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# The Political Is Personal: Measurement and Application of Nation-Level Indicators of Gender Equity in Psychological Research

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## Abstract

Consistent with the dictum, “the personal is political,” feminist scholars have maintained that gender equity in security, access to education, economic opportunity, and property ownership are central to women’s well-being. Empirical research evaluating this thesis can include nation-level indicators of gender equity, such as the United Nation Development Program’s Gender Empowerment Measure. Yet, despite the growing popularity of such measures, there has been little discussion of the adequate measurement of gender equity or the appropriate application of such tools in theory-grounded empirical research within psychology. Moreover, the bulk of psychological research that has integrated such indicators has not employed a feminist or emancipatory framework. The authors summarize and evaluate nation-level gender equity indicators in order to familiarize researchers with the available tools, and the authors review the limited psychological literature that has used these indicators. The authors also discuss how psychological research can better use gender equity indicators in empirical models to examine political processes linked to women’s well-being.

## Keywords

gender equity, empowerment, feminism, cross cultural psychology, political participation, employment, health, land ownership, intimate partner violence

The public reality and institutional structures of domination make the private space for oppression and exploitation concrete . . . . I think it is crucial to talk about the points where the public and private meet, to connect the two.

—bell hooks, *Talking Back*, 1989

The phrase “the personal is political” has been widely used among feminists for decades to recognize that women’s psychological functioning reflects structural inequities that are rooted in patriarchy (Hanisch, 1970). Feminist scholars have argued that such inequities create an environment that perpetuates women’s subordinate status and impairs their psychological and physical functioning (Glick & Fiske, 2001; Jenkins, 2000; Wingood & DiClemente, 2000). Psychologists maintain that inequities are not simply a political issue, but are also always psychological and pivotal in attaining wellness (Griscom, 1992; Jenkins, 2000; Prilleltensky, 2008). For example, feminist psychological perspectives assert that women’s civic, political, social, economic, and cultural rights are integral to psychological health (Lykes, 2000), and that research on the psychology of women should also include a discussion of structural and political factors (Zurbriggen & Capdevila, 2010). Social psychologists have argued that structural inequities should be examined to understand well-being, instead of

focusing on individual difference variables alone (Apfelbaum, 1979). Similarly, community psychologists such as Prilleltensky (2008) suggest that well-being is achieved by the simultaneous satisfaction of personal (e.g., self-determination), relational (e.g., respect), and collective (e.g., adequate access to health care) needs. Thus, approaches across psychology recognize that the well-being and functioning of the individual is nested within the macro-level context, making clear that the personal is indeed political. Yet, although many have argued that attention to individual factors should occur in the context of macro-level factors, the bulk of mainstream psychology has tended to study individuals in micro-level investigations that separate individuals from their social context (Griscom, 1992; Pettigrew, 1991; Yoder & Kahn, 2003). To move the discipline forward, we suggest that feminist psychologists

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reframe their questions to include analyses of how institutionalized power differentials impact women's micro-level psychological experience.

To this end, we have several aims in our article. First, we provide a framework describing how macro-level inequities based on gender are critical to women's psychological functioning. Second, in order to facilitate researchers' literacy of available macro-level indicators, we describe and evaluate measures of nation-level gender equity and review the small but growing literature within psychology that has begun to employ them. Finally, we propose an expanded frontier of feminist psychological research that would broaden and transform the scope of psychological science by taking into account the effects of macro-level structural inequities on social and psychological processes. Such a transformation requires that, rather than simply examining day-to-day micro-level psychological functioning, researchers must examine explicitly the connections between gender equity and experiences that can reflect such power differentials (e.g., sexuality, identity, self-concept and self-esteem, psychological distress, and interpersonal relationships; Moane, 1999, 2010).

## Gender Equity and Psychology

Social psychologists have demonstrated that one of the most ubiquitous group-based inequalities is based on gender whereby, across cultures and countries, men and women hold different roles reflecting the bias of male structural and social power (Pratto, Sidanius, Stallworth, & Malle, 1994). Authors from the Global South<sup>1</sup> have articulated that gendered (i.e., male) "public" space is the key to power, privilege, opportunities, and wealth that limits and controls (women's) access to resources (Tamale, 2004). A quick glance at international data immediately demonstrates that women across the world are, on average, disadvantaged by power differentials and are in more subordinate positions than are men (Acosta-Belén & Bose, 1990). For example, globally, women hold only 17% of seats in national parliaments and women's earnings are approximately 70% of men's earnings (United Nations [UN], 2010b). Similar figures, which have been static since the 1970s, suggest that women perform 66% of the world's work but earn around 10% of global income and own around 1% of the world's property (UN, 2010a).

A growing interest in and attention to gender equity in the international arena in the past several decades was matched by the development of nation-level indicators that first emerged with the United Nation Development Program's (UNDP) 1995 *Human Development Report (HDR)*. At that time organizations such as the UNDP and the World Economic Forum began publishing annual reports with indicators that were intended to index human development and the status of women at the national level. These indicators assess gender inequities in various domains including political, educational, economic, and health. Over 15 years later,

an assortment of composite and individual domain indicators of gender equity now exists and is readily accessible. Although great strides have been made in raising awareness of gender-based inequities through the use of these indicators, efforts to curb inequality have been limited, in part, because existing research has not adequately investigated the processes by which structural inequities may perpetuate the subordination of women and threaten their psychological functioning. As such, taking a critical view of how structural inequities perpetuate the subordination of women requires that psychologists expand their investigations to include an examination of macro-level variables. Identifying structural patterns of inequality has long been the task of political and social theorists; however, as Martín-Baró (1994) argued, psychologists can and should reframe standard methods to consider that the root causes of oppression lie in the structures and ideologies that underlie inequity. A psychological analysis of oppression should involve a systematic exploration of the links between social and political conditions with psychological patterns, with explicit emphasis on taking action to improve those conditions (Moane, 1999). Although many approaches in psychology *acknowledge* the importance of social context, they largely focus solely on the individual without adequately analyzing the impact of institutionalized power differentials (Pettigrew, 1991).

