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Tools of the Trade: A Guide to Sociodemographic Reporting for Researchers, Reviewers, and Editors

Leher Singh[a], Mihaela Barokova[b], Marina Bazhydai[c], Heidi A. Baumgartner[d], Laura Franchin[e], Jessica E. Kosie[f], Casey Lew-Williams[g], Paul Okyere Omane[h,i], Tilman Reinelt[j], Tobias Schuwerk[k], Mark Sheskin[l], Melanie Soderstrom[m], Yang Wu[n], and Michael C. Frank[d]

[a]University of Maryland, Baltimore, MD, USA; [b]New Bulgarian University, Sofia, Bulgaria; [c]Lancaster University, Lancaster, UK; [d]Stanford University, Stanford, CA, USA; [e]University of Trento, Trento, Italy; [f]Arizona State University, Tempe, AZ, USA; [g]Princeton University, Princeton, NJ, USA; [h]University of Potsdam, Potsdam, Germany; [i]Macquarie University, Sydney, Australia; [j]University Hospital Zurich, University of Zurich, Zurich, Switzerland; [k]Ludwig-Maximilians-Universität München, Munich, Germany; [l]Minerva University, San Francisco, CA, USA; [m]University of Manitoba, Winnipeg, Canada; [n]University of Toronto Scarborough, Toronto, ON, Canada

ABSTRACT
In recent years, psychological researchers have been heavily criticized for generalizing broadly from narrow samples, a concern that intersects with questions about the validity, reproducibility, replicability, and generalizability of the psychological literature. One issue is the limited reporting of participants' identities, backgrounds, and lived experiences. To address this issue, several journals have begun to require greater reporting of participants' sociodemographic information. In this article, we address both challenges and considerations with respect to sociodemographic reporting for researchers, reviewers, and journal editors. We provide guidance for recording, evaluating, protecting, and interpreting sociodemographic data.

Every aspect of individual children's trajectories is shaped by their environments. Even behaviors commonly perceived to be universal – newborn reflexes, how fast the heart pumps blood, and how infants learn to walk and talk – vary across populations and environments (e.g., Bakr & Habib, 2005; Bhatia et al., 1979; Boyce et al., 2021; Frank et al., 2021; Tamis LeMonda, 2023). As a result, it is critical to integrate children's identities, lived experiences, and information about their social ecologies into developmental research (Cole & Packer, 2011). In this paper, we provide actionable guidance to authors, reviewers, and editors in the collection and reporting of sociodemographic information with special attention to how demographic markers map to target constructs in particular settings.

To provide a brief roadmap of the paper, we begin by discussing the need for greater attention to demographic variables in the study of early development. We cite recent meta-analyses that demonstrate very limited attention to provision of demographic data in research reports. We present a framework developed by the ManyBabies consortium (ManyBabies Demographics) for standardizing demographic data collection. We then present considerations for authors, reviewers, and editors in developing, reporting, and

CONTACT Leher Singh lehers1@umbc.edu Department of Psychology, University of Maryland, 1000 Hilltop Circle, Baltimore, MD 21250, USA

evaluating demographic information, providing tangible and actionable strategies. Finally, we provide an acknowledgment of our own positionality in developing a framework for demographic reporting.

Why attend to demographic variation?

Understanding the role of context in development has major epistemic implications for our field. Developmental scientists have called attention to credibility challenges to our field in terms of its validity, generalizability, and replicability (Gennetian et al., 2020). In particular, the concentration of psychological research in specific world regions – inhabited by a stark minority of the global population – has raised fundamental questions about the representativeness and generalizability of the empirical record (Henrich et al., 2010). This is compounded by the fact that claims in our research record tend to be expressed through generic language, which can overstate their generalizability (DeJesus et al., 2019). To address these key issues, there have been resounding calls for greater sociocultural diversity and greater sociodemographic reporting in research reports (Arnett, 2008; Cole & Bruner, 1971; Moriguchi, 2021; Nielsen et al., 2017; Rogoff et al., 2018, Singh, Cristia et al., 2023; Wang, 2018). To respond to these calls, it is imperative to accurately define sociocultural representation within our studies via the normalization of demographic reporting practices.

In spite of widespread recognition of the need for sociodemographic reporting, recent analyses of developmental publications revealed that authors often do not identify sociodemographic characteristics of participants (Singh & Rajendra, 2024; Singh, Cristia, et al., 2023), including community of descent (e.g., race, ethnicity, tribal affiliation, membership in an ethnolinguistic group; Singh, Cristia, et al., 2023), socioeconomic status (Singh & Rajendra, 2024), and sites of testing (Singh, Cristia, et al., 2023). Omission of sociodemographic details is at odds with the need for greater integration of information about children's environments into our scientific narrative (Rogoff et al., 2018). It is also at odds with the need for greater diversity throughout our research ecosystem. For example, there have been discipline-wide calls for greater participant diversity (Henrich et al., 2010), a call for greater diversification of the editorial workforce (Roberts et al., 2020), and a growing emphasis on the need for providing constraints on generality and generalizability in empirical reports (Roisman, 2021). Without a clear understanding of who participates in developmental research and where it is conducted, it is challenging to determine where representational gaps lie and to identify the boundary conditions of what we know about human development.

