Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Prevalences and determinants of belief and lack of belief in gender identity in representative UK and US samples

Mark Thomas Blagrove

m.t.blagrove@swansea.ac.uk

Swansea University School of Psychology https://orcid.org/0000-0002-9854-1854

Andrew Thomas

Swansea University https://orcid.org/0000-0001-5251-7923

Research Article

Keywords: Critical social justice attitudes, gender, gender identity, identity, sex differences

Posted Date: November 6th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11634290/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License

Additional Declarations: The authors declare no competing interests.

Abstract

The term “gender identity” is widely used. However, its meaning is often uncertain, ranging from a euphemism for sex to an “internal sense of gender,” or a combination of levels of masculinity/femininity and beliefs about one’s sex and presentation. Given differences and uncertainties in the definition of gender identity, this research assessed prevalences and determinants of belief and lack of belief in having a gender identity. Three samples from the UK (*N*s = 302 and 300) and the US (*N* = 301) (ages 18–87; mean age 45.74 (SD = 15.75), 431 males, 472 females), representative for national sex and age distributions, were recruited via the online platform Prolific. Participants were presented with 15 sets of questions. Each set included a factual biographic question (e.g., interest in sports), a question on presence or absence of an identity related to the biography question, and an importance rating of that identity if present. A response of ‘No’ to the question ‘Do you have a gender identity?’ was given by 23.6% and 21.1% of the UK samples, and 20.3% of the US sample. Gender identity was more likely to be affirmed by females (Odds Ratio = 1.79) and by those who hold strong critical social justice attitudes (OR = 1.67). Females gave higher ratings for the importance of their gender identity than did males (OR = 2.09). Future research should investigate the different understandings individuals have of the term gender identity and longitudinally assess societal changes in prevalence of belief or lack of belief in gender identity.

Introduction

Questions about “gender” and “gender identity” are often included in demographic and monitoring questionnaires and the terms are used frequently in conversation, in formal and less formal published formats, and in scientific research (Pho et al., 2023; Sullivan, 2025, 2026). This paper focusses on the term gender identity, rather than gender, given the wide-ranging legal, social, personal, and theoretical implications of the term (Brubaker, 2026, pp. 29-63; Foran, 2026).

Although gender identity is widely referred to, its meaning is sometimes uncertain and definitions can be contradictory. One definition, and its original meaning, is knowledge of one’s sex and the awareness of being male or female (Byrne, 2023). Another is “the individual’s sense of what gender category [or categories] is an authentic statement of who they are” (Hyde et al., 2019, p. 181 [Brackets in original]), such as “a boy, a man, or male; a girl, a woman, or female; or a nonbinary gender (e.g., genderqueer, gender-neutral, agender, gender-fluid, transgender)” (American Psychological Association, 2026). In this definition, the meaning of “sense” is unclear, and could possibly include belief, knowledge, expression, or feeling. Gender identity can also be defined in terms of personality, such as “a deeply felt, internal sense of who you are on a spectrum of masculinity, femininity, and androgyny” (Therapist.com, 2025). Given the variety of definitions and contradictions between them, it is plausible that some people will not understand or might not even believe in the concept of gender identity. The current studies thus assess the prevalence of participants stating that they do not have a gender identity. The paper does not aim to form a conclusion on what gender identity is or should be, but aims instead to assess prevalence and determinants of use or non-use of the term for self-description.

Psychometric Measures of Gender Identity

Wood and Eagly (2015) distinguish two traditions of psychological research on gender identity, one based on personality, specifically masculinity and femininity, the second based on self-assignment to categories, which include male, female, and other categories. The latter tradition is seen in gender identity measures such as by Joel et al. (2014), Ho and Mussap (2019), and Zucker et al. (1993), with assignment or ratings such as feeling like or identifying as a man/boy or a woman/girl, but with no direct reference to masculinity/femininity. In contrast, direct reference to masculinity/femininity is used in Turban’s (2024, p. 38) definition “Gender identity refers to one’s psychological understanding of oneself in terms of masculinity, femininity, a combination of both, and sometimes neither.” The personality tradition is combined with self-assignment in other measures, such as the items “I try to do things that are masculine and feminine at the same time” and “I enjoy it when people are not sure if I am male or female” in the Genderqueer Identity Scale (McGuire et al., 2019, p. 300), which “was designed to assess gender identity across a full spectrum of gender” (McGuire et al., 2019, p. 289). Zucker et al. (2006) similarly have a composite measure in the 23-item Recalled Childhood Gender Identity/Gender Expression questionnaire, which uses a combination of masculinity/femininity, recalled gender-typed behavior, and recall of gender of friends and favorite playmate at school. Lindqvist et al. (2021) likewise recommend obtaining masculinity/femininity/gender expression self-ratings, as well as gender identity categories from free-text responses. The Gender Preoccupation and Stability Questionnaire lists a range of gender identities, including male, female, intersex, transgender, masculine, and feminine (Hakeem, 2018, p. 196), and Fraser’s (2018, p. 347) suggestion of one open ended question “What is your gender identity?” also allows for self-categorization and consideration of masculinity/femininity.

There is thus a variety of scales used to measure or categorize gender identity. Issues with this variety are highlighted by Fisher et al. (2025), who state that gender identity has “a wide range of measures and constructs including both self-report and researcher observations of preferences and behaviours. … gender identity measures are rarely found to correlate with one another, and contrasting patterns and trajectories are often found for each construct” (p. 319). These definitional issues are also found in philosophical approaches to gender identity.

Philosophical Approaches to Gender Identity

Jenkins (2018, p. 714) cautions that the definition of gender identity as “a sense of oneself as a man, woman, or some other gender” doesn’t define what this “sense” is, and can lead to circularity, if, for example, “to be a man *is* to identify as a man (or, to have a male gender identity).” Jenkins (2018) proposes a “norm-relevancy account” (p.728), in which someone has a particular gender identity if they experience certain gender norms as relevant to

them. Similarly, McKitrick (2015) describes gender as a complex behavioral disposition, or cluster of dispositions, in which one is prone to act in certain ways in certain circumstances. Gender for women, for example, is a disposition to behave as women are expected to behave. In response to the objection that some males are effeminate without being women, McKitrick states,

recall that gender is a matter of degree on this account. Do the effeminate males in question have "sufficiently many sufficiently strong dispositions" to behave in ways that are considered womanly by the relevant social group? If not, perhaps the man's behavior is more toward the feminine end of the spectrum than most males in the relevant context, but not so far as to be considered a woman. (p. 2586)

There is, however, a circularity in definitions here, as well as reification of behaviors and dispositions into internal gender identity categories. Under Cosker-Rowland's (2025) subjective fit account, "our gender identity is the gender category that seems to us to fit us, or if no category seems to particularly fit us, the gender category that we don't take to not fit us." (p. 5.) Circularity of definition is still present, though, as shown by the claim that,

For Alyse to have the gender identity *woman* is for Alyse to minimally understand what it is for Alyse to be treated as a woman and to not take it to be unfitting for her to be treated as a woman or to judge that it is positively fitting for her to be treated as a woman. (p. 297)

Further problems with Cosker-Rowland's account are detailed by Byrne (2026), regarding difficulty understanding what "fitting" means in the context of gender identity, and hence the target notion of gender identity not being adequately pinned down.