Our framework is partly rooted in the theoretical perspectives offered by Women of Color and Third World feminists<sup>2</sup> (among others), who argue that gender oppression operates not just through heterosexual relations, but also through social systems that continually subjugate women and contribute to the feminization of poverty (Lugones, 2007; Sen & Grown, 1987). As women writing from a perspective of the Global South highlight, there is and must be a diversity of feminisms—responsive to the different needs and concerns of different women and defined by them for themselves (Sen & Grown, 1987). Feminism cannot be based on a rigid concept of universality that negates the wide variation in women's experiences; yet, the subordination of women has universal elements that are evidenced in nation-level indicators of gender equity. Thus, although we recognize that homogenizing and universalizing theories cannot bring about localized justice (Grewal, 1999), we maintain that incorporating nation-level indicators of gender equity into psychological research can help identify mechanisms through which gendered macro-level inequities exert their effects on women's psychological well-being.

Although calls to address the role of social inequality in empirical psychological research (Cole, 2009) and to include non-American samples (Arnett, 2008) are of increasing prevalence, the field of psychology has only recently begun to employ nation-level indicators of gender equity to the study of women's psychological functioning. There are certain limitations to employing measures that conceal the specificity of experience from country to country as well as local variations in the implementation of national policies, but a great deal

**Table 1.** Composite and Domain-Specific Indicators of Gender Equity and Equality

Composite Indicators	
Gender Empowerment Measure (GEM) <sup>a</sup>	Includes (a) women's percentage shares of parliamentary seats; (b) women's percentage shares of executive (i.e., positions as legislators, senior officials, and managers) and professional or technical positions; and (c) women's and men's estimated earned income
Standardized Index of Gender Equality (SIGE) <sup>b</sup>	Includes (a) female: male ratio in access to education (1/3 combined primary, secondary, and tertiary enrollment; 2/3 adult literacy); (b) female: male ratio in life expectancy; (c) female: male ratio in labor market participation (or economic activity rate); (d) female share in higher labor market occupations (e.g., technical, professional, administrative, and management positions); and (e) female share in parliamentary seats
Gender Gap Index (GGI) <sup>c</sup>	Includes (a) female: male ratios in labor force participation, wage equality, earned income, share of legislators, senior officials, and managers, and share of professional and technical positions; (b) female: male ratios in literacy, primary enrollment, secondary enrollment, and tertiary enrollment; (c) female: male ratio in parliamentary seats and ministerial positions, and the number of years during the past 50 with a female head of state; and (d) female: male ratio in life expectancy ratio and sex ratio at birth
Gender Equality Index (GEI) <sup>b</sup>	Ratio of Gender-related Development Index (GDI) to Human Development Index (HDI)
Gender Inequality Index (GII) <sup>a</sup>	Includes (a) maternal mortality ratio and adolescent fertility rate; (b) share of parliamentary seats and attainment of secondary education; and (c) labor force participation rates
Domain-specific Indicators <sup>a</sup>	
Parliamentary representation	Percentage of parliamentary (lower or single, and upper house or senate) seats held by women
Educational enrollment	Female: Male ratio in the number of students enrolled in primary, secondary, and tertiary education, regardless of age, as a percentage of the population of theoretical school age for the three levels (available separately at each level or combined)
Literacy	Percentage of adult (i.e., 15 years of age and older) female population which is literate
Earned income	Female: male ratio in estimated earned income
Executive positions	Percentage of positions (including senior officials of government or special-interest organizations, traditional chiefs and heads of villages, and corporate managers, directors and chief executives) held by women
Professional and technical positions	Percentage of positions (including professionals in physical, mathematical, engineering, and life sciences, as well as and health and teaching professionals) held by women
Life expectancy	Female: male ratio in life expectancy
Population	Female: male ratio in population
Contraceptive prevalence	Percentage of women in a nation aged 15–49 currently using some form of contraception

Note. For all indicators except the GII, higher values indicate greater gender equity. For the GII, lower values indicate greater equity.

<sup>a</sup>Can be obtained from <http://hdr.undp.org/>.

<sup>b</sup>Can be constructed from domain-specific indicators available at <http://hdr.undp.org/>.

<sup>c</sup>Can be obtained from <http://www.weforum.org/reports/global-gender-gap-report-2010>.

can still be gained through the examination of power differentials at the national level. Although feminist psychologists have yet to fully examine nation-level indicators for their explicit liberatory potential, there has been investigation into how gender inequities at the national level are linked to psychological gender differences. This small but growing literature lends evidence to how the personal is linked to the political.

## A Review of Gender Equity Measures

Although the past decade has seen growth in the use of nation-level gender equity indicators in psychological research, studies have largely failed to include outcomes that might be more reflective of feminist goals or that address the specific psychological mechanisms responsible for the links between the political and personal. Moreover, missing in the

psychological literature is an analysis of gender equity indicators (i.e., their strengths, limitations, and appropriate uses) and how they may facilitate a feminist liberation psychology. For this reason, we review the available domain-specific and composite indicators of nation-level gender equity and, when available, review findings that have employed those indicators in the psychological literature.