Given increasing awareness of the importance of sociodemographic data, the high rate of non-reporting may be due to genuine challenges in obtaining and/or reporting these data. In particular, authors may not know what to report and editors may not be sure as to what to request. In addressing gaps in sociodemographic reporting, developmental journals currently provide varying degrees of guidance and specificity to authors. For example, *Child Development* requires inclusion of "the theoretically relevant characteristics of the particular sample studied, for example, but not limited to: race/ethnicity, socioeconomic status, language, sexual orientation, gender identity (inclusive of non-binary options), religion, generation, family characteristics; and the place(s) from which that sample was drawn, including country, region, city, neighborhood, school, etc. and all other context variables that are relevant to the focus of the publication." *Developmental Psychology* requirements state, "Major demographic characteristics should be reported, such as sex, age, socioeconomic status, race/ethnicity, and, when possible and appropriate, disability status and sexual orientation." *Developmental Science* requires the provision of ethnicity/race and sex/gender. The *Journal of Cognition and Development* states in decision letters, "Note that we are asking authors of manuscripts to specify in their abstracts and judiciously throughout their manuscript some details of who they are referring to when they make claims about 'children.' At a minimum, we think it is important to include information about where data were collected, including in the abstract."

These well-intentioned guidelines are important but also potentially challenging to implement. First, a focus on fixed and pre-specified sociodemographic variables is misaligned with the diversity of ways in which participants are identified by themselves and by others. For example, most of the journals mentioned place an emphasis on race/ethnicity. While these sociodemographic variables may be a meaningful marker for ancestry, community of descent, and/or lived experience – and their interaction – in US samples, they are often not the most appropriate index of community of descent in non-US settings. Further, the same sociodemographic data are not equally available across settings. For example, it is not easy to collect race/ethnicity data in specific settings, such as in France, the Netherlands, or Germany, due to legal restrictions, in which case these data are often omitted rather than substituted for more practicable markers. In some settings, migration history, membership within a tribe, caste, and/or ethnolinguistic group, or an intersection of these identities may be more fitting indicators of community of descent than race/ethnicity. This example illustrates the natural tension that exists in selecting sociodemographic variables. On one hand, it is convenient to standardize expectations across diverse settings. On the other hand, there is real world variation in how demographic information is meaningfully operationalized within and across settings, introducing the need for flexibility.

A second challenge relates to determination of compliance with journal requirements to report sociodemographic data. Although imposing requirements is associated with an increase in sociodemographic reporting (Singh, Cristia, et al., 2023), checking that requirements are met in a manner that is culturally and contextually appropriate is no small feat. For example, categories that are appropriate for a particular study may not be familiar to reviewers and editors. Verification and evaluation of sociodemographic data requires contextual expertise and cultural literacy on the part of reviewer and editors. It also requires reviewers and editors to evaluate these data in relation to approaches and methodologies used to collect the data. Requirements for sociodemographic data provision also add a new tier of research evaluation to which researchers, reviewers, and editors may be uninitiated. In this regard, normalizing demographic data provision requires changes in researcher practices and in the peer review process.

Our goal and approach

In this paper, we focus on standardizing and normalizing collection of demographic information and propose processes that would incentivize reporting this information. Our goal is not to prescribe the use of demographic information in analytic plans. To do so would be to circumvent the complexities intrinsic to sociodemographic variation. For example, demographic variation that is deemed relevant to the target questions, methods, and analysis tools requires researchers to set up their studies in a manner that permits analysis of demographic information. In large part, studies with young children often contain small sample sizes and often query effects where reliability may be undetermined. Indiscriminately weaving demographic information into analyses may lead to a "fishing expedition" where true effects are missed, and false positives emerge, potentially leading to ethical concerns regarding the reporting of spurious effects of sociodemographic categories. We posit the need for a more measured and incremental approach where sample characteristics are defined and reported in individual studies and then, over time, evidence about variation and consistency across sociodemographic groups emerges across samples. This process promises a foundation over the long term to determine which demographic variables are relevant to the constructs being studied and invites an evidence-aligned approach to future analyses of demographic variation and its associations with behavior.

In constructing an approach to normalize sociodemographic reporting, we build on a previous paper that provides a framework for collection of sociodemographic data across diverse contexts (Singh, Barokova, et al., 2024). In this paper, the ManyBabies Consortium convened a diverse group of authors to converge on the "lowest common denominator" of sociodemographic information – the minimum expected sample description for studies of young children. The result was a multi-tiered, culturally adaptable framework for sociodemographic reporting recognizing that there is no universal template that would fit all contexts. The framework comprises six key sociodemographic categories – biographical information, gestational status, health status, community of descent, caregiving environment, and socioeconomic status – and a set of sub-constructs associated with each of these (Table 1). These constructs must be instantiated through specific questions, however, and these questions should differ from context to context. Thus, the ManyBabies Demographics framework provides guidance for researchers to develop questions reflecting these constructs in a manner that befits the local context. Central to this framework is the provision of a community-based collaborative tool: researchers who develop and adapt demographic surveys are encouraged to share them in an open-source repository (https://osf.io/nqc92). In developing this framework, we carefully considered the burden placed upon participants of providing demographic information. In our original paper, we have therefore provided both long forms and short forms, the latter being more expedient for cases where time is limited.