Doubt about any reality to a single reified gender identity is raised from a trans standpoint by Briggs and George (2023), for whom "there is no one thing that answers to the name 'gender' (or, for that matter, to the name 'gender identity')" (p. 2), because for some people it includes "conceptual tensions, apparent contradictions, and metaphysical vagaries" (p. 3). They proceed to state that "'Gender' doesn't pick out any one thing; it equivocates among many" (p. 5), such that "the concept of 'gender identity' is itself an unhelpful oversimplification" (p. 14). Similarly, also from a trans standpoint, Hernandez and Bell (2025) aim at "Unmotivating 'gender identity'." They claim that the concept of gender identity is "ringing of Cartesian dualism and a gender essentialism" (p. 1325), and "is rooted in an outdated sexology created by cis people, attempting to articulate 'wrong-body' narratives of transsexuality." (p. 1336.) Skepticism about the meaning of gender identity is also raised by Dembroff (2024), who prioritizes gender non-conformity over identity, and further complications and contradictions are explored by Stock (2021, pp. 109-141). These definitional complications and alternatives are then compounded by the many ways, some causal, some associational, that gender identity is claimed to be related to gender, or vice versa (Ashley, 2023; Bogardus & Byrne, 2024; Cosker-Rowland, 2023).

Many philosophical accounts provide experiential, dispositional, and social explanations for gender and gender identity, which have fed into wider society. Some people may agree with or accept these explanations and definitions, but for those who follow a more biological explanation for categorization as man or woman, or boy and girl, the experiential accounts and definitions of gender identity may be unpersuasive.

Public understanding of gender identity

When asked about one's gender identity some people may respond in terms of their sex, seeing the term as a polite euphemism, and others in terms of some, or all, of the definitions or components explored above. This range of understandings is explored by Bogardus (2026) and Byrne (2020). Gender identity may also be seen as an unclearly defined heuristic, with some people putting emphasis on some of its components, and others on different components, but having some vague understanding, or even mistaken understanding (Biggs, 2024), of what it means. However, some may take the view that the definitions of gender identity are contradictory, nebulous, and circular, or may disagree with political or cultural consequences of the term, even seeing gender as a system of oppression rather than as a matter of identity (Jeffreys, 2014; Todd, 2024). There may also be people who score low on masculinity and low on femininity (Bem, 1974), termed undifferentiated androgynous (McDermott, 2016), who might be less inclined to think of themselves in gendered or gender identity terms, even if they know and acknowledge their sex.

Given these debates and differences in understanding of the term it might be expected that some people would answer "no" if asked whether they have a gender identity, because if there is doubt or alternatives for all the definitions, some people might not agree with any of the definitions. This is even though there is a widespread implicit and sometimes explicit assumption in the literature (e.g., deMayo et al., 2025) and societally (Brubaker, 2026, pp. 11, 18-26, 60-63) that everyone has or must have a gender identity, and must be either "cis" or "trans." For example, in her evaluation of the methodology of the 2021 England and Wales Census, Sullivan (2025, p. 30) writes,

An additional problem with the ONS [Office for National Statistics] gender identity question is that it assumes that all respondents have a gender identity. ONS question testing acknowledged that some respondents objected to this assumption, and some found the comparison of two distinct concepts (sex and gender) in one question confusing. For someone who does not have a gender identity, there is no correct answer to the question.

In many jurisdictions gender identity is a legally protected characteristic, and so people are expected or even required to classify themselves in these terms. Supplementary Material Appendix 1 has an illustrative list of government and other bodies that hold that "everyone has a gender identity." However, in the UK, under the Equality Act 2010, gender identity is not a protected characteristic, whereas biological sex is (Foran, 2026). And it is lack of belief in gender and lack of belief in gender identity that fall under section 10 of the Equality Act 2010 as a protected lack of belief (Maya Forstater v CGD Europe and Others, 2021, para 106, p. 51). Furthermore, given that across jurisdictions there are debated social and political implications of gender identity (Brubaker, 2026, pp. 29-63; Cosker-Rowland, 2025, pp. 115-296; Foran, 2026), it may be expected that some people would deny having a gender identity, and others would affirm a gender identity, due to those implications. The research question thus arises of the prevalence of individuals who hold or who do not hold that they have a gender identity.

Conceptualization and Assessment of Identities

This research is predicated on the model that although individuals have many factual characteristics (e.g., age, interest in sports), social identities are to varying extents chosen, involving agency (Burke & Stets, 2023, pp. 6-8), interacting or looping with others and with social structures (Hacking, 2007), and commitment (Burke and Stets, 2023, pp. 42-43; Ellemers et al., 2002). This factual propositional versus identity distinction is detailed by Westra (2023). Westra (2023) argues that we employ two distinct concepts of belief in our everyday social interactions. The epistemic concept of belief keeps track of what people take to be true factually. The symbolic concept of belief, in contrast, is used as a means of signaling one's social identity, and community members monitor these symbolic beliefs to enforce social norms. Symbolic beliefs can have a greater emotional content than epistemic beliefs and can be less subject to countervailing evidence than epistemic beliefs, while still needing some grounding in one's biography and behavior.

Using this epistemic fact/symbolic identity distinction, the studies here present to participants 15 factual biographic questions, each followed by a question on the presence or absence of an identity related to that biographic question. One of the biographic questions asks for the participant's sex, followed by a question about whether the participant has or doesn't have a gender identity. Hypothesis 1 is that some participants will state that they do not have a gender identity. The set of sex and gender identity questions is presented second or last in the series of 15 question sets, which enables the testing of whether repeated prior consideration of various identities decreases the likelihood of assenting to a gender identity. The mechanism proposed here is that repeated deliberation on whether or not particular identities are held will cue participants to be aware that it is possible that they do not have a gender identity. We hypothesized that this repeated cueing would act to counter the frequent unreflective belief and assumption that everyone has a gender identity (Brubaker, 2026, p. 11, Sullivan, 2025, p. 30) and would reduce the likelihood of assenting to a gender identity (Hypothesis 2). Furthermore, as there may be individual differences in describing oneself and thinking of oneself in terms of identities, we also hypothesized that assenting to having a gender identity would be significantly associated with the number of other identities that the individual assents to having (Hypothesis 3).

The studies conceptualized identities at a practical level through the consideration of support, commitment, and reward that individuals have for an identity. This follows from Burke and Stets' (2023) statement that "an identity is legitimated by actual behavior in interaction with others" (p. 42), and they contrast this with identities being portrayed only in the imagination. They hold that the prominence of an identity depends on the levels of support, commitment, and reward the person has for the identity, and which of these factors weigh most or more heavily will vary from person to person. They detail that support includes self-support and support from others for a claimed identity; commitment means level of investment in an identity; and rewards can be intrinsic or extrinsic. They conclude that "The more prominent a role identity, the more likely it will be evoked in a situation" (p. 43), but that this prominence can be decreased and be overtaken by other identities if support, commitment, or reward for the identity diminish.

Sex, Critical Social Justice Attitudes, Political Affiliations, and Gender Identity

Lahtinen (2024) found that females are more likely to hold critical social justice attitudes toward gender issues and so we hypothesized that females would be more likely to assent to a gender identity than would males (Hypothesis 4). As beliefs about the mutability and importance of gender were shown by Lahtinen (2024) to be associated with overall score on his Critical Social Justice Attitudes (CSJA) scale, we also hypothesized that higher CSJA scorers will be more likely to assent to having a gender identity (Hypothesis 5). Furthermore, as critical social justice attitudes are usually by definition and in practice converse to conservative values, and as progressive politics has supported and led campaigns concerning gender and gender identity (Bogardus, 2026, pp. 110-129; Butler, 2006), we hypothesized that conservatives will be less likely to assent to having a gender identity than will people with progressive, liberal, or independent political affiliations (Hypothesis 6).

Hypotheses

H1 Some participants will state that they do not have a gender identity.

H2 Participants repeatedly cued with questions about the presence or absence of various identities will be less likely to then report having a gender identity than those not repeatedly cued prior to the gender identity question.