### Composite Indicators

A handful of composite indices of gender equity are currently in use and are widely regarded across the social sciences (Table 1 describes these measures and their components). These indices are computed using domain-specific indicators across several domains, such as politics (e.g., proportion of parliamentary seats held by women) or education (e.g., enrollment ratios and literacy rates).

**GEM.** The Gender Empowerment Measure (GEM), introduced in the 1995 *HDR*, is a composite index that was part of the UNDP's effort to address the status of women around the world. It is composed of three dimensions: the extent of women's political participation and decision making (measured by women's share of parliamentary seats), economic participation and decision-making power (i.e., women's share of executive and professional or technical jobs), and the power exerted by women over economic resources (i.e., gender ratios in estimated earned income; for technical details on calculating the GEM, see UNDP, 1995, 2009). Despite its widespread use, the GEM is limited in its utility to psychologists because it relies so heavily on economic and political domains. A critical concern is that the GEM has an urban elitist bias (UNDP, 2010) and therefore does not reflect the empowerment of a nation's women generally, but rather the empowerment of *upper-class* women specifically. That is, given that elected officials tend to be highly connected to politically powerful families and organizations, the election of a woman to a parliamentary seat may reflect those political connections more than it reflects a cultural value of women in decision-making positions. Similarly, the economic indicator used in the GEM measures the degree to which women are represented in middle- and upper-middle class jobs, not the degree to which they can earn and control an income. Thus, in a sense, the GEM reflects women's progress in penetrating the glass ceiling.

In addition, as an index intended to measure women's decision-making power, the GEM largely assesses *public* decision making. Women's ability to make decisions within a household (e.g., consenting to sexual intercourse with her husband, having a say in the allocation of familial financial resources, choosing to be pregnant) is critical to empowerment, but it is not measured by the GEM. Although the GEM remains widely regarded as a global indicator of women's empowerment, some have argued that it actually assesses the *outcomes* of women's empowerment, or gender equality (Grabe, 2010a). We include it in our discussion here primarily because it has been used extensively in psychological research as a measure of gender equity.

For example, the GEM has been found to be negatively correlated with hostile sexism toward women (Glick et al., 2000; Napier, Thorisdottir, & Jost, 2010), such that individuals from nations with greater gender equity report less hostile attitudes toward women, compared to individuals from less equitable nations. That is, micro-level hostile sexism toward women is reflected in macro-level gender inequities, consistent with the feminist dictum that the personal is political. Other studies in psychology have found the GEM to be negatively correlated with gender differences in mate preferences (Eagly & Wood, 1999), sexual behaviors and attitudes (Petersen & Hyde, 2010), math achievement (Else-Quest, Hyde, & Linn, 2010), agreeableness (Lippa, 2010), physical aggression (Archer, 2006), and division of housework (Batalova & Cohen, 2002; Ruppanner, 2010), as well as women's

expression of anger (Fischer, Rodriguez Mosquera, van Vianen, & Manstead, 2004). In other words, nations in which there is greater equity tend to have individuals who show less gender-differentiated behaviors, traits, and attitudes across multiple domains of psychology. Nonetheless, because the GEM, like all measures, is imperfect, these findings warrant in-depth follow-up study with other nation- and local-level indicators of gender equity.

In response to the demonstrated limitations of the GEM (see 2006 special issue of the *Journal of Human Development* 7[2], which was devoted entirely to the measurement of nation-level gender equity), social scientists developed several additional composite indices of gender equity. These indices include the Gender Gap Index (GGI; Hausmann, Tyson, & Zahidi, 2009), the Gender Equality Index (GEQ; White, 1997), the Gender Inequality Index (GII; UNDP, 2010), and the Standardized Index of Gender Equality (SIGE; Dijkstra, 2002), among others. These measures are described in detail in Table 1.

**GGI.** The GGI (Hausmann et al., 2009), published by the World Economic Forum, was designed to assess gender equity in access to resources and opportunities. It comprises four subindices addressing the domains of economics, education, politics, and health. Each domain contributes equally to a nation's gender equity assessment, and the component gender ratios are weighted within each subindex to account for their differing variability (for more technical details on the computation of the GGI, see Hausmann et al., 2009). The GGI has been linked to gender differences in academic achievement (Else-Quest et al., 2010; Guiso, Monte, Sapienza, & Zingales, 2008; Hyde & Mertz, 2009), such that more egalitarian nations show smaller gender gaps in achievement, as well as less variability in those gaps, compared to nations with less gender equity.

**GEQ and gender-related development index (GDI).** The GEQ (White, 1997) was designed to tap into the implicit or latent variable of gender equity in the UNDP's GDI, which was introduced as a companion to the Human Development Index (HDI) and GEM in the 1995 *HDR*. Not a measure of gender equity per se, the GDI is a variation of the HDI, which is a composite indicator of nation-level human development in the areas of education (enrollment and literacy rates), health (life expectancy), and earned income. The GDI assesses the same components as the HDI, but it reduces or corrects those components for their gender disparities—essentially penalizing a nation for gender inequity, but not rewarding a nation for equity. Thus, a nation's GDI value is simply the HDI, discounted for gender inequity; it is necessarily equal to or lower than its HDI. To illustrate, a nation with a high level of human development and low gender equity (e.g., South Korea) will have a higher GDI than a nation with lower human development but higher gender equity (e.g., Costa Rica) because the HDI value sets the upper limit on the GDI. The HDI and GDI

are so inextricably linked that they are almost perfectly correlated,  $r(154) = .996, p < .001$  (data from UNDP, 2009).