The current paper begins where the previous paper ends. Our goal in this paper is translational: we seek to map this framework onto tangible practices that can be effectively implemented by authors, reviewers, and journal editors. A summary of these recommended best practices is shown in Table 2. Our hope is to provide actionable guidance for each of these roles to improve sociodemographic reporting standards in developmental science.

Considerations for researchers

Respect participants' self-identification with sociodemographic categories in consultation with local communities

A foremost priority is to align demographic data collection with how individuals identify themselves in consultation with the communities where research takes place (see Rowley & Camacho, 2015). Participants define themselves and their communities in particular ways; imposing categories or markers on participants disregards the complexity of identity

Table 1. A framework for basic demographic reporting.

Categories	Constructs	Example context-specific items	Example context-specific response options
Biographical info	Child's age	*Child's date of birth & date of testing*	*YYYY/MM/DD (converted to age before reporting)*
	Child's sex	*What is your child's sex?*	☐ *Female* ☐ *Male* ☐ *Other*
	Child's place of birth	*Where was your child born?*	*City, country*
	Child's place of residence	*Where does your child live?*	*City, country*
	Caregiver(s)'s place of birth	*Where was/were parent1/parent2/ caregiver(s) born?*	*City, country*
Gestational status	Gestational age (weeks)	*Was child born early?*	● *yes (before 37 weeks)* ● *no (after 37 weeks)*
	Birth weight	*How much did your child weigh at birth?*	*Birth weight (grams, lbs/oz)*
Health status	Medical diagnosis & concerns	*Does child have any current medical issues and/or diagnosed conditions?*	*If yes, please describe.*
	Sensory issues	*Does child have any vision or hearing issues (including frequent ear infections)?*	*If yes, please describe.*
Community of descent	Child's race	*What racial group(s) does child belong to?*	*Context-specific options (e.g., census categories)*
	Child's ethnicity	*What ethnic group(s) does child belong to?*	*Context-specific options, if applicable*
	Child's tribal affiliation	*What is your family's tribal affiliation?*	*Context-specific options, if applicable*
	Child's regional community of origin	*From which state/region does your family originate?*	*Context-specific options (e.g., names of regional communities)*
	Child's ethnolinguistic membership	*What language(s) is/are spoken by your community?*	*Context-specific options (names of predominant local languages)*
Caregiving environment	Day-to-day caregivers	*Who takes care of the child from day to day?*	*Relation to or role in child's life*
	Time spent with child	*On average, how much time does that caregiver spend with your child?*	*Hours/day, days/week*
	Language(s) spoken	*What language(s) does your child hear with that caregiver?*	*Name of language(s), % of total language input*
	Caregiver gender	*What is that caregiver's gender?*	*Context-specific options (including non-binary categories)*
Socio-economic status (SES)	Household income	*What is your household's annual income?*	*Bracketed income categories or free response options in local currency*
	Primary caregivers' education	*What is mother/father's highest level of education?*	*Context-specific options, e.g., OECD options:* ☐ *No formal education* ☐ *Primary (# of grades)* ☐ *Secondary (# of grades)* ☐ *Professional technical edu* ☐ *Secondary specialized edu* ☐ *Higher education* ☐ *Post-graduate education*
	Household size	*How many people live in your home?*	*Adults: ____ Children: ____*

A Framework for Basic Demographic Reporting .

A summary of categories and constructs is presented with examples of individual items that could be used to query each construct. Example items and response options are for illustrative purposes and will necessarily vary by context. Not all constructs/items will be appropriate/applicable for all contexts. Reproduced from Singh, Barokova, et al. (2024).

formation in relation to lived experiences and individuals' self-perceptions of those experiences. Furthermore, in some instances, sociodemographic categories imposed from those outside a community can reflect colonial and/or hegemonic legacies. In addition, sociodemographic identity markers may be fluid: geopolitical events and shifting power structures may modify the interplay between participants and their social positions in a manner

Table 2. Summary of our recommendations for researchers, reviewers, and editors.

Considerations for researchers	• Respect participants' self-identification with sociodemographic categories in consultation with local communities • Develop and motivate contextually-appropriate questions for sociodemographic data collection • Contribute additional sample description relevant to theoretical questions • Share sociodemographic data in ways that are consistent with de-identification standards
Considerations for reviewers	• Ensure sociodemographic information is reported consistently and appropriately • Evaluate sociodemographic markers as a component of scientific review • Evaluate study conclusions based on sampling methods and sociodemographic representation • Evaluate the strength of inferences from sample to population
Considerations for editors	• Develop and disseminate robust policies for sociodemographic data reporting • Develop editorial guidance for evaluating sociodemographic data provision • Maintain vigilance over reviewer biases that may disadvantage studies from under-sampled contexts based on sociodemographic data provision • Develop implementation checks to ensure that sociodemographic data are reported and clearly motivated • Develop editorial policies that incentivize constraints on generalizability based on sample characteristics

that impacts behavior and experience, altering self-classifications. In addition, the same classification can have different consequences depending on context. For example, cisgender women may be minoritized in some contexts on account of being women, but may be majoritized in the same or other contexts on account of being cisgender.