H3 Number of other identities affirmed will predict assenting to having a gender identity.

H4 Females will be more likely than males to assent to having a gender identity.

H5 Higher CSJA scores will predict assenting to having a gender identity.

H6 Conservatives will be less likely to assent to having a gender identity than those with progressive/liberal/independent political affiliations.

H1, H2, H3, and H4 were tested in Studies 1, 2 and 3; H5 and H6 were tested in Studies 2 and 3.

On an exploratory basis, we also consider predictors of importance ratings of one's gender identity, for participants assenting to a gender identity.

Method

Preregistration

Study 1 was preregistered as https://aspredicted.org/G5X_S42. Studies 2 and 3 were preregistered as https://aspredicted.org/6nn8-5cb8.pdf.

Participants

Participants for three studies, each representative for age and sex, were recruited from the UK and US using the Prolific online experiment recruitment platform: Study 1 (UK, *N* = 302; Study 2 (UK, *N* = 300); and Study 3 (US, *N* = 301). Demographic details are presented in Table 1. Study 1 was also representative for ethnicity, Study 2 for political affiliation, and Study 3 for political affiliation and ethnicity; Prolific functionality allows political affiliation and ethnicity to both be representative only in US samples.

Table 1
Demographics for the Three Studies

Study 1	**Country**	***N***	**Mean age**	***SD* age**	**Range age**	**Male *n***	**Female *n***
	UK	**302**	**46.45**	**15.74**	**18–80**	**141**	**161**
Study 2	UK	300	46.27	15.95	18–87	143	157
Study 3	US	301	44.50	15.53	18–78	147	154

Note: For political affiliations, ethnicities, and chronology of the three studies, see

Supplementary Material Appendix 2 – Participant Demographics and Supplementary Results.

Participants were recruited from Prolific's existing pool of registered users, which span a wide demographic variety and variety of usual employment, and which are closely screened to be 100% humans and not bots or AI (www.Prolific.com). The high quality of Prolific data collection is confirmed by Peer et al. (2022). Eligibility for the study was determined from prospective participants' profile information; eligible users could choose to join the study through their Prolific dashboard. For representative sampling, Prolific allocates places across demographic subgroups using recent census- and election-based quotas, with places within those subgroups filled primarily on a first-come, first-served basis. The sample sizes were chosen so as to meet Prolific's sample size requirement for representative samples. Prolific provided political affiliation and ethnicity data for each participant in Studies 2 and 3.

The title advertised on Prolific for the studies was "Biography, Personality, Interests, Beliefs & Self-Description Study." The description used on Prolific for each study was "We are conducting research on individuals' biography, personality, beliefs and interests. You will be asked questions about facts from your life, such as how far you live from your childhood town or city, and about your beliefs and how you describe yourself. The survey takes about 15 minutes."

Measures and Procedure

Participants were given the definition of identity as "your view of yourself, or how you think of yourself, and an essential ingredient of who you are." (From Burke & Stets, 2023, pp. 41 & 172.) They were also told "How I identify myself has a bearing on how I define my interests. How I define my interests may encourage me to identify myself in particular ways." (From Jenkins, 2014, p. 8.) Participants were instructed that they would be rating the importance of each of their identities by considering three components of identity: support, commitment, and reward (from Burke & Stets, 2023, p. 43; commitment is also a characteristic of identity in Ellemers et al., 2002). Instructions given to participants on this can be seen in Supplementary Material Appendix 1 (Participant Introduction).

The study questionnaire was then presented to participants. Participants were first asked to state in free-form format their five most important identities. The instructions were: "Firstly, please think about your life, your self, your roles, your personality, characteristics, interests, beliefs, history, how people see you. Please write here your five most important identities." After responding, participants were next presented with 15 sets of questions, each set comprising a factual biographic question (e.g., one's age; whether one has an interest in sports), followed by a Yes/No question asking whether the participant has an identity corresponding to the biographic question. The list of identities in order of presentation was: Hometown; Gender; Employment; National; Extraversion/introversion; Age; Star sign; Religious; Musical; Sports; Non-work role; Educational place; Political; Type of book, or author; and Type of film or TV series. For each participant the sex and gender question set was placed second or last in the series, by random allocation. Most sets of questions also asked the participant to state the identity, if they had assented to having one. Participants who assented to an identity then rated how important the identity is to them on a 5-point scale: "Not at all important" [1]; "Slightly important" [2]; "Moderately important" [3]; "Very important" [4]; and "Extremely important" [5]. Response options were coded 1 to 5 for statistical analyses. Appendix 1 in the Supplementary Material reports the full list of questions in the biography and identity question sets.

The sex and gender identity question set first asked "What is your biological or legal sex?" with response options Male or Female. (Sex was requested as "biological or legal" because "sex" or "sex as registered at birth" may have been intrusive for some participants.) Participants were next asked "Do **you** have a **gender identity**?" with response options Yes or No. (Bold type was used for all identity questions in this way.) If a participant responded Yes to this gender identity question, they were presented with the instruction: "Please state here what your gender identity is." After responding they rated

the importance of this identity using the 5-point scale. As with all items in the questionnaire, the sex and gender identity questions could be clicked through, as responses were not obligatory. One participant did not answer the sex or the gender identity question, all that person's data were excluded as it was not possible to interpret those responses.

Finally, the 7 items of the Lahtinen (2024) Critical Social Justice Attitudes (CSJA) scale were responded to on a 5-point scale, ranging from "completely disagree" to "completely agree." Response options were coded 1 to 5 for statistical analyses. The list of CSJA items and the item mean scores are reported in Supplementary Table 1. The CSJA scale was not included in Study 1. Examples of items are: "University reading lists should include fewer white or European authors."; "Microaggressions* should be challenged often and actively. (* = verbal communication or act, which can be seen to reflect negative attitudes towards a minority group, regardless of original intent)"; and "Trans* women who compete with women in sports are not helping women's rights. (* = born male, identify as female) (reverse scored)."

Data Analysis

Four chi-square analyses were conducted to investigate whether Yes/No responses to the gender identity question differed between the three studies, between the conditions where the sex and gender identity question set was placed second versus last in the list of question sets, between males and females, and between conservatives and progressives. Sex- and gender-based responses to the initial five free-form identity questions, responses to the request to name one's gender identity, and responses to Yes/No questions for the presence/absence of the 15 specified identities are reported as frequencies. Non-sex and non-gender responses to the initial five free-form identity questions were scored by a Large Language Model, due to the variety and large number of these responses, and validated by human scoring. Differences by sex, by participant country (UK/US), and by political affiliation (conservative/progressive) were calculated for all variables. Binary logistic regression was used to quantify predictors of Yes/No responses to the gender identity question and ordinal logistic regression was used to quantify predictors of importance of gender identity for those who reported having a gender identity. Statistics software used IBM SPSS Statistics for Windows (Version 32.0). IBM Corp., Armonk, NY, USA.

Results

Table 2 shows the responses to the gender identity Yes/No question for each study (top panel), for where the gender identity question was asked second versus last in the list of questions (second panel), for male and female participants separately (third panel), and for conservatives versus progressives (bottom panel). There was no significant difference in the split of Yes/No responses between the studies in response to the gender identity question. The data from the three studies are thus combined for analyses. Overall, 21.6% of participants (n = 195) stated that they do not have a gender identity, confirming Hypothesis 1. There was no significant difference in response to the gender identity question between those who were presented with the question second versus last in the series of question sets. Hypothesis 2 was thus not confirmed. Confirming Hypothesis 4, females were significantly more likely to state that they have a gender identity than were males. In all three studies females were more likely to claim a gender identity than were males, see Supplementary Table 2 for gender identity responses for the UK and US samples separately. The bottom panel of Table 2shows that conservatives and progressives did not differ significantly on stating that they have or do not have a gender identity, disconfirming Hypothesis 6. This lack of association also held for the UK sample alone (Supplementary Table 3), but for the US, and contrary to the reasoning behind Hypothesis 6, Republicans were significantly more likely to state that they have a gender identity than were Democrats or Independents, albeit with small effect sizes (Cramér's Vs = .16 and .17, respectively; Supplementary Table 4).

