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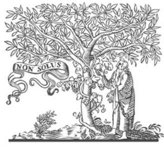

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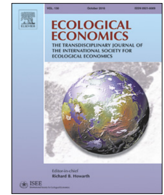

Methodological and Ideological Options

Re-establishing Justice as a Pillar of Ecological Economics Through Feminist Perspectives

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ABSTRACT

Ecological economics has long claimed distributive justice as a central tenet, yet discussions of equity and justice have received relatively little attention over the history of the field. While ecological economics has aspired to be transdisciplinary, its framing of justice is hardly pluralistic. Feminist perspectives and justice frameworks offer a structure for appraising the human condition that bridges social and ecological issues. Through a brief overview of the uptake of feminist perspectives in other social sciences, this paper outlines an initial justice-integration strategy for ecological economics by providing both a point of entry for readers to the vast and diverse field of feminist economic thought, as well as a context for the process of disciplinary evolution in social sciences. We also critique ecological economics' toleration of neoclassical mainstays such as individualism that run counter to justice goals. The paper concludes with a call for ecological economics practitioners and theorists to learn from other social sciences and elevate their attention to justice, to open possibilities for more dynamic, interdisciplinary, community-oriented, and pluralistic analysis.

1. Introduction

Feminist perspectives have long provided a rich critique of the sources and influence of power in establishing norms in society (Marilley, 1996; Offen, 1988; Snyder, 2008). One of the most dominant and influential set of norms stems from the discipline of economics and its influence in education, management, and policy. Economics as a worldview is characterized as highly individualistic in focus, nearly single-minded in the promotion of privatization and markets as the organizing mechanisms for society, and exceptionally resistant to the influence of other disciplines and perspectives (Gowdy and Erickson, 2005). Economics is often promoted as the "most scientific of the social sciences" by its practitioners (Colander, 2005), guided by "efficiency as an objective truth rule" (Bromley, 1990). However, as feminist economist Julie Nelson (1992, p. 107) notes, "Economics, as a social endeavor, reflects some points of view, favored by the group that makes the rules for the discipline, and neglects others."

Questioning and posing new "rules of the discipline" has been a hallmark of ecological economics, including broadening the goals of analysis beyond efficiency to include the scale of the economic system relative to the supporting ecosystem and the equitable distribution of the benefits and burdens of economic cooperation (Daly, 1992). However, while ecological economics was founded on both a scientific and moral critique of the mainstream, research on the ethical dimensions of economics and society has received little attention (Spash, 2013). For instance, Castro E Silva and Teixeira (2011) found less than 3% of papers published in *Ecological Economics* from 1989 through 2009 focused on ethics, equity, and justice. Though ecological economics has aspired to be transdisciplinary, welcoming many viewpoints, the lack of discourse surrounding justice raises the question of whether the "social endeavor" of ecological economics is, in Nelson's words, "favored" by some groups to the "neglect [of] others".

Feminist theory provides the basis for one such group of viewpoints that has been generally neglected in the field of economics, and only marginally influential within the discourse of ecological economics (e.g., Nelson, 2013; Perkins, 1997, 2009). Understanding why economics has been relatively closed to various feminist perspectives may help reveal similar tendencies within ecological economics. Concerns for justice and fairness within mainstream economics have focused largely on the individual's right to choose rather than broader social concerns or unequal power dynamics. In particular, the singular goal of allocative efficiency in the core neoclassical welfare economics model accepts the existing distribution of power, wealth, and income as a given, with little attention to issues of discrimination or injustice in

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market relations (Pujol, 1992).

Other social sciences have more successfully integrated feminist ideas, and we believe this could provide lessons for reinvigorating the justice discourse in ecological economics. Fields such as anthropology that embraced feminist perspectives early on have become more connected to biology, rooted in a deeper time perspective, and have incorporated a reflexive and interdisciplinary scope (Cook, 1983; Stacey and Thorne, 1985; Crasnow, 2006; Rupp, 2006). Geography has also made strides toward mainstreaming feminist perspectives through its integration of gendered issues with concerns for the physical and social composition of the earth as space and place (Johnson, 2012). Psychology has also begun to reflect feminist influences by highlighting the complexities of biological and cultural imperatives in human interactions and environmental influences (Clayton and Myers, 2015). While these avenues of feminist integration are not exhaustive, and do not include all variants of feminism, they offer models for the inclusion of feminist thinking in different fields.