Nonetheless, the GDI has been misconstrued as a measure of gender equity (or referred to as a measure of gender equality) in a variety of popular press and academic publications across the social sciences (Schüler, 2006). In psychology, the GDI has been referred to inaccurately as a “gender equality” indicator (e.g., Eagly & Wood, 1999; Eastwick et al., 2006; Glick et al., 2004; Schmitt, Realo, Voracek, & Allik, 2008), a measure of “the emancipation of women” (Archer, 2006, p. 138) and “gender equity” (Lippa, 2010), and an instrument assessing “the degree to which men and women differ in the achievement of basic human capabilities, including health, longevity, education, and a decent standard of living,” (Schmitt & 121 Members of the International Sexuality Description Project, 2004, p. 567). The GDI should not be used as an indicator of gender equity; however, one can partial out the effects of the HDI to tap into the dimension of gender equity that is implicit in the GDI. For example, Glick et al. (2000) found significant negative partial correlations between national GDI values and men’s endorsement of hostile and benevolent sexism toward women across 19 nations, controlling for HDI values; similar links were found with hostile and benevolent sexism toward men (Glick et al., 2004).

Because the GEQ relies on both the GDI and the HDI in its construction, it inherits certain limitations that those indices share. Most notably, both the GDI and the HDI are overly dependent on earned income. Although the economic, health, and education components are equally weighted in the GDI and HDI, they are not all normally distributed. The health and educational components show very little cross-national variation compared to the income component; as a result, the income component explains more than 90% of the variance in the HDI and GDI in most countries (Walby, 2005). Thus, we discourage researchers from using the GEQ as a composite indicator of gender equity.

*GII.* The 2010 *HDR* introduced the GII (UNDP, 2010), which assesses inequities in three dimensions, including reproductive health (as measured by maternal mortality and adolescent fertility), empowerment (i.e., female:male ratio in parliamentary representation and educational attainment at or above secondary level), and labor force participation. The GII has the advantage of being available for a greater number of nations ( $n = 140$ ) than the GEM ( $n = 109$ ). To date, it has not been used in empirical psychological research.

At first glance, many composite indicators appear attractive because they address multiple domains of gender equity, consistent with theoretical (Nussbaum, 2000; Sen, 1999) and empirical (UNDP, 1995) work demonstrating that gender equity is multivariate. However, although the various domains of gender equity often covary, they are not conceptually or empirically equivalent. Composite indices that aggregate multiple domains of gender equity into one value

cannot point to specific domains or provide evidence supporting the role of a particular mechanism. Yet, researchers frequently employ composite indicators, which may include theoretically irrelevant domains, and perhaps make the assumption that gender equity is a univariate construct. To illustrate the multidimensional nature of gender equity, we report in Table 2 the bivariate correlations among indicators across multiple domains of gender equity (along with means, standard deviations, skewness, range, and the number of nations for which these data were most recently available [UNDP, 2009]). Most indicators are moderately intercorrelated, although some (e.g., gender ratios in the population and both educational indicators) are not. Because the ability to distinguish dimensions of equity in order to examine processes surrounding inequity and marginalization is critical for theory development and evaluation, it may be preferable in many cases to analyze domain-specific gender equity, carefully choosing theoretically relevant domains that reflect the mechanisms under investigation.

### Domain-Specific Indicators

*Politics.* The political domain indicator most often used in composite indices, such as the GEM, is women’s parliamentary representation. As described earlier, this measure of political representation has been criticized on the grounds that it has an elitist bias, representing the political achievements of well-connected, upper-class women rather than women more generally. Moreover, electing women to parliament does not guarantee that women’s needs are addressed in public policy. (This point is evident, most obviously, in policies regarding birth control.) Although certainly critical to gender equity, women’s parliamentary representation does not reflect women’s involvement in grassroots political efforts or even, in many cases, the primary concerns of women, to the extent that female representatives are still largely positioned in male-dominated spaces where they have little influence (Silva & Grabe, 2011). A reasonable alternative would include the representation of women in *local* governments, insofar as such positions may be more accessible to a diverse group of women and rely less upon familial connections; however, this statistic is rarely available, particularly in less “developed”<sup>3</sup> nations. An ideal indicator of women’s political decision-making power would reflect voting behaviors; for example, the percentage of eligible female voters who vote in national elections would capture women’s engagement in the political process, regardless of socioeconomic status. Yet, this statistic is also rarely available.