Thus, in creating context-specific sociodemographic forms, researchers should carefully examine how populations define themselves in relation to the context of a study. Local community involvement in study design as a whole, including how to structure the process of sociodemographic data collection, could help in the process of identifying the most appropriate demographic questions and responses items for the specific context. Moreover, particular demographic terms assume different meanings across contexts, requiring consideration of what a particular term means in a particular context. One example of this is illustrated by the use of the term "minoritized" in place of "minority." Serving as the statistical minority within a population does not equate to being minoritized. For example, a minority of the population of South Africa is White. However, this small minority exerts much greater societal power and historical control over the country than the majority Black population. For these reasons, practices that carefully reflect participants' own experiences – and in doing so, those that capitalize on local expertise – are recommended. In fulfilling this goal, securing expertise within the sociocultural environment that is being described is crucial.

Develop and motivate contextually-appropriate questions for sociodemographic data collection

While sociodemographic reporting is crucial, one size does not fit all. Cultural contexts play a pivotal role in shaping individuals' identities and in developing their perceptions of the sociodemographic categories to which they believe they belong. Therefore, any attempt to incorporate sociodemographic reporting must consider these factors, ensuring that the process is sensitive to and respectful of the diversity of ways in which people identify themselves.

As noted above, one of the examples of the impact of cultural context on sociodemographic reporting relates to race/ethnicity. We provide an example of how this information may not be well suited to some contexts to capture ancestry. Unlike the United States, where race and ethnicity encompass a wide range of backgrounds and experiences and shape many aspects of children's development (García-Coll et al., 1996), China's demographic landscape is often considered monoracial, but multi-ethnic. Using standard US-based reporting criteria, the majority of the population would be categorized as "Asian," a term that aggregates over significant ancestral variation. While Chinese people generally identify with this broad racial category, most live within a monoracial cultural context throughout their lives, and their specific ethnicity, such as Han, Miao, Hui, or Dai, may serve as more salient and relevant cues to community of descent. There are a total of 56 ethnic groups in China, all of which are different from the major ethnic groups conventionalized in the United States. Therefore, asking Chinese participants to complete the same race/ethnicity questionnaire as Americans (i.e., to self-identify as "Asian") would not clearly capture the intricacies of their identity. In spite of this fact, the category "Asian" is frequently used to describe individuals of Asian origin both in Asia and within the vast Asian diaspora (see Singh, Cristia, et al., 2023). In this way, we encourage flexibility in how authors provide sociodemographic markers and clear justification for how such markers and their corresponding variables are appropriate in context.

Contribute additional sample description relevant to theoretical questions

In general, prescriptive categories of information may miss the mark in presuming that particular sources of information are relevant to all research questions. Although we advocate for provision of basic sociodemographic information in our prior paper (Singh, Barokova, et al., 2024), researchers may wish to supply additional data depending on what factors prove relevant to the research question. For example, in a study involving video presentation of stimuli across disparate settings (or even within settings), it may be advisable to collect information about experience with video screens. In this sense, providing information that may predict variance in behavioral outcomes are important additional considerations in addition to basic sociodemographic variables. As noted above, wholesale inclusion of demographic variables into analyses risks becoming a "fishing expedition." Researchers therefore need to determine which demographic variables are likely to predict variation in behavioral outcomes. In large part, our knowledge of which demographic variables relate to target constructs is underspecified because demographic data is often not reported nor analyzed. As the field moves toward greater provision of demographic data, we hope that this engenders deeper knowledge of when to enter demographic variables into analytic plans.

Share sociodemographic data in ways that are consistent with de-identification standards

There is mounting impetus from scientists, journals, funders, and professional societies to promote data sharing (e.g., Brewer et al., 2010; Koslow, 2000; Lindsay, 2017; Meyer, 2018; Nelson, 2009). Facilitating broad access to data has the potential to optimize the use of existing information and increase the chances of data merging and transformation. Additionally, open data have the potential to prevent fraud and detect errors by promoting transparency through for example replication, refutation, and refinement of scientific research (Ross et al., 2018). However, scientific interests must be balanced against the protection of privacy, especially when vulnerable individuals, such as children, are involved. For instance, the EU General Data Protection Regulation (2016)/679 (GDPR) strengthened the rights of individuals with respect to their personal data and emphasized the principle of informational self-determination by increasing transparency requirements for data collection practices.

Even when they do not contain primary identifiers such as names or addresses, datasets with rich sociodemographic information may still contain “quasi-identifiers” that – individually or in combination – can be used to deduce the identity of a person. Typical examples of such secondary identifiers are age, gender, socioeconomic status, and social origin, but also birth weight, gestational age, or health issues. Especially in small communities, these identifiers may be enough for knowledgeable or resourced individuals to re-identify one or more members of a dataset. In addition, advances in AI and related tracking technologies means that data that are de-identified in the present may be re-identifiable in the future. The possibility of re-identification from sociodemographic data requires researchers to apply rigorous ethical standards, and to ensure the anonymity and confidentiality of participants.

We begin this discussion assuming that a dataset has already been stripped of primary identifiers, but that researchers still hope to share sociodemographic data. Among the most common techniques for handling pseudo-identifiers are data suppression and generalization (Walsh et al., 2018). Data suppression – removing values or records from the dataset – can be used when individual cases have a high risk of being easily re-identified (e.g., if there is only one or two children from a certain ethnic background in a dataset). However, suppression can result in considerable loss of data and thus hamper the analysis of certain research questions. Data generalization alters data resolution in order to mask rare cases, and thus reduces the risk of re-identification. Typical examples of generalizing data include grouping specific ethnic backgrounds into larger ethnic groups (e.g., referring to participants from Iran and Jordan as participants from the Middle East), stating mothers’ education in terms of tertiary or non-tertiary education rather than the full range of possible educational qualifications, or reporting a child’s age in months or years rather than days.