In this paper, we revisit the roots of justice in ecological economics and consider their alignment with the individualistic, maximizing discourse of economics. We offer a cursory outline of feminist principles and their justice implications for the purpose of providing a point of entry into this vast literature for an ecological economics audience. We then outline disciplinary evolution as a process for adopting feminist principles through examples from other social science disciplines. In this, we explore the integration of more collective forms of justice via feminist theory and identify lessons we believe are applicable to ecological economics. We conclude by proposing some ways that ecological economics can move beyond the limited scope of justice incorporated in the early framing of ecological economics, and the lack of sustained discourse in its more recent development that have limited the field's ability to address the socio-ecological goals necessary for a sustainable economic system. Ecological economics as a field can learn from the uptake of feminist theory in other social sciences in order to incorporate a collective justice framework in re-envisioning its ethical foundations.

2. Building a Feminist Foundation

When feminism emerged along with the social movements of abolitionists and suffragettes in the late 19th and early 20th centuries, the founders sought to disrupt systems of oppression. The first wave of modern feminist thinking began in France in the 1880s (Offen, 1988), and was inspired in the U.S. in part by the mobilization of women in antislavery campaigns (Marilley, 1996). Changes in women's traditional roles due to industrialization, increased access to education, and broader participation in the public sphere played significant roles in establishing a Western cultural context rooted in the empowerment of women (Buechler, 1990).

While the feminist movement gained momentum in political arenas and made some headway in furthering women's education in the sciences, it was not until the mid-20th century that some in academia took a critical stance on sex and gender discrimination (Crasnow et al., 2015). At this time, women's involvement in higher education was still seen as eccentric and novel, especially in scientific fields (Bix, 2004).

When feminist perspectives finally entered the social sciences more broadly in the 1960s and 70s, this again coincided with social movements such as campaigns for civil rights, reproductive freedom, and environmentalism, inspired in a similar manner to the abolitionist and suffrage movements of the 19th century. The broadening of the feminist perspective included an emphasis on unequal power relations and the recognition of societal needs beyond those of individuals. With the rise of intersectional gendered perspectives that include race, Indigeneity, sexuality, and other factors of identity, feminist thought became focused on achieving collective forms of justice that favor social, economic, and cultural rights over more individualistic, civil, or political priorities (Collins et al., 2010).

While early developments in feminist theory have been commonly characterized as a first wave, developing through the 19th and early 20th centuries, and a second wave through the 1960s and 70s, this description obfuscates a more nuanced evolution of thinking among feminist scholars (Gillis and Munford, 2004). Since the 1990s, the wave analogy has been de-emphasized due to its failure to reflect the varied experiences of women shaped by social and economic contexts around the world. However, an often- described “third wave” characterizes post-Reagan and post-Thatcher movements that highlighted intergroup inequalities and the role of the state in facilitating provision for people as a group, rather than individuals providing for themselves.

Third-wave feminist and so-called fourth-wave or postmodern feminist movements have focused on the differences within gender groups rather than only between genders. Elements of intersectionality theory, postmodernism, poststructuralism, postcolonial theory, and Marxist feminism have all played significant roles in the movements beyond the second-wave (Mann and Huffman, 2005). Multi-dimensionality has become central to these studies, especially concerning the complexity of how gender interacts with other forms of inequality. Intra-group disparities, such as the differences in women's wellbeing based on factors including race, sexuality, and social class, show the uniqueness of individual experience within contexts of differential social power.

Feminist thinking stretches far beyond the so-called “waves” analogy, and we offer here only a cursory overview of this epistemological umbrella. The evolution of feminist theory and scholarship has provided multiple points of contact and overlap with the social sciences, with differing levels of uptake. For example, McIntosh (1983) characterized five phases of curricular revision in higher education from an exclusionary framework toward the full inclusion of women's experiences. First, a “womanless” phase focuses on the perspectives of privileged white males as universal, ignoring other groups. Second, famous women are acknowledged. Next, women are included in analyses as problematic under existing paradigms. Then, in a “women as history” phase, concern for diverse and unique perspectives of women is considered. Finally, a restructured paradigm emerges that rejects hierarchical thinking. These phases touch on different forms of concern for justice, but with a common thread of concern for deep social injustices, rather than injustices that are personal or isolated.

McIntosh's now 35-year-old timeline, however, does not address the type of catalyst needed to start the steps to incorporate collective justice in traditionally individualistic fields or topics. Even if practitioners are acutely aware of the need for a new perspective, they may be at a loss for addressing this if the paradigm they face is inherently unjust or incompatible with systemic thinking.