Table 2

Responses to the Gender Identity Question for each Study (top panel), for Where the Gender Identity Question was Asked Second Versus Asked Last in the List of Questions (second panel), for Male and Female Participants Analyzed Separately (third panel), and for Political Affiliation (bottom panel), N = 903

	Do you have a gender identity?			
	Yes	**No**	**% 'No'**	**χ^2**
Study 1[a]	230	71	23.5	$\chi^2(2) = 1.07$,
Study 2[a]	236	63	21.0	$p = .587$,
Study 3	240	61	20.3	$V^e = .03$
Total	706	195	21.6	
Gender identity question asked second[b]	350	102	22.5	$\chi^2(1) = 0.46$,
Gender identity question asked last	356	93	20.7	$p = .499$, V = .02
Male[a]	311	119	27.6	$\chi^2(1) = 17.65$,
Female[a]	395	76	16.1	$p < .001$, V = .14
Conservative[c]	152	29	16.0	$\chi^2(1) = 3.79$,
Progressive[ad]	306	92	23.1	$p = .052$, V = .08

Notes: [a]One participant did not answer the question "Do you have a gender identity?"

[b]Two participants did not answer the question "Do you have a gender identity?" [c]Conservatives are defined as Republicans (US sample) and as Conservatives and Reform UK (UK sample). [d]Progressives are defined as Democrats and Independents (US sample), and as Green, Labour, and Liberal Democrats (UK sample). [e]Cramér's V effect size. Association between political affiliation and assenting/not assenting to a gender identity for the UK or US samples separately are reported in Supplementary Tables 3 and 4, respectively. There was no significant association between ethnicity and assenting/not assenting to a gender identity for UK or US samples (Supplementary Tables 5 and 6, respectively).

The gender identities reported by the 706 participants who assented to having a gender identity are listed in Supplementary Table 7. Most responded with male or female (70.7%), followed by man, boy, woman or girl (11.9%). Others included an attribute with male or female (6.0%) or with man or woman (3.0%), for example "non-girlie woman," "woman feminine," "male, supports family." Smaller percentages occurred for non-binary (0.8%), trans man or trans woman (0.4%), and queer/gender queer (0.3%). Thus, of the 903 participants, 78.2% assented to having a gender identity. This is comparable to the percentages assenting to a national identity (81.1%) and a hometown identity (69.4%, for theoretical context see Goodhart, 2017), as shown in Supplementary Table 8, which reports the percentage of Yes responses to each of the 15 identity questions.

In contrast to the 78.2% of participants assenting to a gender identity when specifically asked about it, Table 3shows that when participants were asked to state their five most important identities at the start of the questionnaire, sex-, gender-, and sexuality-based identities were reported only rarely: percentages were, for man or woman, including synonyms and compound nouns, 8.6%; male or female, 3.4%; genderqueer/non-binary/trans, 2.8%; and sexual orientation, 3.5%. More common was a sex- or gender-based relationship, such as mother, grandmother, or boyfriend, for 44.9% of participants, which would not be classed as a gender identity.

Table 3

Number and Percentage of Participants (out of N = 903) who Stated They Have Specific Categories of Sex-, Gender-, Relationship- or Sexual Orientation-Based Identities in Their Five Most Important Identities at the Start of the Questionnaire

Category	Stated	
	n	**%**
Male or female	31	3.4%
Man or woman[a]	78	8.6%
Sex- or gender-based relationship[b]	405	44.9%
Genderqueer/non-binary/trans[c]	25	2.8%
Sexual orientation[d]	32	3.5%

Notes: Examples of items placed in these categories: [a]man, woman, man of God, sportsman; [b]father, mother, aunt, grandmother, girlfriend, cat dad; [c]genderqueer, queer, non-binary, trans (*n* = 3, 0.3% of 903 participants); [d]heterosexual, bisexual, homosexual, sexual orientation, pansexual, gay, lesbian; non-heterosexual identities in this category, *n* = 23, 2.5% of 903 participants. Of the 903 participants, one responded feminine, this response is not included in the above categories; no participants responded with masculine, masc, fem or femm. Frequencies for these and all other categories of identities as derived by a Large Language Model are shown in Supplementary Table 10.

To assess the frequencies of the other categories of identity reported as free-form responses at the start of the questionnaire, the 4487 responses from the 903 participants were input to a Large Language Model (LLM), specifically OpenAI's ChatGPT Work Mode, Codex, based on GPT-6. This quantified as most frequent on a per participant basis the identities categorized as "Personality, qualities, dispositions and values" (*n* = 535, 59.2% of participants), "Relationships" (*n* = 530, 58.7%), "Gendered relationships" (e.g., girlfriend, brother, *n* = 410, 45.4%; these being a subset of Relationships), and "Hobbies, art and leisure" (*n* = 373, 41.3%). Importantly, and very similar to the human scoring in Table 3, the LLM derived low frequencies for identity categories man or woman, including synonyms and compound nouns (9.3%), male or female (3.3%), genderqueer/non-binary/trans (2.5%), and sexual orientation (3.4%). The frequencies for all LLM derived categories are presented in Supplementary Table 10. Appendix 3 reports the instructions given to the LLM and also the human/ChatGPT inter-rater validation data, showing very high levels of agreement between ChatGPT and human raters.

Predictors of Presence/Absence of Gender Identity and of Importance of Gender Identity

As reported above, Hypothesis 2, lack of gender identity being more likely to be reported after repeated questioning about presence or absence of identities, was not confirmed. Table 4 presents descriptive statistics showing that the mean total number of identities other than gender identity was significantly higher for participants who assented to a gender identity compared to those who responded no to the gender identity question, with a small effect size (η^2 = .03); Hypothesis 3 was thus confirmed. The lack of an interaction between response to the gender identity question and whether the gender identity question was presented second or last in the list of questions, with η^2 = .00, means that the relationship of gender identity response to number of identities affirmed was the same whether the gender identity question was presented second or last in the list of identity questions. This lack of an effect of question order further disconfirms Hypothesis 2. Although unhypothesized, Table 4 also reports that there was no significant difference between participants who assented to a gender identity versus participants who responded no to the gender identity question, for mean importance rating of the other 14 identities. Table 4also reports that CSJA score is significantly higher for participants who state that they have a gender identity compared to participants who respond no to the gender identity question. Hypothesis 5 was thus confirmed.

Table 4

Descriptive Statistics for Mean Total Number and Mean Importance of Identities Other Than Gender Identity, and Mean Critical Social Justice Attitudes, for Participants who stated Yes versus No for Having a Gender Identity

	Gender Identity -Yes			**Gender Identity - No**			**F or *t*-test**			
	Mean	***SD***	***n***	**Mean**	***SD***	***n***	***F/t***	***df***	***p***	***η²/d***
Total # identities	6.23	2.73	706	5.12	2.44	195	26.08	1,897	< .001	η^2=.03
Importance of identities	3.42	0.68	702	3.44	0.74	192	0.33	892	.740	*d* = 0.03
CSJA scale	2.96	0.82	476	2.73	0.82	124	2.81	598	.005	*d* = 0.28

Note: F-test is used for total number of identities so as to assess effect of condition, where gender identity question was placed second or last in the list of identities: Condition effect, F(1,897) = 0.38, *p* = .536, η^2 = .00; Testing interaction, Condition x Gender Identity response (Yes/No), F(1,897) = 0.04, *p* = .844, η^2 = .00.