*Education.* Empirical work from disciplines across the social sciences points to the unique influence of gender equity in education on human development outcomes such as declining birth rates and child mortality (LeVine, LeVine, & Schnell, 2001). Gender ratios in school enrollments provide estimates of gender equity in school enrollments relative

**Table 2.** Bivariate Correlations and Descriptive Statistics for Domain-Specific Gender Equity Indicators

	1	2	3	4	5	6	7	8	9
1. Parliamentary representation	—								
2. F: M combined enrollment ratio	.17*	—							
3. F: M literacy	.16*	.80**	—						
4. Executive positions	.28**	.49**	.56**	—					
5. Professional and technical positions	.23*	.43**	.59**	.57**	—				
6. Female:male earned income	.36**	.14	.19*	.50**	.52**	—			
7. Female:male life expectancy	.04	.35**	.37**	.34**	.55**	.20**	—		
8. Female:male population	.13	.06	.17	.38**	.63**	.44**	.54*	—	
9. Contraceptive prevalence	.18*	.60**	.65**	.20*	.31**	.02	.16	.35**	—
Range (actual)	.00–51.00	.56–1.21	.29–1.23	3.00–57.00	9.00–70.00	.16–0.90	.98–1.22	.66–1.19	3.00–96.00
Skewness	.61	–1.17	–1.54	–.22	–.87	–.50	1.28	–1.86	–.15
Kurtosis	.06	1.23	2.04	–.40	.85	–.19	3.43	8.24	–1.02
M	17.28	.99	.89	28.58	47.90	.54	1.07	1.01	46.67
SD	10.36	.12	.16	11.75	11.79	.15	.04	.07	22.89
N (available nations)	186	175	176	122	123	173	181	125	165

Note. Data from UNDP (2009).

\* $p < .05$ . \*\* $p < .01$ .

to population size, which, in turn, reflects the valuation of girls' education. This measure is available for nearly all nations and is frequently used in composite indicators and in the computation of the gender inequity correction in the GDI. In a meta-analysis of gender gaps in performance on international mathematics assessments, Else-Quest, Hyde, and Linn (2010) demonstrated that gender ratios in school enrollments predicted gender differences in math achievement and attitudes among adolescents—such that nations with greater enrollment equity displayed smaller gender gaps in math test scores, math self-confidence, and value of math. This pattern of results was consistent with the gender stratification hypothesis, a sociological model which maintains that girls' access to opportunity structures is reflected in girls' achievement, in part because girls learn to recognize the cultural value of girls' education and, in turn, value investing in their own educational achievement. In this way, nation-level gender equity can be used to examine how gendered access to opportunity structures and the cultural value of women are associated with girls' behaviors.

A second indicator of educational gender equity is gender ratios in literacy rates. Although two thirds of the illiterate adults in the world are women (UNESCO, 2008), and women's greater illiteracy is a major gender inequity in developing nations (Slaughter-Defoe, Addae, & Bell, 2002), the values for this indicator have reached ceiling in nearly all of the high and very high HDI nations, resulting in a negatively skewed distribution. Thus, gender ratios in literacy rates may not be particularly useful for studies that rely on a sample of "developed" nations, as most cross-national studies do. However, if literacy rates are a critical component of the model being analyzed, it may be appropriate to cull the more "developed" nations from the sample. Gender equity in literacy is crucial; several studies suggest that maternal literacy predicts better child and maternal health outcomes after controlling for other socioeconomic factors (e.g., Glewwe, 1999; Thomas, 1999).

*Income and employment.* Globally, men earn 16.5% more than women (International Trade Union Confederation, 2008) and women comprise 70% of the poor (United Nations Development Fund for Women [UNIFEM], 2010); from nation to nation, this discrepancy varies in magnitude. The economic domain of gender equity frequently includes an assessment of the wage gap. For example, nations with smaller wage gaps tend to demonstrate a more egalitarian division of household labor (Ruppanner, 2010).

However, assessing the wage gap is problematic insofar as the value of measuring gender gaps in earned income rests on several untenable assumptions (Cueva Beteta, 2006). One such assumption is that women have the freedom to spend their own income. A woman's freedom to spend independently earned income is critical to her empowerment but cannot be assumed from wage earning because husbands frequently control how household income is allocated and

spent (UNIFEM, 2010). Even among interventions aimed at increasing women's economic empowerment via loans, only partial evidence demonstrates women's control over their income. For example, 63% of female loan holders in Bangladesh reported having partial, very limited, or no control over the loans they had procured (Goetz & Gupta, 1996). Even when women do control their income, men tend to have more "disposable" income than women because women are more likely to spend their income on their families, particularly on their children (UNDP, 2009). Another untenable assumption of the wage gap is that all labor is paid. Women are more likely than men to work in unpaid or informal labor arrangements (International Labour Organization [ILO], 2007; UNDP, 1995), which is not reflected in indicators of the wage gap or earned income. Although women's involvement in paid labor outside the home has increased throughout the world, men's involvement in unpaid labor inside the home (i.e., housework, child care) has not increased accordingly (UNDP, 2009). Such gender inequities in household labor have been a topic of psychological and sociological study for some time (e.g., Bianchi & Milkie, 2010). For each of these reasons, the wage gap is all the more striking, yet measurement remains problematic. Psychological theory and research could contribute to this debate and evaluate these issues by assessing how women's intrahousehold decision-making power varies cross-nationally and relates to nation-level indicators of economic and political gender equity.

The income and employment domain of gender equity also can be assessed with women's share of higher labor market positions, which is composed of executive and professional or technical jobs and reflects the permeation of the glass ceiling. In their examination of the gender stratification hypothesis, Else-Quest et al. (2010) examined women's representation in careers in research and science in relation to adolescent math attitudes in 69 nations. They reported that women's share of research jobs predicted the magnitude of gender differences in math attitudes, including math self-confidence, value, intrinsic and extrinsic motivation, anxiety, self-concept, and self-efficacy. In nations with more equitable representation of women in such careers, boys and girls reported more similar attitudes than in nations with less equitable representation of women in research jobs (Else-Quest et al., 2010). In other words, when career opportunities in science were available to and occupied by women, girls felt more positively about their own abilities and future. In this way, the well-being of girls at the individual or micro level mirrored the empowerment of women at the national or macro level. Such a pathway is consistent with our thesis that the political and personal are linked and that feminist or emancipatory models can be examined by integrating nation-level variables with more traditional psychological methods.