3. Feminist Theory in the Social Sciences

To focus our discussion on bridging ecological economics and feminist perspectives, it is useful to understand the specific principles that have enabled various social sciences to adopt feminist views. Surveying the emergence and evolution of feminist theory in the social sciences allows us to explore catalysts for change in advancing collective justice as an ethical framework for ecological economics. For example, anthropology is a relative success story, with broad inclusion of women's voices and perspectives across the field. Also, geography is a field where feminist notions were once viewed as radical, but are now a mainstay. Additionally, psychology provides an example of an ongoing struggle over accepting feminist voices, but a promising basis for shifting mainstream thinking. We review these cases in contrast to the field of economics, where the neoclassical paradigm has proved much more resistant to feminist theory.

3.1. Anthropology

Although women have a deep and respected history as researchers

in anthropology (Rupp, 2006), male biases still persisted in the development of the discipline. However, feminist approaches to anthropology have worked to correct androcentric biases in ethnographic and archaeological research (Cook, 1983; Crasnow et al., 2015), resulting in a relative success story among the social sciences in mainstreaming feminist principles.

Stacey and Thorne (1985) attribute this in part to the centrality of kinship (a biological aspect) in the construction of gender, and to the interpretive (rather than positivist) nature of the field. Fertility, for example, is a gendered biological process that cannot be fully understood without the consideration of social reproductive factors concerning marriage, family planning, and infant treatment (Greenhalgh, 1995). Anthropology has also bridged the social and natural sciences through a perspective rooted in biological and earth processes to explain human evolution and behavioral patterns.[1] Greenhalgh (1995, p. 12) describes "holism" as the hallmark of anthropology in "its attempt to achieve broad, multi-angled understandings of the phenomena of interest."

Anatomical and archaeological research have also opened anthropology to a very broad time horizon, allowing for the analysis of changes in men's and women's lives throughout pre-history and in relation to their environment (Cook, 1983). Hodder and Hutson (2003, p. 72) find that the "functional use and environmental features are parts of the process of giving meaning to the world." The feminist perspective has also become a driving force in post-processual or subjective archaeology, which moves beyond the drive for objective conclusions about culture. Studies of sexual divisions of labor and other activities have benefited especially from applications of feminist theories (Engelstad, 1991). Though feminist perspectives are now considered an important piece of archaeological interpretation, Hodder and Hutson (2003) suggest that connections to positivism may have slowed the feminist critique in archaeology compared to other more interpretive areas of anthropology. Archaeologists' understanding of the economy frequently highlights a shift in resource management and lifestyle occurring with the shift from hunter-gatherer to agricultural societies. This shift in the exploitation of nature highlights both humans' reliance upon the earth's resources and the ways that the availability of these resources can shape culture.

Fields with more interpretive approaches, such as anthropology, are seen as more conducive to feminist approaches in general (Stacey and Thorne, 1985). The reflexivity related to interpretive methods and interdisciplinary research in the field has led to a more diverse knowledge base and the ability to bridge gaps in understanding gender relations. In fact, early versions of feminist anthropology sought to rewrite the field's male biases to be more accurate and inclusive in ethnographic and archaeological studies (Cook, 1983; Crasnow, 2006). By focusing in this way, the self-awareness in the field allowed flexibility, reflection, and correction of past mistakes.

3.2. Geography

The field of geography has also been successful in embracing a multidimensional view of women's (and men's) experiences (McDowell, 1992). As Johnson (2012, p. 349) describes, "Geography now takes seriously women's spaces and concerns and conducts research with an awareness of gender while absorbing into its core ongoing developments in feminist theorizing." This "cultural turn" in the field of human geography is attributed largely to the influences of feminist and post-structuralist views (Clifford et al., 2010). As in anthropology, feminist theories grew in this field through criticism of positivist methodologies (Clifford et al., 2010).

In holding the tenet that humans are influenced by their environment and vice versa, geographers have attempted to integrate justice and science through an understanding of the need for distribution of resources and support of rights to maintain social and ecological well-being. Feminist geographers such as Rose (2010) express concern about neoliberal philosophy, since it interferes with social protection and rejects institutional influences on poverty and equity. Explorations of women's relationships with the space in which they live have also been central to the development of feminist geography (Listerborn, 2002; Bondi and Rose, 2003). By exploring these relationships between humans and environment, geographers have incorporated feminist perspectives into the concurrent consideration of ecological and justice issues.

3.3. Psychology

The field of psychology, like anthropology, considers complementary social and biological processes to explain one another. However, ties with biology have led to a dichotomy of science versus practice, in which connections to science are defended by the field due to a desire for legitimacy (Marecek, 2001). In this sense, the discipline of psychology seeks legitimacy through incorporation of biology's positivist methods, which can undermine its ability to incorporate social justice.