Various measures have been developed to check whether a data set (after applying such techniques) can be regarded as truly anonymized. For instance, *k*-anonymity describes that each case in the dataset is identical to at least *k*-1 other cases with respect to potentially identifying variables. In other words, the probability of identifying a single participant is at maximum 1/k (El Emam & Dankar, 2008; Salas & Domingo-Ferrer, 2018). Typically, researchers ensure that there are at least five cases with identical values (El Emam & Dankar, 2008), but stricter values might be indicated if serious consequences of identification are assumed. Recently, several tools have been developed to help researchers ensure the anonymity of their datasets, including a Python library called pyCANON (Sáinz-Pardo Díaz & López García, 2022), a free data anonymization tool developed as part of the EU-funded project OpenAIRE called Amnesia (https://amnesia.openaire.eu), and an open source algorithm for assessing re-identification risk and applying appropriate anonymization techniques called MinBlur (https://responsible-data-sharing.shinyapps.io/MinBlur; Morehouse et al., 2023).

However, especially with small sample sizes, it might be impossible to create a truly anonymous dataset. In such cases, sociodemographic information can still be shared as metadata. Instead of publishing sociodemographic information for each participant, researchers can opt to share sociodemographic information on the whole dataset (e.g., distributions of age or gender, frequencies of ethnic backgrounds or the percentage of preterm-born children). In this way, sociodemographic information can still be used to compare studies, yet the data are de-linked from behavioral indicators. Likewise, sociodemographic variables can also be used as predictors in meta-regressions. Organizing a robust and collective procedure for de-identifying sociodemographic data to be shared can protect participants while also helping scientists by ensuring that they are acting ethically and are legally compliant with their participants' personal data (Viberg Johansson et al., 2022).

Considerations for reviewers

Ensure sociodemographic information is reported consistently and appropriately

Reviewers should be aware that there is inconsistency in requests for sociodemographic details across studies that often conflicts with broadening representation. In some cases, with respect to under-represented settings, reviewers may ask for substantially more detail than is typical (including, for example, information about school attendance, dwellings, water availability, healthcare, and the "lived experience of children;" Draper et al., 2023). This requirement can sideline non-Western researchers: past studies demonstrate that including the country in a study's title can impact visibility of the work and is often associated with fewer citations for studies conducted in under-represented regions (Abramo et al., 2016; Draper et al., 2023; Kahalon et al., 2022), perhaps because the results are perceived as less generalizable. Additionally, studies from the United States are less likely to include the location of testing in the title than those from outside the United States, erroneously implying that culture and context are more relevant to studies from non-U.S. populations (Cheon et al., 2020). Similar phenomena have been documented around the study of minoritized populations within countries (Causadias et al., 2018; Roberts & Mortenson, 2023). To the extent that information about sample characteristics is expected in the title and/or abstract, or information about daily life in the description of participants, this standard should be applied equally across all submitted articles, regardless of the participant group.

Furthermore, researchers studying non-Western cultures may face additional requirements for justifying the reliability and generalizability of their work. This is especially true when findings from non-Western cultures contradict or are inconsistent with results of studies in Western cultures. Researchers studying non-Western cultures also frequently report instances in which they have been told that their research is not appropriate for general journals and that they should submit the work to specialized, international journals instead (e.g., Draper et al., 2023), disregarding the fact that the phrase "International" as used to capture regions outside of the U.S. refers to 96% of the world. Consistent expectations of authors from reviewers that align with journal guidance (to be discussed under "Considerations for Editors") is critical to equitable reporting of sociodemographic data.

Evaluate sociodemographic markers as a component of scientific review

Detailed sociodemographic reporting is important in the peer review process for a range of reasons. First, information about the participant sample helps reviewers evaluate the generalizability of findings and the extent to which claims are interpreted beyond the data from the sample. Developmental psychologists have traditionally attempted to explain human nature and to define universal principles of development, but the current lack of data on sociodemographic differences across communities and cultures calls this scientific mission into question. For example, should findings from a sample of infants from France be viewed as applicable to infants in Guatemala, and *vice versa*? Authors have a responsibility to strike an appropriate balance between narrow and broad generalization, and reviewers have a responsibility to make sure the writing is appropriately balanced to convey responsible generalizability.

Second, sociodemographic information can help reviewers in considering ethical issues in research, particularly for samples that draw from minoritized or underrepresented communities. Did the researchers carry out their work in a way that upheld ethical considerations with the population of interest and ensured that they were treated fairly? There are myriad examples in the field of psychology of transferring methods and instruments to under-represented populations that are ill-suited beyond the context within which they were developed, normed, and validated – often by researchers who do not derive from or live among the population they are studying. This practice has occasionally led to scientifically and ethically questionable practices, such as deficit-centered accounts of human behavior, inappropriately applied to minoritized and under-represented populations (Gutiérrez & Rogoff, 2003; Kline et al., 2018; Medin et al., 2010).