*Land rights.* Although women provide nearly 80% of the world's agricultural labor, they own only 2% of the world's

land (Rural Development Institute, 2010). Feminist economists have argued that the gender gap in ownership and control of property is the single most critical contributor to the gender gap in economic well-being and therefore constitutes one of the main forms of inequality between the sexes (Agarwal, 1994; Deere, 2001; Deere & Doss, 2006; Razavi, 2003). Importantly, customary norms and practices, and sometimes law, throughout most of the world are based on recognizing the male head of household as the main authority figure and principal owner of land assets (Deere & Leon, 2001). Thus, land ownership reflects issues of power and dominance in a way that other forms of property, such as home ownership, may not. Moreover, although it is typically necessary to own one's land in order to own the house on it, one can own a plot of land without being a home-owner. Despite critical new land rights legislation in many countries, most women continue to face significant barriers to realizing their legal rights, so that large gender gaps in the distribution of land assets between women and men persist (Agarwal, 1994; Deere, 2001).

Bina Agarwal (1994, 1997) has argued that women's ownership of assets (in particular land) leads to improvements in women's welfare, productivity, equality, and empowerment; findings from a small but growing body of research support her argument. Demonstrating the links between the political context and personal experience, in Kerala, India, as many as 49% of women who did not own property suffered long-term physical violence from an intimate partner, compared with women who owned either land (18%) or a house (10%) and those who owned both assets (7%; Panda & Agarwal, 2005). In 2006, economists from the International Center for Research on Women expanded on Panda and Agarwal's (2005) research using qualitative interviews with women landowners to examine the role of land in women's receipt of domestic violence. They suggested that property ownership extended women's negotiating power within the marital relationship and their ability to confront subordination, thereby decreasing levels of domestic violence. Grabe (2010b) replicated and extended these findings in a quasi-experimental study among two groups of women in rural Nicaragua (landowners and nonlandowners) and found that landowning women reported lower levels of domestic violence than landless women—explained, in part, by differences in women's psychological empowerment. Her findings indicated that land ownership was directly linked to gender ideology, which was related to women's interpersonal power and control within the relationship, which explained why and how owning land contributed to lower levels of physical, sexual, and psychological violence from intimate partners.

These limited but groundbreaking correlational findings indicate that gendered structural inequities (such as land ownership) are linked to women's psychological well-being. Thus, the development and use of an indicator of gender equity in land rights will be an important building block as

psychologists conceptualize how gender relations are sustained and reproduced over time and how they can be altered.

**Health.** The health domain of gender equity is particularly diverse, representing global measures such as gender ratios in life expectancy as well as more specific aspects of reproductive and sexual health. Yet, despite the diversity in ways to conceptualize the health domain of gender equity, there are few available options for nation-level measurement across many nations. Researchers can and should seek out the indicator that is most relevant to the phenomenon being studied, or use multiple indicators for a more comprehensive multivariate approach, as well as recognize that there is no single comprehensive indicator of gender equity in health. Indicators of women's reproductive freedom (such as access to safe and legal abortion, contraceptives, and condoms) are potentially useful in psychological research, although not readily collected for a variety of nations. An indicator of women's reproductive freedom that is available for many nations, including the least "developed" ones, is contraceptive prevalence.

Gender ratios in overall population and life expectancy continue to be used in many composite measures (e.g., GGI) because they are available for nearly all nations. In most nations, women have greater life expectancy than men; it is often assumed that women are hardier than men—not that they live less difficult or more health-promoting lives. However, in nations where the health of daughters is neglected in preference of the health of sons (e.g., China, Pakistan [Sen, 1990]), these indicators reflect the low value of women and girls in a culture. Because life expectancy is relatively stable and does not reflect short term or recent changes in women's lives or health care, it can take years for changes in policy to affect life expectancy rates. On a more practical level, gender ratios in the population and in life expectancy are not normally distributed across nations (see Table 2), which can limit the range of appropriate statistical analyses. Depending on the particular sample of nations used and the resulting degree of skew or kurtosis, distributions can typically be normalized with base-10 logarithmic transformations.

Rates of maternal mortality (or dying during pregnancy, childbirth, or up to 6 weeks postpartum) vary cross-nationally (Hogan et al., 2010). Causes of maternal mortality are numerous, but they can reflect women's restricted access to health care, nutrition, and clean water, as well as high rates of HIV infection. A recent study of 181 nations found that 50% of maternal deaths in 2008 occurred in only a handful of nations, including India, Nigeria, Pakistan, Afghanistan, Ethiopia, and the Democratic Republic of Congo (Hogan et al., 2010); notably, these six nations perform very poorly on most indicators of gender equity (UNDP, 2010). Given that a disproportionate amount of maternal deaths occur in such a small group of nations, maternal mortality rates are not normally distributed across nations and are therefore problematic for most statistical analyses.