Table 5 reports descriptive statistics for males and females on total number of affirmative responses to the other identity questions, mean importance of those identities, importance of gender identity, and CSJA score. The table shows that females scored significantly higher than males on CSJA and on importance of their gender identity. Controlling for sex, age had a significant partial correlation with importance of one's gender identity (*r*(702) =.12, *p* =

.002) but not with presence/absence of gender identity ($r(897) = -.01$, $p = .824$), and CSJA score had a significant negative correlation with importance of one's gender identity ($r(473) = -.22$, $p < .001$).

Table 5
Descriptive Statistics for Critical Social Justice Attitudes, Mean Total Number and Mean Importance of Identities Other Than Gender Identity, and Mean Importance of Gender Identity, for Male and Female participants separately, with Cohen's d effect size

	Male			**Female**			**Independent t-test**			
	Mean	***SD***	***n***	**Mean**	***SD***	***n***	***t***	***df***	***p***	***d***
CSJA scale	2.76	0.83	290	3.05	0.79	311	4.38	599	< .001	0.36
Total # identities	5.88	2.75	431	6.08	2.67	472	1.10	901	.271	0.07
Importance of identities	3.38	0.71	428	3.47	0.67	468	1.95	894	.051	0.13
Importance of gender identity	3.67	1.25	311	4.16	0.92	395	5.84	551.36	< .001	0.46

Notes: Gender identity was rated as significantly more important than mean importance of the other identities, paired-sample t-test, $t(701) = 12.87$, $p < .001$, Cohen's $d = 0.49$.

Table 6 reports descriptive statistics for conservatives and progressives on the identity question variables and CSJA. Conservatives scored significantly higher than progressives on importance of their identities and on importance of their gender identity. As would be expected, conservatives scored significantly lower than progressives on CSJA. Supplementary Table 11 shows that there was no significant difference in political affiliation (conservative versus progressive) between males and females. Supplementary Table 12 reports that the UK and US participants did not differ significantly on CSJA score, mean importance of identities, or importance of gender identity, but the US participants had a significantly higher number of other identities than did the UK participants. Supplementary Table 13 reports no significant difference between the UK and US samples on political affiliation.

Table 6
Descriptive Statistics for Critical Social Justice Attitudes, Mean Total Number and Mean Importance of Identities Other Than Gender Identity, and Mean Importance of Gender Identity, for Conservative and Progressive participants separately, with Cohen's d effect size

	Conservative			**Progressive**			**Independent t-test**			
	Mean	***SD***	***n***	**Mean**	***SD***	***N***	***T***	***df***	***p***	***d***
CSJA scale	2.33	0.60	181	3.17	0.77	399	14.38	439.76	< .001	0.72
Total # identities	6.55	3.03	181	6.06	2.59	399	1.92	304.14	.056	2.73
Importance of identities	3.52	0.72	179	3.35	0.68	398	2.63	575	.009	0.69
Importance of gender identity	4.24	0.96	152	3.82	1.09	306	4.03	456	< .001	1.05

Notes: Conservatives are defined as Republicans (US sample), and Conservatives and Reform UK (UK sample); Progressives are defined as Democrats and Independents (US sample), and Green, Labour, and Liberal Democrats (UK sample).

A binary logistic regression was calculated to investigate predictors of presence/absence of a gender identity. The model was statistically significant, $\chi^2(df = 5, n = 579) = 37.49$, $p < .001$, explaining between 6.3% (Cox & Snell R^2) and 9.8% (Nagelkerke R^2) of variance in gender identity and correctly identifying 79.4% of cases. As 78.4% of participants assented to having a gender identity the model only improves identification of cases by 1.0% above a model that identifies all cases as having a gender identity. Table 7 shows the binary logistic regression statistics for variables predicting presence/absence of a gender identity. Females, high scorers on CSJA, high scorers on number of other identities, and conservatives, were significantly more likely to assent to a gender identity. Hypotheses 3, 4, and 5 were thus confirmed. Hypothesis 6 was not confirmed.

Table 7

Binary Logistic Regression Predictors of Presence/Absence of Gender Identity: Sex, CSJA Score, Total Number of Identities Affirmed on the Other Identity Questions, Study Country (UK/US), and Political Affiliation (Conservative/Progressive)

	B	**SE**	**Wald**	**df**	***p***	**OR**	**95% CI OR**	
							LL	**UL**
Sex	0.58	0.22	7.18	1	.007	1.79	1.17	2.74
CSJA	0.51	0.15	11.73	1	< .001	1.67	1.25	2.24
Total identities	0.12	0.04	8.03	1	.005	1.12	1.04	1.22
UK/US	0.13	0.21	0.39	1	.533	1.14	0.75	1.73
Con/Prog	-0.85	0.27	9.67	1	.002	0.43	0.25	0.73
Constant	-0.55	0.47	1.41	1	.235	0.58		

Notes: Gender identity is coded absence = 0, presence = 1; sex is coded male = 1, female = 2; political affiliation is coded conservative = 1, progressive = 2. OR = Odds Ratio

An ordinal logistic regression was calculated to investigate predictors of self-rated importance of gender identity. The model was statistically significant, χ^2(df = 7, n = 454) = 122.20, p < .001, explaining between 23.6% (Cox & Snell R^2) and 25.4% (Nagelkerke R^2) of variance in self-rated importance of gender identity. Table 8 shows ordinal logistic regression statistics for variables predicting importance of gender identity. Females and high scorers on number and importance of other identities gave significantly higher ratings for the importance of their gender identity. However, CSJA score was inversely related to importance of gender identity.

Table 8

Ordinal Logistic Regression Predictors of Self-Rated Importance of one's Gender Identity, for all Participants who Reported a Gender Identity: Sex, CSJA Score, Total Number of Identities Affirmed on the Other Identity Questions, Mean Importance of the Other Affirmed Identities, Age, Study Country (UK/US), and Political Affiliation (Conservative/Progressive)

	B	**SE**	**Wald**	**df**	***p***	**OR**	**95% CI OR**	
							LL	**UL**
Sex	0.74	0.18	15.95	1	< .001	2.09	1.45	3.03
CSJA	-0.44	0.13	11.03	1	< .001	0.64	0.49	0.83
Total other identities	0.16	0.03	20.33	1	< .001	1.17	1.09	1.25
Mean importance other identities	1.03	0.14	53.39	1	< .001	2.85	2.13	3.70
Age	0.00	0.01	0.04	1	.835	1.00	0.99	1.01
UK/US	0.15	0.18	0.68	1	.411	1.16	0.81	1.66
Con/Prog	0.34	0.23	2.20	1	.138	1.40	0.90	2.19
Notes: Test of parallel lines was non-significant: χ^2(21) = 30.12, p = .090. OR = Odds Ratio								

Discussion

Across three representative UK and US samples, 21.6% of participants stated that they do not have a gender identity. This confirmed Hypothesis 1. Gender identity was significantly more likely to be affirmed by females, with a medium effect size (OR = 1.79), confirming Hypothesis 4. Females also rated their gender identity as significantly more important than did males, with a medium to large effect size (OR = 2.09). This sex difference may be because, under the condition of widespread societal expectation of people having a gender identity, females have a stronger moral, ethical, or political belief in, or acceptance of, gender identity than do males. Various factors may underlie this. Females have higher concern for care, fairness, and purity in their moral judgements than do males (Atari et al. 2020), are more agreeable in their self-descriptions (Schmitt et al., 2008), and more empathic (Romero et al., 2026) and concerned for the effects of words and speech on others (Pratt et al., 2026). Females are also more likely than males to judge a person's gender in line with their self-identified gender than with the gender/sex registered at birth (Rad et al., 2019). These factors may lead to greater acceptance by females of expectations about having a gender identity, as well as acceptance when a gender identity is claimed by others. Additionally, this may be augmented by females scoring higher than males on sensory processing sensitivity (Morales-Botello et al., 2025). This

sensitivity encompasses facets including empathy, and sensitivity to one's own physical and mental sensations and to those of others (Aron & Aron, 1997).