Third, sociodemographic reporting helps reviewers understand how the characteristics of the sample may have shaped the study design and the data, such as the question of how data align with previous research with the same or similar populations. For example, if a study is about bilingualism in young children, do the authors treat "bilingualism" as a monolithic category with the likely false expectation that findings would generalize across all bilingual populations? Or, do they define, disaggregate, and operationalize "bilingualism" in a way that matches their goals and claims? Are the research tools (e.g., questionnaires or experimental paradigms) imported from research on monolinguals or developed specifically for the bilingual population of interest? Sociodemographic reporting can also help to identify hidden moderators (i.e., reporting gaps), such as information about participants' socioeconomic status, which influences a broad swath of developmental outcomes but is often not reported (Singh & Rajendra, 2024). While it is often challenging to recruit the perfect sample for any study, reviewers should nonetheless ensure that authors' inferences and conclusions are stated with careful attention to sample characteristics and limitations.

Evaluate study conclusions based on sampling methods and sociodemographic representation

Data collected across multiple cultural contexts can be used to draw different types of conclusions. Specifically, in this section, we will highlight opposite ends of a spectrum, in which cross-cultural data might be used (1) to conclude that there is no cross-cultural variation and that a conclusion likely does generalize to (most) humans, or (2) to conclude that there is cross-cultural variation. These are two polarities of a spectrum that likely represent a false dichotomy and are certainly not positions that can be taken based on single papers. Reviewers and editors are in a strong position to discourage unfounded and absolutist universalist or variationist accounts of behavior based on single studies (see DeJesus et al., 2023). Preferable to these extremes are careful statements about who has been studied, how broadly results might generalize, what sources of systematic differences in culture might lead to some predictable differences in psychological outcomes, and how confident we should be in all of these conclusions based on the available evidence.

There are much deeper reasons to sample diversely beyond adjudicating claims of universality versus variation. For example, diversifying the research enterprise is essential for a more generalizable and representative science (e.g., Blasi et al., 2022; Henrich et al., 2010). This in turn may increase public trust in our science by reinforcing notions that psychological science is not just "for" and "about" the people historically included in psychological research but is "for" and "about" humanity at large. With the note in place that there are many good reasons to do cross-cultural research beyond those that this section highlights, we return to the core idea of this section: reviewers should encourage precision in authors' interpretation around issues of generalizability. When researchers use cross-cultural data as evidence that a conclusion does robustly generalize across humanity, it can be useful to discuss the strength of the evidence and how strongly the conclusion should be held. Although radical skepticism may be overly cautious ("we have no idea if this generalizes until we test it further!"), it can be useful to make claims relative to the cumulative evidence in the field. To make these evaluations with more precision, one option is to operationalize "cultural distance" on multiple dimensions, depending on the topic being investigated (e.g., Muthukrishna et al., 2020). Other options are to opt for parsimonious reasoning, starting with the presumption of low generalizability and scaling up in a manner commensurate with the cumulative evidence basis within a field (Singh, Cristia, et al., 2023).

Evaluate the strength of inferences from sample to population

Care should also be taken when generalizing from samples to populations. An unintended casualty of raising concerns about "WEIRD (Western, Educated, Industrialized, Rich, and Democratic) psychology" (Henrich et al., 2010) is the subsequent tendency to classify settings as WEIRD or non-WEIRD. This classification aggregates over large and diverse swaths of the human population. In particular, WEIRD/non-WEIRD comparisons often overestimate cross-region variation and underestimate within-region variation. Thus, while collecting data across multiple countries is a worthwhile mission, caution is also important about overgeneralizing from a small number of samples to a broad population. In particular, bisecting the entire world into WEIRD and non-WEIRD segments when significant variation exists within and between these regions can lead to spurious reasoning (Singh, Killen, et al., 2023), which should be disincentivized during the review process.

Considerations for editors

Develop and disseminate robust policies for sociodemographic data reporting

The role of journal editors is to provide guidelines to ensure that the principles described above are met during the review process. This includes ensuring that manuscripts provide enough detail regarding the sociodemographic information of samples so that issues of scientific validity and generalizability of findings can be addressed. As is clear from the above discussion, it is not straightforward to set maximalist expectations for compliance with respect to sociodemographic reporting that will be appropriate for all cultural and ethnographic contexts, and this should probably not be attempted. Sample and population diversity are multiaxial, and as described above, appropriate dimensions for sociodemographic variation vary across samples, populations, and settings. At the same time, clear policies can play an important role in setting the expectations for both authors and reviewers to ensure that these larger goals are met.

In formulating policies, editors should be aware that strict policies regarding sample types, sample sizes, and/or sample reporting likely will have negative impacts on the diversity of populations represented by manuscripts that comply with these policies. It is often much more challenging to comply with these policies for studies involving underrepresented populations, and as such, policies of this type may serve to reduce, rather than expand, the representativeness of research in the journal. Instead, policies that articulate clear aims and values, but allow for flexibility based on context, and allowing authors to describe and justify their choices in selection and reporting with a particular focus on establishing that sociodemographic reporting is appropriate *in situ*, will likely better serve our ultimate goals.