Morawski (1994) describes the hurdle of scientific empiricism as a focus of feminist psychologists working to redefine scientific norms in the field to overcome historical biases. This type of research has taken three paths: critical analysis of male biases in research; sex and gender disparities with regard to the role of environment and historic research biases; and the inclusion of women's experiences (Morawski, 1994). Morawski's work shows concern for psychology's reliance upon scientific principles as unchanging and set, while in truth the scientific norms of a field considered "objective" carry the subjectivity of generations of male bias.

Unlike the cases of anthropology and geography, mainstream psychology has historically marginalized justice frameworks, including feminist principles. Although psychologists have questioned and analyzed gender differences since the 1800s (Marecek, 2001), feminist psychology did not emerge until the 1960s. Efforts to fully bring feminist perspectives into the spotlight did not grow significantly until the 1990s (Bond and Mulvey, 2000). At that time, Bohan (1990) suggested that feminist critiques of science and positivism were signs of a feminist reconstruction of psychology. Crawford and Marecek (1989) outline four frameworks used to study women in psychology from 1968 to1988, following a time of "womanless" research: women as exceptional; women as anomalies or problems; psychology of gender; and transformation. Each represents the importance of reflexivity in shifting psychology toward gender inclusion and the need to question the gendered political contexts of science.

Additionally, Lykes and Stewart (1986) found that the incorporation of feminist theory into psychology from the 1960s to the 1980s resulted in an increase in research by women, but without significant changes in methodology. Feminist perspectives were instead mainly confined to feminist rather than general psychology journals. Morawski and Agronick (1991) argue that methodology should not be the sole focus for mainstreaming feminist perspectives in psychology, but rather that epistemological and theoretical challenges must be addressed as well. Methods borrowed from psychology have also been seen in other fields as providing an unnecessary fixation on women's biology and sexuality in contexts where this would not be considered relevant for men. In fact, early on, Lerner (1969, p. 59) pointed out that: "… a great deal of excellent history about men has been written without the author's feeling compelled to discuss his subject's sex life or relationship to his mother in explaining his historical significance. In dealing with women,

[1] It should be noted that biological interpretations of gender are not always feminist. In the field of neuroscience, for instance, gender equality and feminist thought face the challenge of *neurosexism,* which occurs when biological differences between sexes are conflated with cultural and social factors to reinforce long-held gender narratives (Fine, 2010). While biological differences do of course exist between sexes, these differences are often associated with gender stereotypes despite little evidence for this leap.

biographers are impeded by the necessity of dealing first with sex, then with the person."

While this research suggests the field of psychology has not fully incorporated feminist perspectives into the mainstream, promising strides have been made in some sub-fields, especially community psychology (Bond et al., 2000; Bond and Mulvey, 2000; Wasco and Bond, 2010), where paradigm shifts toward the inclusion of feminist theory are well underway (Angelique and Culley, 2003). Struggles for acceptance of feminist principles remain more rooted in the biological foundationalism seen in areas such as clinical psychology, where sex and gender are seen as objective (Marecek, 2001). While not fully mainstreamed, feminist psychologists have long called for a change in methodologies to represent diverse groups of women, reflecting the third-wave feminisms of the early 1990s (e.g., Landrine et al., 1992). Feminist psychology's identification and agreement regarding the reform of scientific empiricism as a place for reform (as described by Morawski (1994)) suggests a path for more broad acceptance of feminist principles.

3.4. Economics

Although the classical economists preceded much of what today is seen as a feminist perspective on justice, some could be considered progressive in their conceptions of social equality. While discussions of gender by Adam Smith focused mainly on women's reproductive importance, John Stuart Mill considered private property inherently unjust, calling for equality between genders in terms of ownership, power, and privilege despite his traditional views on sex roles (Pujol, 1992). Harriet Taylor, contemporary and partner of Mill, could similarly be considered an early feminist, though (along with Mill) she inconsistently promoted patriarchal and individualist notions of capitalism and liberalized economies by attributing injustices to outside forces such as inheritance laws and cultural norms of chivalry (Pujol, 1992).

Despite the potentially collectivist leanings of some classical economists, a methodological break from moral philosophy occurred during the dawn of the neoclassical era of economics via the abstraction of economics processes through mathematics in the late 19th century, which was the beginning of economics as a more isolated social science (Alvey, 1999). Early neoclassical economists such as William Stanley Jevons worked to align the field tightly with mathematics (Schabas, 1990), shifting the discipline toward positivism and deductive reasoning. This break from moral roots and historical observation allowed the field to isolate itself from rich understanding of the contexts that economic models aim to express (Nelson, 2013).