Presence/absence of gender identity was also associated with number of other identities affirmed, confirming Hypothesis 3, with a small effect size (OR = 1.12). This indicates that there is a relationship between holding that one has a gender identity and thinking of oneself in general in terms of identity and identities. Such a relationship is also supported by the significant strong association between the importance rating of gender identity and mean importance rating of the other affirmed identities (OR = 2.85). However, contrary to Hypothesis 2, repeated cueing with identity questions did not lead to a decreased likelihood of assenting to a gender identity. This suggests a robustness to belief in having a gender identity.

Having a gender identity was more likely to be affirmed by those scoring high on critical social justice attitudes, with a medium effect size (OR = 1.67). This confirmed Hypothesis 5. It may be that hard-nosed low CSJA individuals might disbelieve the notion of gender identity, and deny having one, in contrast to progressive social justice-minded individuals for whom gender identity is part of a general sociopolitical belief system. It is intriguing, however, that for those who stated they have a gender identity, it was rated as being significantly more important by those with lower CSJA scores, with a medium effect size (OR = 0.64). We speculate that assent to a gender identity may be divided between those who interpret it biologically and those who are high in CSJA, who may have a more social and even social constructivist interpretation of gender identity (Butler, 2006). The former may be proud of their sex and of achievements and expectations surrounding it, hence rating this identity as very important. The latter may on ideological grounds believe or know they have a gender identity, but their particular gender identity may be relatively less important to them than for those with a biological interpretation of the term; this could be especially characteristic of high CSJA individuals who are androgynous. Relevant to these different understandings of gender identity and individual differences in ratings of its importance, Stock (2021, p. 138) explores how some people might have a strong gender identity of their own sex, such as a male who is a bodybuilder, or a female having cosmetic surgery to reach feminine cultural ideals, or have a gender identity of the opposite sex, or lack a strong psychological identification with either sex, which Stock states can mean having no gender identity at all.

The binary logistic regression finding that progressives were significantly less likely to assent to a gender identity than conservatives disconfirmed Hypothesis 6. Initial chi-square analyses had shown that there was no significant association between political affiliation and assenting to gender identity for UK and US samples combined, and for the UK sample alone, but for the US sample, Republicans were significantly more likely to say they have a gender identity than were Democrats or Independents. Although the finding for the US sample requires replication, it raises the question of whether Republicans interpret the term gender identity as referring to their biology. Such an interpretation of the term would follow from the association between political conservatism and gender binary beliefs (Norton & Herek, 2013). It is, however, not possible from the data in the present study to discern whether US political affiliations differed in their interpretation of the term gender identity, as all political affiliations in the US sample had more male/female responses than man/woman/girl responses when asked to state their gender identity, and there was no appreciable difference in gender name responses as a function of political affiliation. Indeed, across the three studies, most responses when asked to specify the gender identity were male or female rather than man or woman. Following Schudson et al.'s (2019) survey of how male/female/man/woman terms are understood, and the findings of Jarvis (2022) that the words "men" and "women" are used predominantly in everyday English to mark a distinction of biological sex, this suggests that gender identity might have been seen primarily in our studies as biological.

Lack of Belief in Having a Gender Identity

The three studies found that a significant minority of people (~ 21%) state when asked that they do not have a gender identity. Furthermore, sex- or gender-based identities were rare in free-form responses to a request to state one's top five identities, where only 8.6% responded with man or woman, including synonyms and compound nouns, and 3.4% with male or female. Similarly, Turner and Brown (2007) found that, for children, gender was very rarely reported as a response to a request for spontaneous self-description about identities but was reported when specifically cued.

There may be many reasons why individuals state that they don't have a gender identity. One possibility is Bem's (1995) concept of dismantling gender polarization, in which individuals "turn the volume down" (p. 329) on gender, resulting in diminishing belief or interest in gender or genders. Bem (1995) relates this to androgyny:

In an early paper on androgyny, I suggested that "when androgyny becomes a reality, the concept of androgyny will have been transcended" (Bem, 1976, p. 60). I meant by this that when the androgynous message had finally been absorbed by the culture, the concepts of masculinity and femininity would cease to have content, and the distinctions to which they refer would blur into invisibility. (p. 330)

A similar point is made by Earp (2021), using analogies to explore whether it would be socially desirable to abolish gender by removing prescriptive social distinctions based on sex. Likewise, Briggs and George (2023) state that "If we understand 'gender' as a system of norms, then there's a cogent (though not airtight) case against 'gender'" (p. 81), and they speculate that it might be that "removing gender norms will cause people to lose interest in the categories until they naturally fade away." (p. 85.) Although Briggs and George immediately cast doubt on this eventuality, this lack of interest in gender categories might characterize some of our participants who stated that they do not have a gender identity.

Of relevance to this, Winer (2025) studied asexual individuals, that is, individuals who do not feel sexual attraction to other people, and found that many "were ambivalent, indifferent, and detached from gender as a system for understanding and defining the self." (p. 2.) Winer introduced the term gender detachment to describe this phenomenon, stating "Gender detachment entails situating gender as irrelevant, unimportant, pointless, and/or not useful

for understanding and defining the self. The emergence of gender detachment points to the existence of, and the desire to break free from, compulsory gender." (p. 10.) It is not clear from Winer's paper whether these individuals were asked about or acknowledge their sex, whereas in the current studies participants were asked about sex and gender identity separately, and all participants who stated that they do not have a gender identity did report their sex.

As reviewed above there are many social and identity definitions of gender identity. That there are so many different measures and components suggests that the jingle fallacy may be occurring. In the jingle fallacy two or more distinct psychological phenomena are labeled with the same name (Hanfstingl et al., 2024; Pekrun, 2023), which can result in unclear definition and reification of the labeled name (Altgassen et al., 2024). It is arguable that the term gender identity is a reified conflation of belief, personality, and sense or feeling variables, this conflation having further issues regarding circularity of definition and reliance on the interpretation of subjective experience (Griffin et al., 2021).

The implication here is that when monitoring, survey, or research questions ask for respondents' gender identity, an option of "none" should be given. This would be inclusive of and respect individuals who believe that, although they have a sex, they do not have a gender identity. This would also allow for sex and gender identity to be assessed separately, as proposed by Gribble (2025), Landén (2026), and Sullivan (2025, 2026).

Limitations and Future Research

The studies presented the term gender identity without any specific definition and without asking participants how they understand the term, although a definition and characteristics of identities in general were given. Individual differences in understanding gender identity should be explored in future research. Likewise, just as gender identity may be asserted but with various definitions being used, a no response to a gender identity question could be interpreted in various ways. For example, there may be a deliberate and considered lack of belief in gender identity, or a lack of belief due to uncertainty about its definition, or uncertainty regarding how to apply a definition to oneself, or just indifference to the idea of gender. Future studies should address the proportions of responses that fall under such various belief and lack of belief interpretations, by asking participants what they mean by their responses. These responses and interpretations should also be investigated as a function of number of other identities asserted, of androgyny, of levels of belief in traditional sex-roles, and levels of other sex/gender-based beliefs (Bailey et al., 2024). Such investigations should also include the gender-based CSJA items in Lahtinen (2024) that were excluded from the final 7-item CSJA scale. Given political and cultural developments regarding gender and belief in gender identity (Brubaker, 2026, pp. 64–126), longitudinal studies assessing changes in levels of belief and lack of belief in gender identity are also recommended.