Develop editorial guidance for evaluating sociodemographic data provision

In general, editorial board members and other reviewers may be more attuned to evaluating traditional components of manuscripts given the relative recency with which sociodemographic requirements have been introduced. Diversification of editorial boards and reviewer pools would increase capacity and expertise to evaluate sociodemographic data. In addition, in order to appropriately evaluate the sufficiency of sociodemographic information in submissions, it is important for editors to provide guidance to reviewers and editorial board members for how to evaluate this information. Such guidance should be aimed at introducing consistency across editorial board members and reviewers with respect to the approach taken to evaluate sociodemographic information. We suggest that this guidance focuses on three priorities: appropriateness in context, justification, and care in inference-making. We discuss each in turn.

It can be a challenge for reviewers to know whether specific sociodemographic markers provided are appropriate in context even if they are well versed in the scientific topic of a paper. Understanding contextual factors often requires cultural competence and geographical literacy with populations and experiences represented in a study. One way to approach this is to purposefully strive to seek out reviewers who have both topical and cultural expertise to evaluate a submission and to encourage authors to clearly motivate their use of sociodemographic markers, including describing the involvement of local community members in developing the most appropriate markers. In addition, editorial policies that require careful and thorough justification of sociodemographic markers and assurance of local participation in developing sociodemographic data collection methods would provide greater information to assist in evaluation. Lastly, inference-making, often present in the Discussion section, should be calibrated to the populations sampled, and methods used. Broad conclusions from narrow samples and restrictive methods should be discouraged.

Maintain vigilance over biases that may disadvantage studies from under-sampled contexts based on sociodemographic data provision

Although we strongly support providing sociodemographic information, this same information can sometimes inadvertently sideline or marginalize research on non-Western participants, stemming primarily from a bias for treating Western cultures as a default (Medin et al., 2010; Mendin & Bang, 2014). Researchers often experience difficulty publishing validation studies or adaptations of Western methods, despite the fact that tests developed with Western samples cannot simply be used in their original form across all cultures (e.g., Draper et al., 2023; Karasik & Robinson, 2022; Singh, Cristia, et al., 2023). Draper et al. (2023), for example, describe a review of one such validation effort, which stated: “Though your manuscript has considerable value, its transferability outside of your region is presently not explicated.” Thus, despite the importance of adapting and validating methods for the group being studied, researchers struggle to publish and receive credit for these efforts.

Along similar lines, one member of our author group received the following comment from a reviewer evaluating a study conducted in Singapore in response to the provision of sociodemographic information: “I suggest mentioning somewhere that Singapore’s society is unique … e.g., high population density, very wealthy, highly educated, multiple official languages, subsidized healthcare, low infant mortality, etc. These characteristics along with Singapore’s unique racial composition (Chinese, Malay, Indian) mean that the results of this study might not generalize to other cultures or societies.” This comment is surprising and appears to adopt a US reference frame, given that on many of the listed characteristics, Singapore is in line with other nations when matched for GDP. In several respects, such as subsidized healthcare, the US is an outlier when matched for GDP. Consider if a reviewer had written a similar comment on a study with US children: “I suggest mentioning somewhere that the US is very unique, being largely monolingual, with high overall wealth but high levels of income inequality, a lack of subsidized healthcare, and high infant mortality relative to GDP.”

Although the introduction of reporting requirements are undoubtedly welcome developments for our field, some policies may have unintended consequences that work against the very groups to whom our community of researchers often seeks to grant greater visibility (see Cheon et al., 2020). For example, in a recent study, articles were viewed as more relevant if the country of testing was the United States than if it was another country (Kahalon et al., 2022). Studies that included country information in the title had fewer citations than those that did not include this information, but only if the study was conducted outside of the US, suggesting that editorial guidance to include sociodemographic information in titles may create unintended complications for non-US authors (Kahalon et al., 2022). In addition, sociodemographic information is less likely to be specified in titles of articles testing participants within the United States and other widely represented regions, pointing to variance in provision of this information (Cheon et al., 2020). Therefore, measuring the impact of editorial policies is essential for identifying potential unintended consequences, and editors can then adjust their policies to determine the most effective approaches and practices.

Develop implementation checks to ensure that sociodemographic data are reported and clearly motivated

A critical question is how effective journal policies can be without an effective means of enforcement. An analogous example comes from open data requirements. For example, an analysis of the reproducibility of published findings presented in articles supposedly in compliance with a mandatory open data policy found that only a subset of the analyses was truly reproducible, even with the assistance of the articles' authors (Hardwicke et al., 2018). Relatedly, how to effectively implement and enforce policies regarding sociodemographic reporting is a difficult problem to solve. Authors may need direction to include sufficient information in their manuscript not only regarding the sociodemographic information reported, but also, as appropriate, sufficient information regarding the decision-making of which sociodemographic variables were controlled, and/or collected and reported. Assuming a model where the policies are based on general values rather than specific requirements, editors will necessarily rely more heavily on authors to provide justifications for their decisions and reviewers to assess the scientific merit of the authors' decisions regarding sociodemographic selection and reporting. Journal policies that require reviewers to include a clear and motivated assessment of sociodemographic reporting in their reviews and that require consideration of this information when making editorial decisions on manuscripts are likely to drive new norms in sociodemographic reporting.

Develop editorial policies that incentivize constraints on generalizability based on sample characteristics

Psychological research has traditionally paid too little attention to critical issues of generalizability (Yarkoni, 2022). In developmental psychology, a field that studies development as a dynamic process that is influenced by the environment, a failure to consider environmental factors means a failure to consider core drivers of development (Forbes et al., 2022). Recent research has not only shown that domains of development that have traditionally been viewed as universal, such as motor development or the development of joint attention, differ among populations, but also that these differences can be explained by cultural practices and norms, e.g., in caregiving routines (Adolph et al., 2009; Bard et al., 2021; see also Yanaoka et al., 2022).

Large-scale multi-lab projects are beginning to quantify such sources of variance by running the same single experimental paradigm in many labs around the world, which enables the modeling of the effects of sociodemographic variability (e.g., Frank et al., 2020; Kosie et al., 2024; Lucca et al., 2022; Schuwerk et al., 2021; Visser et al., 2022). The Developing Belief Network, led by Rebekah Richert and Kathleen Corriveau (Richert et al., 2022), provides a similar structure. However, multi-lab projects are not the only way to address the generalizability of a studied phenomenon. If researchers, reviewers, and

Table 3. An annotated excerpt of constraints on generality statement from the discussion section of Thiede et al. (2023).

Component	Text
Introduction to constraints on generality	"It is important to note that the current paradigm was designed for and tested in a particular socio-cultural setting. As such, constraints apply when generalizing these findings to children growing up outside urban middle-class milieus in Germany and other countries of the Global North."
Expectations about generalizability	"We expect our results regarding the empathy task and intervention to generalize to children who have experience with story books, possess such formalized knowledge about emotions as they are felt and verbalized in the current study, and have some experience speaking about their own and others' emotions. Considering that advanced verbal skills are required to answer the question assessing the reasons why they responded with a particular emotion to a story, the current empathy task and intervention may not be suited well to study children's empathy in contexts in which such verbalization of emotions is less common as in urban, middle-class milieus in Germany and the Global North."
Specific cultural background relevant to study interpretation	"The observed differences in the prevalence of polite lie-telling between the current study and previous work (e.g., Warneken & Orlins, 2015) stress the importance of considering cultural peculiarities of the study population before generalizing. Specifically, we expect the pattern of results regarding polite lie-telling and prosocial encouragement to vary between contexts with different politeness norms and preferences for directness vs. indirectness (Giles et al., 2019). German communication is typically rather direct and functional, and honesty is encouraged compared to other Westernized societies (e.g., House, 2005; IES, 2021). . . . "
Final statement of constraints on generality	"Lastly, it is important to note that polite behavior is a verbal and specific form of prosocial behavior due to the conflicting norms of honesty and politeness. Thus, it remains unclear whether participating in the empathy intervention might affect other forms of prosocial behavior. We have no reason to believe that the results depend on other characteristics of the participants, materials, or context (see Simons et al., 2017)."

editors embrace and promote the above recommendations for sociodemographic reporting, this practice can help developmental psychology build stronger theories by better capturing how environmental and cultural contexts shape development.

Systematic sociodemographic reporting constitutes the basis for an evaluation of the constraints of generalizability of an observed finding. Simons et al. (2017) proposed that each original research article should include a "Constraints on Generalizability" statement in its discussion section. In this statement, authors elaborate on the identification of boundary conditions of their findings. To show how this could look in a developmental psychological research article, Table 3 shows an excerpt from the discussion section of a study on the role of empathy in prosocial behavior of 5–8-year-old children (Thiede et al., 2023). The experiment involved reading a story book together with an experimenter and a task in which it was measured whether children engaged in polite lie-telling and prosocial encouragement.

Conclusions

There are increasing calls for authors to report sociodemographic data in developmental science. Doing so serves to contextualize research findings within the settings where they were generated. Reporting of sociodemographic data – although desirable – is complex and requires a nuanced understanding of what to measure and how to do so. Unlike many other forms of research data, sociodemographic data also carry risks of re-identification and warrant special ethical considerations. Even within a setting, sociodemographic constructs may vary across different segments of the population. Care must be taken in comparing participants across settings on sociodemographic markers as the same markers may have a different underlying factor structure in different contexts. On the part of journals, we recommend policies that encourage the provision of sociodemographic data but in a manner that is flexible and adapted to the enormous variation in sociodemographic make-up of research samples. Lastly, as our science moves toward greater transparency and openness, ensuring that the provision of sociodemographic data protects participants' privacy is essential.

As a final note, we discuss two important points around this effort. First, our focus has been on infant samples and our methods and proposed framework are adapted to children's early years. We believe that different approaches may be needed to collect demographic data in older populations (e.g. querying type of schooling). The proposed framework provides a potential foundation for work with older populations and certainly, the overall approach may be transferable. Second, we acknowledge our own positionality in developing the original framework and in translating the framework to practices. In our original paper (Singh, Barakova et al., 2024), we have provided a positionality statement for the group of authors that contributed to the original framework. Inherent in this statement is that the approach and framework are constrained by the perspectives, experiences, identities, and expertise of the authorship team and cannot possibly encompass the range of experiences and identities associated with the participants that we sample and the populations to which we expect to generalize. In large part, our goal in setting up a community site for future adaptations is to invite future interactions, alternative approaches, and revisions from authors of diverse backgrounds working with diverse populations.

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ORCID

Jessica E. Kosie http://orcid.org/0000-0002-2390-0963

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