Positivist views of economics, rejecting subjectivity and preference, have also been seen as a departure from the field's roots in moral philosophy (Alvey, 1999). While notable economists including Milton Friedman have associated this turn with objectivity and scientific legitimacy in economics, it has been seen as a major hindrance to the integration of justice and moral frameworks (Stacey and Thorne, 1985; Alvey, 1999). Central to critiques of positivism is the lack of space for multiple voices, particularly those that have been historically marginalized (Dantley, 2002). By rejecting diversity and overlooking power dynamics, positivism contributed to the narrowing of economics toward an individualistic and privileged notion of justice.

As a result of this historic trajectory, the core of mainstream economics, a neoclassical welfare economics model, is now taught and practiced by prioritizing individualism over the field's social and ecological roots. The abstraction of economic systems has stripped away the realities necessary to account for issues of discrimination or power dynamics, leading to the "perfect fiction" of contemporary neoclassical thinking (Pujol, 1992, p. 6). As summarized by Mirakhor (2014, p. 187), "Economics, it seems, flattens consciousness in all its dimensions except one: that of an egoist." As the sum of individual utility is taken to be group welfare, income redistribution and market efficiency are at odds (Hodgson, 2000). In recent years, this prioritization of individual gain and market efficiency has been accused of rejecting compassion and empathy in favor of hedonism and outdated notions of rationality (Brown, 2015).

Through this move toward individualism and unconstrained gain, neoclassical economics has become inhospitable to collective justice frameworks. In particular, the neoliberal political and economic agendas seen today are thought to disrupt social justice, particularly through the promotion of individualism at the expense of society (Brodie, 2007). Feminist scholars have tied this distancing from collective justice to deep male-biased roots, linking mainstream neoclassical thinking to the dualisms of gender and the privileges afforded to masculinity (Nelson, 1992). For example, Pujol (1992) identified six major elements contributing to economics' continued resistance to the collective justice of feminist perspectives: male domination in the neoclassical school of thought; the singular control of the field under the neoclassical paradigm; the narrow and exclusionary range of topics considered in the field; simplification of women's issues; methodological abstraction; and inherent androcentrism. Among the pertinent economic issues explored through feminist thought is the segmentation of labor markets that imposes gender biases on attitudes and opportunities related to work. Beyond this, however, are myriad issues of power and privilege that are explored in feminist thought, not only related to genders (as a spectrum) but also regarding race, class, and other divisions.

Today, the unevenly male influence on economic systems and theory appears throughout academia. Fewer than one-third of economic doctoral degrees are awarded to women, while sociology and life sciences have become far more gender balanced (Fourcade et al., 2015). In 2014, only 15.4% of tenured and tenure-track faculty in 124 Ph.D.-granting economic departments in the U.S. were women (McElroy, 2015). The consequences of a male-dominated field include favoring types of well-being preferred by men over women (Bonke et al., 2007). In addition, gender is often reduced to a binary variable in economic analyses, missing historical developments leading to the segmented divisions in systems such as labor markets (Figart, 2005). Content analyses of economic journal articles, analyzed 25 years apart, both found that article authors were more likely to cite studies by those of their own gender, with men tending to cite men and women citing women (Ferber, 1986; Ferber and Brün, 2011). This bias results in a disadvantage to women in the male-dominated field of economics.

The collaborative and non-exploitative methods prioritized by feminist scholars (McDowell, 1992) also clash with the exclusionary frameworks of neoclassical economics (Jaggar, 2016). By relying upon narrow assumptions about human preferences and the ability to choose them, neoclassical economics closes itself off to addressing issues of equality (Feiner and Roberts, 1990). Many neoclassical economists do acknowledge social inequalities and injustices, but continue to base normativity on positivist theories and notions of exogenous, independent preferences, and thus inherently exclude concern for women, minorities, or other historically marginalized communities (Feiner and Roberts, 1990). It is through these perspectives that a patriarchal Victorian Era attitude toward justice perpetuates in mainstream economics (Pujol, 1995). Notions of an independent, isolated, rational "man", after all, do not reflect most human experience (Meagher and Nelson, 2004).

4. Bringing Feminist Insights into Ecological Economics

The aforementioned social science fields, outside of economics, have incorporated feminist thought through their attention to each field's physical grounding in biology, social space, and place; deep time perspectives connecting the past, present, and future; reflexive, adaptable, and interdisciplinary approaches that contextualize social sciences and power relations; and attention to the complexities of biological and cultural imperatives in human interactions. Ecological economics is not devoid of these characteristics, but it has not honed

them in a way that has allowed the field to engage much with feminist perspectives. Feminist economists such as Mary Mellor (2005), Julie Nelson (2008), and Bina Agarwal (2010) have long argued for social (including intersectional gender) and ecological sustainability to be addressed hand-in-hand, but as with the justice frame more broadly, feminist perspectives and their value and implications have not been understood or incorporated by the mainstream of the field. As with economics more generally, the initial justice orientation of ecological economics has been abstract and unrealistically focused on the individual. To address this gap, and to open possibilities for more dynamic, interdisciplinary, collaborative, and pluralistic analysis, we offer four areas of focus as a starting point to better integrate feminist thought in ecological economics.