Declarations

Funding: None, not applicable.

Conflicts of interest/Competing interests (include appropriate disclosures): None.

Availability of data and material: Data and materials are archived at CERN OpenAIRE Data Centre, Geneva, Switzerland. https://doi.org/10.5281/zenodo.23667493

Code availability: Instructions given to LLM ChatGPT-6 for computing categories and frequencies presented in Supplementary Table 10 are reported in Supplementary Material Appendix 3.

Author contributions: Author 1 -- Conceptualization, Methodology, Resources, Software, Investigation, Validation, Formal analysis, Data curation, Visualization, Writing- Original draft preparation; Writing- Reviewing and Editing. **Author 2** -- Conceptualization, Methodology, Validation, Visualization, Writing- Original draft preparation, Writing- Reviewing and Editing.

Compliance with Ethical Standards:

Research involving Human Participants: The studies received institutional ethics committee approval for research involving human participants.

Informed consent: Participants gave written informed consent prior to taking part.

Acknowledgement: Categories and data in Supplementary Table 10 were derived in collaboration with OpenAI. (2026). ChatGPT [Large Language Model; Codex/GPT-6]. http://ChatGPT.com

References

1. Altgassen E, Geiger M, Wilhelm O (2024) Do you mind a closer look? A jingle-jangle fallacy perspective on mindfulness. Eur J Pers 38:365–387. https://doi.org/10.1177/08902070231174575
2. American Psychological Association (2026) APA Dictionary of Psychology, entry for gender identity, updated 6th March 2026. Accessed 24th March 2026. https://dictionary.apa.org/gender-identity
3. Aron EN, Aron A (1997) Sensory-processing sensitivity and its relation to introversion and emotionality. J Personal Soc Psychol 73:345–368. https://doi.org/10.1037/0022-3514.73.2.345

4. Ashley F (2023) What is it like to have a gender identity? Mind 132:1053–1073. https://doi.org/10.1093/mind/fzac071
5. Atari M, Lai MHC, Dehghani M (2020) Sex differences in moral judgements across 67 countries. *Proceedings of the Royal Society B*, *287*, 20201201. http://dx.doi.org/10.1098/rspb.2020.1201
6. Bailey AH, Dembroff R, Wodak D, Ikizer EG, Cimpian A (2024) People's beliefs about pronouns reflect both the language they speak and their ideologies. J Exp Psychol Gen 153:1388–1406. https://doi.org/10.1037/xge0001565
7. Bem SL (1974) The measurement of psychological androgyny. J Consult Clin Psychol 42:155–162. https://doi.org/10.1037/h0036215
8. Bem SL (1976) Probing the promise of androgyny. In: Kaplan AG, Bean JP (eds) Beyond sex-role stereotypes: Readings toward a psychology of androgyny. Little Brown, pp 48–62
9. Bem SL (1995) Dismantling gender polarization and compulsory heterosexuality: Should we turn the volume down or up? J Sex Res 32:329–334. https://doi.org/10.1080/00224499509551806
10. Biggs M (2024) Gender identity in the 2021 census of England and Wales: How a flawed question created spurious data. Sociology 58:1305–1323. https://doi.org/10.1177/00380385241240441
11. Bogardus T (2026) *The nature of the sexes: Why biology matters.* Routledge
12. Bogardus T, Byrne A (2024) Ashley on gender identity. Controversial Ideas 4:2
13. Briggs RA, George BR (2023) What even is gender? Routledge
14. Brubaker R (2026) Gender identity: The career of a category. Polity
15. Burke PJ, Stets JE (2023) Identity theory, second edition. Oxford University Press
16. Butler J (2006) Gender trouble: Feminism and the subversion of identity. Routledge
17. Byrne A (2020) Are women adult human females? Philos Stud 177:3783–3803. https://doi.org/10.1007/s11098-019-01408-8
18. Byrne A (2023) The origin of gender identity. Arch Sex Behav 52:2709–2711. https://doi.org/10.1007/s10508-023-02628-0
19. Byrne A (2026) Review essay. Gender identity: What it is and why it matters. Philos Public Affairs 54:213–217. https://doi.org/10.1111/papa.70022
20. deMayo B, Gallagher N, Leshin R, Olson K (2025) Stability and change in gender identity and sexual orientation across childhood and adolescence. Monogr Soc Res Child Dev 90:7–172. https://doi.org/10.1111/mono.12479
21. Cosker-Rowland R (2023) Recent work on gender identity and gender. Analysis 83:801–820. https://doi.org/10.1093/analys/anad027
22. Cosker-Rowland R (2025) Gender identity: What it is and why it matters. Oxford University Press
23. Dembroff R (2024) Reimagining transgender. In T. Bettcher, P. Zurn, A. Pitts & P. J. DiPietro (eds). *Trans Philosophy: Meaning and Mattering*(pp. 25–40). University of Minnesota Press. https://www.jstor.org/stable/10.5749/jj.13083379.5
24. Earp BD (2021) Abolishing gender. In D. Edmonds (Ed.), *Future morality* (pp. 35–49)
25. Oxford University Press. https://doi.org/10.1093/oso/9780198862086.003.0004
26. Ellemers N, Spears R, Doosje B (2002) Self and social identity. Ann Rev Psychol 53:161–186. https://doi.org/10.1146/annurev.psych.53.100901.135228
27. Equality Act (2010) c. 15. https://www.legislation.gov.uk/ukpga/2010/15/contents
28. Fisher E, Wright S, Sargeant C (2025) What do measures of gender identity tell us about gender identity over time? Br J Dev Psychol 43:319–341. https://doi.org/10.1111/bjdp.12491
29. Foran M (2026) Sex, gender identity and the law. Cambridge University Press
30. Fraser G (2018) Evaluating inclusive gender identity measures for use in quantitative psychological research. Psychol Sexuality 9:343–357. https://doi.org/10.1080/19419899.2018.1497693
31. Goodhart D (2017) The road to somewhere: The populist revolt and the future of politics. Penguin
32. Gribble KD (2025) A proposal for terminology for clear communication and avoidance of confusion in relation to sex, the social expectations of the sexes and gender identity. Arch Sex Behav 54:3833–3840
33. https://doi.org/10.1007/s10508-025-03310-3
34. Griffin L, Clyde K, Byng R, Bewley S (2021) Sex, gender and gender identity: A re-evaluation of the evidence. BJPsych Bull 45:291–299. https://doi.org/10.1192/bjb.2020.73
35. Hacking I (2007) Kinds of people: Moving targets. *Proceedings of the British Academy*, *151*, 285–318. https://doi.org/10.5871/bacad/9780197264249.003.0010
36. Hakeem A (ed) (2018) Trans: Exploring gender identity and gender dysphoria. Trigger
37. Hanfstingl B, Oberleiter S, Pietschnig J, Tran US, Voracek M (2024) Detecting jingle and jangle fallacies by identifying consistencies and variabilities in study specifications – a call for research. Front Psychol 15:1404060. https://doi.org/10.3389/fpsyg.2024.1404060
38. Hernandez EM, Bell R (2025) Much ado about nothing: Unmotivating gender identity. Ergo: Open Access J Philos 12:1313–1340
39. Ho F, Mussap A (2019) The gender identity scale: Adapting the gender unicorn to measure gender identity. Psychol Sex Orientat Gend Divers 6:217–231. https://doi.org/10.1037/sgd0000322