A related indicator is infant mortality rate, which, to some extent, reflects maternal deprivation and undernourishment. Cross-national comparisons demonstrate that infant mortality rates reflect not only scarcity of resources generally, but scarcity of resources for *women* (Osmani & Sen, 2003). Still, the HDI and infant mortality rates are very highly correlated,  $r(133) = .90, p < .001$  (UNDP, 2010). This health indicator highlights an emerging area of study for psychologists. The epigenetic pathways through which maternal well-being can affect the intrauterine environment and, thus, lifespan development and well-being of offspring are important topics for research in developmental psychology. For example, in the United States, African American women's perceived receipt of racial discrimination is linked to poorer birth outcomes (Mustillo et al., 2004). Similarly, because women's experience of sexist discrimination may account for gender gaps in the incidence of psychiatric symptoms (Klonoff, Landrine, & Campbell, 2000), there is reason to believe that sexist discrimination should also shape birth outcomes. Such processes can and should be examined with macro-level variables as well as micro-level ones.

**Violence against women.** Although violence against women has clearly demonstrated psychological and physical health consequences (Heise, Ellsberg, & Gottemoeller, 1999), and it has become widely accepted in the past two decades that gender-based violence reflects gender inequity (Koss et al., 1994; McKenzie & Rozee, 2010), few nations record, track, and report rates of violence against women. Violence against women is the most pervasive human rights violation in the world (UNIFEM, 2006). Domestic violence, in particular, has become widely recognized internationally as a serious problem with grave implications for women's well-being and functioning (WHO, 2005). A review of 50 population-based studies from 36 countries carried out prior to 1999 indicated that between 10% and 52% of women reported being physically abused by an intimate partner at some point in their lives, with approximately one third to one half of women also reporting experience of sexual violence by an intimate partner. Between 11% and 32% of women and girls reported having been sexually abused, either as children or adults (Heise et al., 1999). In a more recent study conducted on domestic violence in 15 sites across 10 countries, the World Health Organization (WHO) demonstrated that between 15% and 71% of women reported physical or sexual violence by a husband or intimate partner (WHO, 2005). Taken together, these findings shed new light where data were previously unavailable, and they highlight a considerable body of global research indicating that domestic violence is widespread and cuts across both countries and class groups.

Although the multicountry work conducted by the WHO has helped to establish international standards by documenting the magnitude of violence against women and by producing comparative data, it is also likely that the estimates reported should be viewed as conservative estimates of a

global problem. It is difficult to establish the extent of violence namely because many women experience strong pressures to maintain silence regarding what occurs within the marital relationship. Yet, despite these limitations, employing standardized methodology that is widely used permits useful cross-national comparisons and analyses at some level. Moreover, the categories of assessment for these measures are sufficiently broad (e.g., hitting/pushing/kicking, insulting/humiliating) that researchers can easily include culturally relevant examples of the measured behavior. Recognizing the complexities in responsibly and accurately measuring domestic violence cross-culturally, we recommend following the practical guide and ethical framework published by the WHO for researchers interested in collecting data on violence (Ellsberg & Heise, 2005).

Archer (2006) examined cross-national patterns of gender differences in domestic violence across 16 nations and found that the GEM was strongly linked to the magnitude of gender differences in physical aggression, such that nations with more gender equity displayed smaller gender gaps (i.e., men and women displayed more similar levels of physical aggression toward their partners). This pattern, Archer demonstrated, was explained by lower prevalence rates of male partner assaults on women in nations with higher GEM values. To monitor progress toward gender equality, nation-level indicators of male violence against women must be developed.

In sum, there are a variety of composite and domain-specific nation-level indicators available for multiple domains of gender equity, although researchers must be mindful in how they use these tools. Researchers should (a) opt for theoretically meaningful and relevant domain-specific indicators when possible and (b) examine indicators' distributions for normality, use appropriate statistical analyses and, when necessary, apply logarithmic or square-root transformations. In many cases, follow-up study with more localized or culturally specific indicators is an appropriate next step in the research process. As work continues in this field and an increasing demand for high-quality gender equity measurement follows, we anticipate that the breadth and validity of measurement will continue to improve.

## An Expanded Frontier in Feminist Psychology

In recent years, psychologists' use of nation-level gender equity indicators to connect individuals' scores on psychological measures to gender stratification within a culture or nation has slowly emerged. For example, empirical investigations have linked nation-level gender equity to gender differences in psychological constructs such as academic attitudes and achievement (Else-Quest et al., 2010; Guiso et al., 2008; Hyde & Mertz, 2009; Machin & Pekkarinen, 2008; Penner, 2008; Riegle-Crumb, 2005; van Langen, Bosker, & Dekkers, 2006), personality

(Costa, Terracciano, & McCrae, 2001; Lippa, 2010; Schmitt et al., 2008), emotion (Fischer et al., 2004), crying (Becht & Vingerhoets, 2002), sexual behaviors and attitudes (Petersen & Hyde, 2010), mate preferences (Eagly & Wood, 1999; Eastwick et al., 2006), division of household labor (Batalova & Cohen, 2002; Ruppner, 2010), and aggression (Archer, 2006), as well as hostile and benevolent sexism (Glick et al., 2000, 2004). Together these studies demonstrate that personal experiences can reflect political forces. Nonetheless, these psychological investigations have rarely been grounded in explicitly feminist frameworks.

Within the field of international development, which was largely responsible for facilitating global interest in and measurement of gender equity, some social scientists have assumed that *psychological and interpersonal mechanisms mediate the effects of gender equity on women's well-being*. For example, Nobel laureate and feminist economist Amartya Sen's (1990, 1992) influential work on "missing women" maintains that parental preference for sons over daughters and intrahousehold decision-making account for cultural variations in women's economic value and empowerment. According to Sen (1999, p. 194), "The impact of greater empowerment and independent agency of women thus includes the correction of the inequities that blight the lives and well-being of women vis-à-vis men." This theorizing situates women's empowerment as the critical mediating variable in achieving gender equality. Such empowerment processes can—and *should*—be examined by psychologists.

Empowerment has been examined by feminist and community psychologists, who have conceptualized it as a sense of freedom and personal agency or mastery over issues that are important in one's life (Grabe, 2011; Rappaport, 1987; Zimmerman, 1990, 1995) and as enabling women to draw upon skills and resources to cope with stress or trauma (Johnson, Worell, & Chandler, 2005). Although early conceptualizations and investigations of empowerment within psychology gave limited attention to context and focused primarily on individual psychological components (Perkins & Zimmerman, 1995; Riger, 1993), empowerment theory now explicitly links subjective well-being with larger social and political contexts (Perkins & Zimmerman, 1995; Zimmerman, 1995). Through the use of nation-level gender equity indicators, psychologists can begin to investigate how structural inequities are related to processes of women's empowerment. That is, psychologists are well positioned to provide empirical support for processes that have been theorized in the international literature but not fully examined. As processes of globalization continue to intensify, and issues such as the feminization of poverty and women's risk for HIV persist, the need for psychologists to investigate the consequences of structural inequities on women's well-being is gaining increasing imperative.

Only when we achieve an integrated political and psychological understanding of power and well-being can we

effectively study and foster social change. Feminist research needs to critically examine how gendered inequities—at all levels—impact women's psychological functioning in a way that addresses feminist concerns, fosters a reduction in inequality, and/or enhances women's power. To promote liberation, we must simultaneously engage with the political and personal. "A liberation psychology aims to facilitate breaking out of oppression by identifying processes and practices which can transform the psychological patterns associated with oppression and facilitate taking action to bring about change in social condition" (Moane, 1999, p. 180). Thus, feminist psychologists need to begin to examine the links between structural gender inequities and the psychological sequelae of oppression (such as depression, anxiety, shame, disordered eating, sexual dysfunction, and self-harm). Much of the psychological literature and interventions aimed at addressing these factors, however well-intentioned, are aimed exclusively at individual difference variables or helping patients or victims, but they fail to alter the structural variables that buttress women's oppression.

In sum, although a growing sample of studies has integrated nation-level gender equity indicators in traditional psychological methods, few have produced findings that clearly link the personal and political in a theoretically meaningful or transformative way. Thus, we argue for researchers to employ a more explicitly feminist and emancipatory model in which the breadth and utility of nation-level measures are (a) expanded and developed, (b) used in a theoretically consistent manner to index critical mechanisms, and (c) aimed at studying and fostering political change to bring about the empowerment of women and girls worldwide.

## Conclusions and a Cautionary Note

Our article establishes clear value in the application of nation-level gender equity indicators for psychological science, and the research reviewed here suggests that these indicators are linked to a host of gender differences on psychological constructs. However, we urge psychologists to expand the use of gender equity indicators to investigate the psychosocial processes involved in legitimating and maintaining power differentials that threaten women's well-being and psychological functioning. In particular, an expanded frontier of psychological science that examines how structural inequities are related to processes surrounding women's empowerment could make a much-needed contribution to a growing literature and foster social change.

Still, psychologists must exercise caution in drawing ethical or moral conclusions from these investigations. Nussbaum (1995, p. 1) described this challenge and appealed for a balanced and equitable approach, noting that although it is clear that many cultural traditions oppress women and girls, "hasty judgments that a tradition in some distant part of the world is morally retrograde are familiar legacies of colonialism and imperialism, and are correctly regarded with

suspicion by sensitive thinkers in the contemporary world.” Nevertheless, it has also been suggested that norms of justice in most countries, including the United States, are not constructed under the principles of gender equity. Those who defend practices that marginalize women in the name of preserving “culture” or “family values” are often the same individuals or leaders who willingly allow change if it serves to protect their own political and/or economic interests (Phillips, 2002; Tripp, 2002). Thus, the evaluation of the equitable treatment of women and girls within a culture must balance universal and local concerns, as well as avoid engaging the opposing extremes of cultural relativism and jingoistic absolutism. As psychologists, our ultimate goal is the optimization of individuals’ well-being; this goal, while taking into consideration the findings of empirical research, must be met in its respective cultural and historical context. The measures described in our paper are but one set of available tools that can be used in achieving our goal.

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### Notes

1. The term *Global South* is not meant as a geographical reference, but is used instead to reflect the socioeconomic and political divide between wealthy, “developed” countries, known collectively as the North, and the poorer countries that are exploited in processes of globalization. It is a term meant to circumvent some of the implied inferiority that *Third World* invokes.
2. Despite the cautioned use of terms such as *Third World* (Mohanty, 1984), women writing from the Global South often position themselves as *third world feminists* in an effort to highlight the need for postcolonial and transnational analyses of women’s lives in a manner that reclaims use of *third world*.
3. According to the UN, there is no singularly recognized definition of a developed country. Former Secretary General Kofi Annan (2000) defined a developed country as “one that allows all of its citizens to enjoy a free and healthy life in a safe environment.” However, given that many industrialized countries do not meet this criterion, and that the terms *developed*, *underdeveloped*, and *developing* are often used by so-called First World nations to describe the relatively low economic well-being of another country in a manner that implies inferiority, when used in our article, these terms will appear in quotations to reflect the problematic nature discussed here. We use the HDI to operationalize human development.

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