4.1. Theorizing Justice

One of the early inertias in formalizing the field of ecological economics was the adoption of a Rawlsian justice framework (Norton, 1989; Penn, 1990). A central component of Rawls' (1971) theory of justice uses the metaphor of a "veil of ignorance" that keeps individuals from knowing where they stand in a social hierarchy. Rawls posits that in a society where no one knows how to take advantage of the system to their own benefit, the individuals will choose fair rules and focus on maximizing the minimum position in hierarchical societies.

Pearce's seminal Pearce, 1987 paper, "Foundations of an Ecological Economics," applies Rawls' "veil" to the idea of intergenerational justice, arguing that an ecologically constrained economy is necessary to ensure fair access to resources over time. Norton (1989) also described intergenerational consequences of Rawls' "veil of ignorance," suggesting that a rational chooser that is ignorant vis-à-vis Rawls' veil would follow a somewhat preservationist approach to resource use. Since this early establishment of Rawls' theories as a central framing of justice in ecological economics, the field has further explored the role of Rawls' theories in terms of wellbeing, including Rawls' "maximin" principle, designed to protect those worst off in a society (see, for example, Dodds (1997) and van den Bergh and Nijkamp (1991)).

Much of this application of Rawls' theory of justice in ecological economics has focused on unsustainability as injustice without examining the social injustice perpetuated by un-"veiled" individuals in a society. Feminist critiques have been particularly strong in rejecting these notions, noting that abstraction belittles the context necessary to understand why inequalities exist in society (Matsuda, 1986; Nelson, 1997). Applications of feminist theory in ecological economics have the potential to ground theoretical conversations surrounding justice, equality, and equity more realistically, especially regarding the distribution of resources and power.

For example, feminist critiques of neoclassical economic abstraction highlight the fallacy of the "rational economic man" (Benería, 2003), the western notions built on hierarchical dualisms and inscribed in gender relations (Nelson, 2003), and assumptions of self-interested behavior and individualism with little regard for the role of cooperative behavior (Benería, 1995; Seguino et al., 1996). If ecological economics is to embrace these critiques, it would necessarily move beyond the individualistic rights frame of Rawls, as well as its abstraction from reality. Abstractions such as Rawl's "veil of ignorance" can obscure the power-laden realities that foster and preserve inequalities. The feminist critique further reveals concerns with positivism and objectivity as inherently gendered notions (McDowell and Sharp, 1999).

Feminist work on justice often begins its discussions by describing situations at the grassroots, with local lived realities, livelihoods, and collective alternative visions. Says Megan Carpenter, "a feminist reconceptualization of justice includes the following characteristics: (1) an emphasis on context while sustaining a commitment to regulative legal principles; (2) an acknowledgment of existent inequalities; (3) consideration of unchosen relationships; (4) an emphasis on mutual interdependence; and (5) a recognition of collective values and societal responsibilities" (Carpenter, 2008, p. 600). Feminist approaches to justice also speak of "the limited and in many cases negative impact of reform framed only in terms of the classic notion of individual equality" (Miles, 1996, p. 47). This implies framing justice concretely and collectively, from the bottom up, not as a top-down abstraction (Watson, 2010). Feminist justice theorists whose ideas may provide useful insights for ecological economists include Judith Butler, Nancy Hartsock, Sandra Harding, Catherine MacKinnon, and many others.

In some ways, a feminist theorization of justice may not be a far stretch for ecological economics. Following Carpenter's (2008) characteristics of a feminist form of justice, we see some common elements with ecological economic thought. Emphasizing mutual interdependence, even with other species, and recognizing social and collective responsibilities are key to many ecological economists' goal of understanding human-earth relationships (e.g. Baumgärtner and Quaas, 2010; Costanza, 1989; Proops, 1989). In some ways, this theoretical ecological economics commitment also considers what Carpenter describes as "unchosen relationships." For example, climate change puts many people in situations of livelihood stress based in ecological crisis which forces new types of interactions with others, both near and far. Greater attention to this aspect of unchosen relationships, as well as underscoring context and inequalities, can move ecological economics toward a deeper understanding of justice within the field's purview.

4.2. Including Reproduction

Another step toward including feminist perspectives would be to move beyond an emphasis on production to explicitly include social and biological REproduction. Feminist theory can aid in the connection of ecological economics with social and biological processes that undergird and transcend markets and are frequently overlooked in economic analyses, as are their social, physical and material constraints over time, space, and evolving cultures. In this transformation, a strong commitment to interdisciplinary practice is required, alongside fields such as biology, psychology, and anthropology.