40. Hyde JS, Bigler RS, Joel D, Tate CC, van Anders SM (2019) The future of sex and gender in psychology: Five challenges to the gender binary. Am Psychol 74:171–193. https://doi.org/10.1037/amp0000307
41. Jarvis E (2022) Men and Women in everyday English. J Controversial Ideas 2:5. https://doi.org/10.35995/jci02010005
42. Jeffreys S (2014) Gender hurts: A feminist analysis of the politics of transgenderism. Routledge
43. Jenkins K (2018) Toward an account of gender identity. Ergo: Open Access J Philos 5:713–744. https://doi.org/10.3998/ergo.12405314.0005.027
44. Jenkins R (2014) Social identity, fourth edition. Routledge
45. Joel D, Tarrasch R, Berman Z, Mukamel M, Ziv E (2014) Queering gender: Studying gender identity in 'normative' individuals. Psychol Sexuality 5:291–321. https://doi.org/10.1080/19419899.2013.830640
46. Lahtinen O (2024) Construction and validation of a scale for assessing critical social justice attitudes. Scand J Psychol 65:693–705
47. Landén M (2026) Sex, gender and gender identity: A case for conceptual clarity. *Acta Paediatrica*, (in press). https://doi.org/10.1111/apa.70686
48. Lindqvist A, Sendén MG, Renström EA (2021) What is gender, anyway: A review of the options for operationalising gender. Psychol Sexuality 12:332–344. https://doi.org/10.1080/19419899.2020.1729844
49. Maya Forstater v CGD Europe and Others, UKEAT/0105/20/JOJ (2021) Employment Appeal Tribunal judgment, 10 June 2021. https://assets.publishing.service.gov.uk/media/60c1cce1d3bf7f4bd9814e39/Maya_Forstater_v_CGD_Europe_and_others_UKEAT0105_20_JOJ.pdf
50. McDermott ML (2016) The androgynous, undifferentiated, masculine, and feminine: A categorical analysis of gendered personality effects. In M.L.McDermott, Masculinity, femininity, and American political behavior. Oxford University Press, pp 111–131. https://doi.org/10.1093/acprof:oso/9780190462802.003.0005
51. McGuire JK, Beek TF, Catalpa JM, Steensma TD (2019) The Genderqueer Identity (GQI) Scale: Measurement and validation of four distinct subscales with trans and LGBQ clinical and community samples in two countries. Int J Transgender Health 20:289–304. https://doi.org/10.1080/15532739.2018.1460735
52. McKitrick J (2015) A dispositional account of gender. Philos Stud 172:2575–2589. https://doi.org/10.1007/s11098-014-0425-6
53. Morales-Botello M-L, Betancort M, Pérez-Chacón M, Rodríguez-Jiménez R-M, Chacón A (2025) Sociodemographic markers of high Sensory Processing Sensitivity: A descriptive study. Front Psychol 16:1617089. https://doi.org/10.3389/fpsyg.2025.1617089
54. Norton AT, Herek GM (2013) Heterosexuals' attitudes toward transgender people: Findings from a national probability sample of U.S. adults. Sex Roles 68:738–753. https://doi.org/10.1007/s11199-011-0110-6
55. Peer E, Rothschild D, Gordon A, Evernden Z, Damer E (2022) Data quality of platforms and panels for online behavioral research. Behav Res Methods 54:1643–1662. https://doi.org/10.3758/s13428-021-01694-3
56. Pekrun R (2023) Jingle-Jangle fallacies in motivation science: Toward a definition of core motivation. In M. Bong, J. Reeve, & S.-i. Kim (Eds.), *Motivation science: Controversies and insights*(pp. 52–58). Oxford Academic. https://doi.org/10.1093/oso/9780197662359.003.0009
57. Pho AT, Bates N, Snow A, Zhang A, Logan R, Dastur Z, Lubensky ME, Flentje A, Lunn MR, Obedin-Maliver J (2023) Asking sexual orientation and gender identity on health surveys: Findings from cognitive interviews in the United States across sexual orientations and genders. SSM - Qualitative Res Health 4:100344. https://doi.org/10.1016/j.ssmqr.2023.100344
58. Pratt S, Jones PJ, Bellet BW, McNally RJ, Gray K (2026) The words can harm scale: Measuring beliefs about harmful speech. Pers Indiv Differ 257:113785. https://doi.org/10.1016/j.paid.2026.113785
59. Rad MS, Shackleford C, Lee KA, Jassin K, Ginges J (2019) Folk theories of gender and anti-transgender attitudes: Gender differences and policy preferences. PLoS ONE 14:e0226967. https://doi.org/10.1371/journal.pone.0226967
60. Romero A, Blanch A, Chopik WJ (2026) Male and female empathy across 24 countries and 60 latitudinal degrees. Pers Indiv Differ 251:113596. https://doi.org/10.1016/j.paid.2025.113596
61. Schmitt DP, Realo A, Voracek M, Allik J (2008) Why can't a man be more like a woman? Sex differences in Big Five personality traits across 55 cultures. J Personal Soc Psychol 94:168–182. https://doi.org/10.1037/0022-3514.94.1.168
62. Schudson ZC, Beischel WJ, van Anders SM (2019) Individual variation in gender/sex category definitions. Psychol Sex Orientat Gend Divers 6:448–460. https://doi.org/10.1037/sgd0000346
63. Stock K (2021) Material girls: Why reality matters for feminism. Fleet
64. Sullivan A (2025) Independent review of data, statistics and research on sex and gender. UK Government report, Department for Science, Innovation and Technology. https://www.gov.uk/government/publications/independent-review-of-data-statistics-and-research-on-sex-and-gender
65. Sullivan A (2026) Sex, lies and statistics: Why we need evidence-based policy on sex and gender. Polity
66. Therapist.com (2025) Gender identity and mental health. https://therapist.com/identity/gender-identity/. Updated 18th February 2025. Accessed 24th March 2026
67. Todd S (2024) Sex and gender in second-wave feminism. In: Sullivan A, Todd S (eds) Sex and gender – A contemporary reader. Routledge, pp 86–103
68. Turban J (2024) *Free to be: Understanding kids & gender identity*. Atria
69. Turner KL, Brown CS (2007) The centrality of gender and ethnic identities across individuals and contexts. Soc Dev 16:700–719. https://doi.org/10.1111/j.1467-9507.2007.00403.x

70. Westra E (2023) Symbolic belief in social cognition. Philosophical Perspect 37:388–408. https://doi.org/10.1111/phpe.12196
71. Winer C (2025) Does everyone have a gender? Compulsory gender, gender detachment, and asexuality. Socius 11:1–17. https://doi.org/10.1177/23780231251339382
72. Wood W, Eagly AH (2015) Two traditions of research on gender identity. Sex Roles 73:461–473. https://doi.org/10.1007/s11199-015-0480-2
73. Zucker KJ, Bradley SJ, Sullivan CB, Kuksis M, Birkenfeld-Adams A, Mitchell JN (1993) A gender identity interview for children. J Pers Assess 61:443–456. https://doi.org/10.1207/s15327752jpa6103_2
74. Zucker KJ, Mitchell JN, Bradley SJ, Tkachuk J, Cantor JM, Allin SM (2006) The recalled childhood gender identity/gender role questionnaire: Psychometric properties. Sex Roles 54:469–483. https://doi.org/10.1007/s11199-006-9019-x

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SupplementaryMaterialGenderidentitypaper.docx