this could be a case of gender treachery, albeit with some caveats, and it is certainly illustrative of what gender treachery might look like in animals other-than-human. Mama clearly exhibited the behaviour and social standing of two distinctly different sex-typical social roles in her community—that of alpha male and alpha female. Interestingly, she defended the treacherous one—alpha male—vigorously, seeming to engage in hypermasculine behaviours, such as the exceptionally violent outbursts mentioned by de Waal. Despite her desire for the

position, evidenced by her defence of it, once it was clear that the rest of the group would not support her, she switched to a "traditional" gender role—that of alpha female. Of course, none of this need be bound up with any reflection on Mama's part about gender. We cannot know how she viewed her situation as alpha male or alpha female or whether her behaviour and status were tied up with "her internal sense of herself," to use van Anders' phrase. But the unconscious and unreflective pursuit or disruption of gender roles is typical of gendered human life as well.[13]

De Waal notes that the intervention on the part of the researchers to establish male dominance has been criticized by feminists. He defends the move, maintaining that "it is known that in the wild the adult males are dominant" (p. 49) and remarking that the male chimpanzees would probably have wrested control from Mama sooner or later, had they allowed "a more natural course of events" (p. 49). Though much more can be said about this, we note here that de Waal is clearly committed to the idea that roles of alpha male and alpha female are presentations of sex, not gender, nor even gender/sex. That this is a pre-theoretical ideological commitment is suggested by the fact that a set of behaviours that an animal engaged in without interference was deemed *unnatural* and in need of human interference in order to correct it to its supposedly natural state.

[13] We note that the chimpanzees at Arnhem were brought together not by families and lineages, but by human intervention in a place far from the typical chimpanzee habitat, meaning that the social structure of their community was likely quite anomalous. Nonetheless, like humans, chimpanzees are biologically social animals, and the Arnhem colony would have developed certain social practices. Whether some of these were passed down from the norms of free-living populations could only be ascertained by a careful examination of the personal histories of the founding members of the group.

4. Gendering animals without dehumanizing humans

With the example of Mama in hand, we hope we have established at least the plausibility of the idea that some nonhuman animals have distinct, culturally contingent, species-specific genders that can be successfully distinguished from sex. When we step back from the science and consider what gendering animals might mean in a broader human context, we find ourselves at what Claire Kim calls a "dangerous crossing" (2015). On the one hand, gendering has a way of turning an object into a subject—an "it" into a "she", "he", or "they"—eliding the moral line between humans and other animals (Adams 2000) and promising to challenge some of the more obscene excesses of anthropocentrism and human exceptionalism. When we recognize Mama as a gendered being who is navigating power structures within her community, her agency and subjectivity become difficult to deny. She is a recognizable cousin to the many humans who navigate hostile sociopolitical structures and personal relationships to forward their own interests. On the other hand, this elision of difference between humans and other animals may seem particularly unpalatable and, indeed, dangerous, for those humans who, because of white supremacy or ableism find themselves already regularly associated with nonhuman animals through oppressive institutions and frameworks that dehumanize them.[14]

Claire Kim poignantly highlights this rightly felt anxiety about cross-species comparisons. She writes, "It is one thing to be compared to other human groups struggling for advancement. It is quite another to be compared to animals who lie on the other side of the line

[14] We note that this elision is not unique to discussions of gender but rather applies to any account that finds in nonhuman animals any morally or politically relevant capacity (in effect, any affective, cognitive, and social trait) that has been thought to be uniquely human. It is particularly fraught when the trait in question is considered central to conceptions of human rights, as is the case, for instance, with autonomy.

of moral considerability" (Kim 2011, p. 329). This is not a baseless anxiety nor an abstract theoretical concern. As social psychologists Brock Bastian, Jolanda Jetten and Nick Haslam note, "Viewing others as lacking core human capacities and likening them to animals or objects…may reduce perceptions of their capacity for intentional action, but it may also make them appear less sensitive to pain, more dangerous and uncontrollable, and thus more needful of severe and coercive forms of punishment…" (2014, p. 212). Animal advocates have regularly been guilty of making damaging analogies between nonhuman animals and various oppressed groups. For instance, talk of the abattoir and the Holocaust is common enough that many authors have made a point of discussing the analogy (Derrida 2008; Wood 2005), with several insisting on its inappropriateness (Adams 1994/2018; Haraway 2008). Not only is there a long history of oppressed peoples being dehumanized and animalized by white European settler-colonial powers, such rhetoric is still mainstream today. One thinks of Sylvia Wynter's discussion of the Los Angeles judicial system staff using the initials N.H.I. ("No Humans Involved") when Black men's rights were violated (Wynter 1994, p. 42), or Donald Trump's description of MS13 gang members as not people, but animals (Fabian 2018). We will not call to attention further examples; they are myriad and apparent to any who pay attention. We recognize that, because our project goes some way toward erasing the human-animal divide, we must address these concerns, lest we "leave [our pens] lying in somebody else's blood," to echo Audre Lorde's memorable phrase (1986, p. 7).

However, we think this worry is misplaced. As a number of theorists engaged in human liberatory movements have pointed out (e.g., Ko and Ko 2017; Ko 2019; Taylor 2017), white supremacy, colonialism, and ableism not only presuppose and reify the human-animal divide, but

put it to work in maintaining racism, colonialism, and ableism. Indeed, without a firm ontological and moral commitment to the human-animal divide, dehumanizing oppression through animalization would not be possible. While there are now a number of different theoretical analyses that make this point (such as Ko [2019] and Kim's [2017] analysis of zoological racism and Sunaura Taylor's cripping animal ethics [2017]), here we draw from some of those offered from decolonial and Indigenous perspectives. Usefully, these theorists not only uncover and articulate the interdependency of the human-animal divide and white supremacist colonialism, but some also bring gender into this mix. Moreover, many traditional Indigenous philosophies suggest better ways of thinking about and living with other beings in the "more-than-human" world.

Drawing on Anibal Quijano's notion of the "coloniality of power" (1992), Maria Lugones provides an incisive discussion of what she calls the "coloniality of gender." Quijano explains how capitalist exploitation and racialization go hand in hand. Both are necessary for colonialism to function, constructing racial hierarchies that justify exploitation and dehumanize the colonized Other by questioning their capacities for rationality andculture, eventhe very possibility of having an inner life or a soul. Lugones provides a corrective for Quijano's analysis, showing how gender plays an indispensable role in colonization. The "dichotomous hierarchy between the human and the non-human," at the heart of colonial modernity, was "accompanied by other dichotomous hierarchical distinctions, among them that between men and women" (Lugones 2010, p. 743). Under this system, white Europeans alone were part of the gender hierarchy, they alone were men and women, whereas colonized peoples "were judged as bestial and thus non-gendered, promiscuous, grotesquely sexual, and sinful" (p. 743). Hence,

Lugones argues, "[t]he semantic consequence of the coloniality of gender is that "colonized woman" is an empty category; no women are colonized; no colonized females are women" (p. 745).

Lugones' response is to reject the "[t]he suggestion [that we] search for a non-colonized construction of gender in Indigenous organizations of the social. There is no such thing; 'gender' does not travel away from colonial modernity" (p. 746). At first glance, this response appears to preclude the possibility of our project. The attempt to meaningfully talk about a robust sense of gender in nonhuman animals may seem to uncritically extend contemporary conceptions of gender from the Global North onto animals and bring them under a logic of domination in which gender is understood as "dichotomous, heterosexual, racialized, and hierarchical" (p. 750). However, this is where the radical character of van Anders' approach offers a way to reject colonialist gender categories, while retaining a robust concept of gender. As a descriptive account that maps out a conceptual space for gender traits, SCT does not presuppose a particular culture's gender system or project that system onto others. In the species-inclusive account of gender that we are proposing, gender is nothing other than the set of culturally contingent, socially learned, sex-typical behaviours that may interact with other physiological, social, morphological, or behavioural traits to have outcomes beyond these socially learned behaviours.[15] That gender norms of the Global North have been constructed to be dimorphic, hierarchical, and entwined with a kind of zoological racism (Ko 2019), rendering them sexist

[15] Lugones writes that "often, when social scientists investigate colonized societies, the search for the sexual distinction and then the construction of the gender distinction results from observations of the tasks performed by each sex" (p. 744). Sexual dimorphism then comes to ground a dichotomous understanding of gender, to the point where sex and gender are conflated. We believe that SCT successfully resolves this concern.

(writ large to include heterosexism and cissexism), colonialist, and racist simply means that *this* gender structure is unjust. It does not follow that all culturally contingent, socially learned, sex-typical behaviours will reflect and enforce unjust social relations. Indeed, understood in this way, we see that some human societies may have many genders, one gender, no genders, or genders that are so socially unimportant that they are barely worth mentioning.

This analysis reveals the complexity of the social meaning of our project. On the one hand, if gendering animals renders some animals, like Mama, identifiable as subjects with rationality, culture, and an inner life, it does so by making use of the colonial system of gender described by Lugones. This goes some way to elucidating why some racialized people may experience animal rights advocacy as threatening to their own rights or as advocating placing the interests of nonhuman animals over their own (Ko 2019, Ch. 1). However, at the same time, because any project of gendering animals that truly respects the animals themselves and attempts to describe and engage them and their cultures on their own terms must begin by de-centering human gender norms, this helps to reveal the historically contingent character of colonial gender norms. Thus, recognizing gender in other animals disrupts the colonial gender system, undermines its racist logic, and rejects any attempt to simply reduce gender to sex.

Although, this new way of thinking about and relating to other animals may appear unthinkable to those sufficiently steeped in the racial and gender hierarchies of the European tradition, others may find these ideas more conceivable and practicable. For instance, many Indigenous philosophies, including some of those originating here on Turtle Island, are open to the idea that nonhuman animals (and the nonhuman world more broadly) are capable of engaging in robust social relations between conspecifics and heterospecifics. As Kim TallBear explains ,

interspecies thinking needs Indigenous standpoints, not just for understanding our relations with the nonhuman world but also for understanding how nonhuman beings relate to each other (2011). Vine Deloria, Jr. identifies this wide-ranging relationality as characteristic of traditional Indigenous worldviews, writing: “The best description of Indian metaphysics was the realization that the world, and all its possible experiences, constituted a social reality, a fabric of life in which everything had the possibility of intimate knowing relationships because, ultimately, everything was related” (2001, p. 2). These relational ontologies often present nonhuman animals as highly social beings who not only engage in intergenerational social relations but also partake in intergenerational knowledge practices, passing their cultural knowledge on to conspecifics and others.

In a number of Indigenous traditions, nonhuman animals are understood to be friends, teachers, lovers, and spouses (Kimmerer 2013; Nelson 2017; Robinson 2014,). For example, Margaret Robinson uses Mi’kmaq stories to motivate and explain a Mi’kmaw ethic concerning human interactions with and responsibilities toward other animals. At the heart of these relationships is a conception of nonhuman animals as persons who are capable of entering into robust social relations with humans and an appreciation of the importance for humans of being in good relations with the other animals upon whom they depend (Robinson 2014, pp. 677-80). Robin Wall Kimmerer notes that nonhuman animals also play a role in teaching human beings. Drawing on the storytelling of Edward Benton-Banai, she relates the life and learning of Nanabozho, “the Anishinaabe Original Man” (2013, p. 63). As the last of all beings to be created, he arrived in a world already ancient and populated by beings from whom he learned, by observing and speaking with them.

Melissa Nelson offers a similar perspective in her discussion of eco-erotics, as she considers "stories of Native women loving other-than-humans" and the ways in which nonhumans can impart lessons and knowledge about gender relations or manifest as gendered themselves (Nelson 2017, p. 231). She explains that "[a]ccording to numerous stories in Native American oral literature, Native women have a propensity to fall in love with other-than-human beings" (p. 237). Nonhumans are gendered and sexualized in these stories. She writes: "These personified others have masculine and feminine qualities, like humans, and many variations in between this oversimplified gender binary…. It is common—dare I say, 'natural'—for young women to fall in love with these other beings: to marry them, make love, and live together as lovers and married couples" (p. 231). While there is a lively discussion to be had about how exactly to understand these stories, there is no doubt that they offer ways of thinking about nonhuman animals (and human relations with them) that foreground their rich, complex cognitive, affective, and social lives.

Because they start from the position of recognizing other animals as social beings in complex relations with conspecifics and heterospecifics, including humans, many Indigenous worldviews promise a fruitful framework for rethinking ethical, scientific, and political questions addressing nonhuman animal lives.[16] They provide an orientation to the more-than-human world

[16] Some may wonder how these kinds of respectful relationships are consistent with hunting. There are a diversity of views among Indigenous people on hunting and food ethics and their relation to Indigenous culture and sovereignty (e.g., Belcourt 2019; Coté 2010; Fisher 2011; Koleszar-Green and Matsuoka 2018; Peterson and Hogan 2002; Robinson 2016; Robinson 2018; TallBear 2019; Womack 2013; see also Kim 2015, Ch. 7; Russell 1999;). Many Indigenous authors stress the importance of taking no more than one needs and maintaining attitudes of gratitude and reciprocity for whatever one takes, including the lives of other animals (Coulthard 2014; Deloria 1991/1997; Kimmerer 2013; Robinson 2014). Within the constraints of subsistence hunting, various rituals are required to remain in good relations with the animals killed. In a book for Indigenous children on their relations with nonhuman animals, Deloria writes, "other creatures do have thought processes, emotions, personal relationships and many of the experiences we have in our lives. We must carefully accord these other creatures the respect that they deserve

that may be a far more propitious starting place for thinking about species-inclusive cultural kinds, whether through the lens of biological research or feminist politics.

Far from risking further oppressing various groups, the absence of a moral hierarchy premised on a stark human-animal divide undermines the foundations upon which dehumanizing/animalizing oppression rests. This is not to say that rethinking our approach to other animals through, say, developing species-inclusive cultural kinds like gender, will end racism, ableism, colonialism or other forms of human oppression. White supremacy is woven into the cultures of the Global North in myriad ways and it is naïve to imagine any simple solution. Nonetheless, erasing the human-animal divide or starting from ontological frameworks that don't presuppose it could undermine some of the cognitive habits of dehumanizing oppression and cannot plausibly be thought to assert or reinforce it.

5. Conclusions

We began this paper by showing why the concept of gender itself makes the project of developing a robust, species-inclusive, and empirically tractable account of gender challenging. The last five decades of feminist activism and scholarship have not only emphasized the importance of recognizing that many sex-typical behaviours in humans (and even aspects of morphology and physiology) are culturally contingent gender traits, but also that gender traits are

and the right to live without unnecessary harm. Wanton killings of different animals by some hunters and sportsmen are completely outside the traditional way that native people have treated other species" (1991/1997, p. xii). This reflects what Glen Coulthard refers to as "grounded normativity," a relationship to land and its inhabitants based on reciprocity (2014, p. 60; Coulthard and Simpson 2016, p. 254). This normativity is not merely ethical, but political, with the political interest and agency of nonhuman animals being held as important (e.g., Hogan 1998; Hudson 2015; Mohawk 1988).

often inextricably interwoven with biological traits, including sex traits. But this analysis also revealed the ways in which an exclusively human account of gender that challenges the sex/gender distinction itself is ultimately self-defeating. As long as a strict human-animal divide that defines the animal as non-cultural is presupposed, then research seeking essential differences between men and women (and the concomitant projects that disappear or pathologize sexual minorities) will simply appeal to those traits in humans that are shared with other animals to justify research into reductionist, essentialist sex differences. Because the claim that grounds this position is right—there *is* evolutionary continuity between all species, including humans—the only way to disrupt this logic is to reject reductive, essentialist, dimorphic approaches to nonhuman sex differences, particularly for those species that have cultures and thus may plausibly have genders.

While one might reasonably worry that a robust rejection of the human-animal divide risks harming groups of humans whose oppression is constituted by dehumanization and animalization, we argued that, in fact, the contrary is true. As a number of decolonial theorists have argued, "the animal" that inhabits the human-animal divide is an ideological construct characteristic of European modernity that has been employed to degrade some humans as subhuman and, in so doing, justified countless injustices and atrocities—from chattel slavery, to the invasion of the Americas, and the Shoah. Animalizing oppression of humans is only made possible by lumping together all nonhuman animals as a bestial and inferior Other, which then provides a category for relegating humans who are Othered, whether due to ethnicity, race, Indigeneity, ability status, immigration status, class, sexual orientation, religion, criminality, gender, and so forth. Lugones further specifies this white supremacist structure by pointing to the

ways in which European gender identities—man and woman—were historically reserved for only those humans who were considered truly human in this ideological sense (2010). The insidiousness of these ideas can be appreciated when we recognize the ways in which they have shaped the women's movement, which repeatedly failed to treat the challenges of Indigenous women, women of colour, and women with disabilities as *women's issues*, echoing the colonialist trope that non-white, non-able-bodied women are not really women at all.

We find, then, that the central project of this paper—specifying a species-inclusive gender category that can support a scientifically robust sex/gender distinction—can also be a robustly ethical project that is consistent with feminist political commitments. Van Anders' SCT allows us to avoid the tendencies in sex research towards reductive and essentializing dichotomies, and both she and Jordan-Young reveal not only the contingency of the developmental outcomes of sex, gender, and gender/sex, but also the contingency of the categories themselves. They show how this contingency is not a consequence of social construction run amok but is rather the result of the messiness of the biological world around us. We find here a rich, multifactorial approach to sexual configuration that lends itself not only to specifying the complexities and particularity of those sex-relevant behaviours that are typical of specific species or taxa but also to identifying the diversity of sexual configurations within a species, promising to make anomalous individual behaviours visible in the scientific study of nonhuman animals.

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