In a biological sense, the continuation of a society is ultimately reliant on human reproduction to maintain a population. This most fundamental form of reproduction is essential for an economy to exist at all, yet it is given little reverence or acknowledgment in economic discussions. For instance, achieving basic maternal healthcare standards, a necessity to support human reproduction, falls so far short of the needs of the global population that it is the least-achieved Millennium Development Goal (World Bank, 2018).

Social reproduction is similarly undervalued as an economic necessity. Sustained support for a population requires meeting collective needs related to education, health, and dependent care (among many other areas), and these responsibilities tend to fall disproportionately on women. Conversations surrounding the valuation of care work often come down to an oppositional dichotomy of caring versus payment, revealing cultural constructions of unpaid work that shape the benefits and costs of publicly supporting or privatizing reproductive work (Folbre and Nelson, 2000). Economic frameworks proposed within ecological economics have not escaped the undervaluation of care work. For example, Bauhardt (2014) argues that the Green New Deal, Degrowth, and the Solidarity Economy are all implicitly based on social reproduction and women's roles within this sphere.

While some economic perspectives are beginning to incorporate reproductive factors, these often have a long way to go. Just as when ecological economics began to develop ways to incorporate environmental factors into economic analyses, this may take some time. Adjusted Net Savings calculations, for example, include environmental degradation as a negative input for national net savings. The chronically under-valued realm of reproduction is included under education spending as a positive credit to national net savings. However, if underspending in this category were measured similarly to environmental degradation, so that its neglect is a depreciation on national net savings,

this would emphasize its importance relative to other economic factors (Lange et al., 2018). It is important, too, as ecological economists have emphasized, to avoid implying that financial, natural and human capital are easy and direct substitutes for each other—often labeled “weak sustainability”. Reproductive and social caring capacities must be understood and protected in their own right (Folbre, 2001).

Ecological economics offers an opportunity for greater incorporation of reproduction in conjunction with a stronger view of sustainability, yet the field's privileging of the natural sciences and prioritization of scale undermines this. As Hornborg (1998, p. 135) states, “ecological issues and distributional issues are truly inseparable,” yet the typical framing of ecological economics, following Daly (1992), incorporates justice largely in environmental terms with a hierarchy of prioritization where first economic scale must be addressed, then justice, and then finally efficiency. This prioritization breaks from the neoclassical preference of economic efficiency above all, but purposefully privileges environmental over social concerns, at times ignoring their fundamental interdependence.

Explicating both biophysical limits and social choice, in relation to each other, signals a promising first step toward incorporating justice issues in a sustainable economic framework (Wironen and Erickson, 2017). Additional calls for ecological economics to move its understanding of distributive justice toward a communitarian normative approach, focusing on actors as community members rather than as independent individuals, suggests that there may be some interest now in moving away from an individualist perspective (see Brown (2015), Brown and Garver (2009) and Pelletier (2010)). Other movements in the field toward socio-ecological perspectives are characterized by realist perspectives on ecological economic theories, particularly with respect to social construction and relativism, which are seen as oversimplified reductions of society from its whole to its individual parts (Spash, 2013).

4.3. Problematizing Wealth and Power Concentration

A third step toward incorporating feminist thought as a central framing of ecological economics would be to reflect inward to recognize the crucial roles of distribution and power for meeting the goals of scale, distribution, and allocation. Approaches to theory, policy, and governance should address ways of countering concentrations of power, recognizing the value of collectivities and interpersonal relationships over a long-time horizon. Negative feedbacks on individual domination are theoretically central to the sustainability of socio-ecological-economic systems, thus ecological economics should incorporate a community-based, rather than individualist, theory of justice.

Unjust concentrations of wealth have long been problematized in ecological economics, yet the underlying power dynamics that allow this are rarely explored. Justice for “nature,” for instance, has served as an important discussion in the valuation of ecosystem services. Moving beyond a human versus nature dichotomy toward understanding why such hierarchies exist can open these debates to include histories of oppression, racism, sexism, and other forms of injustice that are vital to understanding socioecological relationships. Efforts have already been made in ecological economics to incorporate deeper debates around power (see Van Hecken et al., 2015), yet further momentum is needed to solidify the field's involvement in questioning, problematizing and addressing dominance among humans.

Feminist economics has long explored power dynamics as an underlying factor in unequal access, opportunity, and decision-making ability (see for instance Berik et al., 2009). Because these factors are central to upholding justice, they present an opportunity for ecological economics to focus and concretize its policy approach. Further, ecological economics can build upon this body of feminist work with fresh perspectives on power relations, which dominate landscapes and environments as well as individuals and groups in society. For example, intersectionality—the way that particular identity characteristics interrelate to determine individuals' opportunities and outcomes, as well as the structure of society as a whole—offers a framework for modeling, tracing, and understanding socio-ecological factors and their economic implications, and for developing policies to address inequities. Feminist theorists have developed many such policy-relevant concepts and tools. Participatory action research (PAR), for example, is used to understand intertwined subjectivities that emerge when researched groups are empowered, enabling social policy changes that are informed by those most affected (Fonow and Cook, 2005). Mixed methods approaches, too, are employed by feminist scholars to move beyond a view of the quantitative and qualitative as oppositional or binary, informing policy through multiple lenses (Fonow and Cook, 2005; Hesse-Biber, 2012). These approaches align even with the concept of the patriarchy's resistance to reform and reinforcement of inequities as a rich metaphor for other stubborn socio-cultural tendencies that prevent ecological advances and economic fairness.

4.4. Welcoming Diversity and Pluralism

Finally, polycentric, pluralistic, open, rich, and heterogeneous ideas need to be expanded in ecological economics to counter impulses to revert or default to neoclassical frames and monolithic theories. The incorporation of diverse views reaches beyond feminist theory and can strengthen ecological economic thought by continually innovating and adapting the field to the needs of society and the ecosystem it inhabits. Dedication to broadening theory, research, and policy approaches will require commitment to all of the previously mentioned drivers of incorporating feminist theory in social sciences: connections to biology, a deeper time perspective, reflexivity and resilience, interdisciplinary practice, attention to physical and social space and place, and awareness of the complexities of biological and cultural imperatives in human interactions.

Diversity is not only a social property, but also an ecological value. Cultural and biological diversity form naturally with climatic and geographical differences across the earth's surface, and these forms of diversity evolve together (Bormann and Kellert, 1991; Coleman, 1994; Rajan, 1993). Human diversity also plays an important and largely unrecognized role in protecting plant and animal diversity, particularly for species that are used as food (Rajan, 1993). Ecologists stress the importance of this diversity in providing ecosystem stability and resilience in the face of climatic or other shocks (Bormann and Kellert, 1991). Ecological economics can also be strengthened by diversity by providing space for a range of cultural and academic viewpoints.

For example, Miles (1996) describes integrative feminist visions “of cooperative, egalitarian, life-centered social arrangements wherein the currently devalued, marginalized, and trivialized women-associated responsibilities and values of love and nurturing are the organizing principles of society; wherein differences do not mean inequality and can be celebrated as constitutive of commonality; wherein freedom is found in and won through community; and wherein humanity's embeddedness in nature is not only recognized but welcomed” (p. 144). Such views are deeply linked with ecological economics' goals of responsible economic actions, holistic thinking around social and ecological outcomes, and long-term sustainability.

5. Conclusion

While ecological economics has aspired to hold justice as a central tenet, its discourse on equity has not evolved much over the past decades. It is time to integrate feminist conceptualizations of justice into ecological economics. This would help ecological economists to adapt and develop the field's theories of justice, pay more attention to social and biological reproduction as key elements of sustainability, address wealth and power concentration as a form of injustice, and embrace diversity and pluralism to strengthen the field's grounding. Frustratingly, feminist voices have long been ignored in discussions that

align with the work of ecological economists, despite their relevance and insight (Nelson, 2013).

The fields of anthropology, psychology, and geography have also faced challenges regarding the integration of feminist theory, yet ties to interdisciplinary practices and biophysical realities have allowed for the adoption of collective justice frameworks within their respective mainstream schools of thought, by including feminist principles. Feminist, social, ecological, and socio-ecological approaches all provide space for collective justice in economics by broadening focus to include social equity and environmental concerns, yet these views remain largely on the fringe of economic thought. Even with increased acceptance of feminist principles and concerns for justice in the social sciences, this remains an ongoing struggle, and the belief that feminist issues have been "solved" is not only incorrect, but potentially harmful to future research and thought (Johnson, 2012).

If the field of ecological economics truly seeks to include equity as a core component and means of living well within a bounded earth system, the time has come to evaluate how we understand justice and its implications for all aspects of ecological economics. In order to accomplish this and affect mainstream economic thought more deeply, ecological economics as a whole must revisit its own roots in moral philosophy and bridge to more contemporary, intersectional and gendered social critiques of power and privilege, as well as the biophysical realities of reproduction, production, distribution, and consumption. Ecological economics is not a monolith, and must evolve in its treatment of equity and justice, as many social sciences have, or risk irrelevance and obsolescence in an area central to its core principles.

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