

DOHaD in Economics

Orthodox and Egalitarian Approaches

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7.1 Introduction

The Developmental Origins of Health and Disease (DOHaD) is now an established area of inquiry in the economics discipline, cutting across subfields like health and demographic economics. Orthodox economists increasingly use econometric methods to make the case that individual-level epigenetic changes have measurable impacts on labour market outcomes. While some literature seeks to document disparities in health outcomes, most economic research considers the effects of health or economic shocks on educational attainment, employment, and wages. This focus on ‘nonhealth endpoints’ is guided by assumptions and definitions in orthodox economic thought that direct attention to concerns typically – or ultimately – related to market outcomes.

A wide range of *unorthodox*, egalitarian approaches within economics could contribute to DOHaD by integrating social forces, social structures, and social inequities. These approaches consider the origins and impacts of hierarchical power relations between groups. Compared to orthodox economists, egalitarian economists typically have a broader understanding of what an economy is and what an economy is for. Some view economics as the study of provisioning life or as the reproduction of society itself [1–3].

Differences between orthodox and egalitarian approaches are especially pronounced in analyses of the reproductive economy, an area of thought and policy relevant to DOHaD research. In orthodox economics, DOHaD research signals renewed interest in reproduction, but reproduction never fully disappeared from orthodox economic thought. Optimising economic outcomes through intervening in reproduction underlies eugenic research in economics, population control and ‘family planning’ in economic development, and DOHaD [4, 5]. The *work* and *function* of the reproductive economy, although essential for DOHaD, continue to attract little attention.

Some egalitarian economists highlight the critical roles of both. Reproductive labour includes the care work, housework, and other tasks associated with reproducing human life on a daily and intergenerational basis. Much of the work is unpaid. Functionally, production fundamentally depends on this unpaid labour, which reproduces the labour supply [2]. Despite its obvious economic importance, in the twentieth century, unpaid reproductive labour was defined outside of the boundaries of the mainstream economics discipline [6, 7]. This historical erasure of women and their economic contributions devalues women and the work they do, with material ramifications among other costs. Like the labour itself, economic research about it remains undervalued and marginalised in the discipline [6].

Hence, a resurgence of interest in reproduction by orthodox economists could be heartening. Yet when orthodox economists have been interested in reproduction

historically, women have been instrumentalised in efforts to optimise economic outcomes such as gross domestic product (GDP) growth or income per capita by controlling reproduction. While women's 'maternal capital' [8] is sometimes recognised as playing a role in the creation of future value (e.g., offspring's wages), women themselves tend to be reduced to fetal environments, characterised as instruments of reproduction rather than as fully human people with valued lives.

Following a review of the literature, I demonstrate how egalitarian economic thought could usefully be brought to bear in DOHaD research, first by identifying weaknesses in the orthodox approach; second, by integrating social and historical context; and third, by suggesting areas for novel, socially grounded, collaborative DOHaD research. The egalitarian analysis indicates that richer understandings of social determinants of health could be a key contribution of DOHaD research. Egalitarians' sophisticated understanding of social structures and constructed categories can situate DOHaD in a real-world context. I conclude that egalitarian approaches can address a critique of DOHaD research both inside and outside economics: the failure to adequately integrate social structures. The analysis reveals the real-world risks of this failure for women and girls, linking DOHaD literature to political debates about 'fetal personhood', women's autonomy, and gender inequity.

7.2 DOHaD in Economic Research

To date, DOHaD-related empirical studies in economics take two main forms. One set attempt to document the effects of exposure to shocks, such as new access to medical technologies like antibiotics or adverse events like famines, epidemics, or recessions [9–12]. Many studies link women's bodies (as in utero environments) to offspring's childhood health or later-life outcomes. For studies in which health outcomes are dependent variables, health is a thing produced (an output) as a function of health investments (inputs) at different developmental stages of 'childhood' [13]. For example, some studies examine health outcomes such as adult height, a proxy for nutrition [14]. The second set of studies consider the efficacy of interventions to mitigate the detrimental effects of adverse events or social determinants of health, from public policy to micro-level service delivery [15]. This brief review of the literature focuses on the former studies as these are common in economics and can be foundational to the latter.

A distinguishing characteristic of economic research in DOHaD is the use of outcome variables aligned with most economic research: educational attainment, paid employment, and wages. According to Almond and Currie's original review of the DOHaD literature, the addition of 'nonhealth' endpoints is one of four major contributions from economics [16]. The other three contributions are (a) novel identification strategies for working around data availability issues, (b) the variety of exposures modelled, including infectious disease, pollution, and recessions, and (c) the argument that studies that focus on survivors are likely to find weaker relationships than they would if data accounted for those who did not survive. Conti et al. identify contributions from economics as 'rang[ing] from developing theoretical frameworks, to establishing causality, understanding mechanisms, and also computing costs and benefits of early interventions' [16].

The theoretical basis of nonhealth-endpoint studies is human capital theory [17]. Human capital is typically understood by orthodox economists to mean education. The

definition in the literature is more expansive. Conti et al. describe human capital as ‘...the intangible stock of knowledge, skills, personality, and other attributes – including health – that produce economic value in the life of an individual’ [15]. The economic model is an equation called a production function in which the thing produced, the output, is human capital. There are two periods of investment in the model discussed by Almond et al.: the in utero period of ‘childhood’ and the ‘second period’ of childhood [18]. In orthodox economic thought, human capital is the theoretical link between exposure to adverse events/shocks and wages: exposure impacts human capital that determines productivity, which in turn determines wages. Hence, for most economists, human capital is a key explanatory factor for labour market outcomes like wages – and wage inequality.

Empirically, the relationship between human capital and wages holds in general, but it does not hold for all people in all occupations. Where the relationship is present, its strength varies by demographic group because social inequities by race, gender, and disability status intervene. Racism, sexism, and ableism are oppressive systems of social relations that construct glass ceilings, glass elevators, and other impediments that constrain (or enable) advancement and mobility. For example, returns to human capital investment (education) have historically been lower for Black¹ people in the United States due to racial segregation [9]. Almond et al. note that long-run benefits of investment in human capital vary for Black men exposed to different degrees of segregation, ‘...suggesting that despite a strong economic climate (better early life conditions), institutional environment affects the rewards to investments in human capital’ [18]. The institutional environment encompasses systems of social relations like racism, sexism, and ableism. Those systems can translate into inequitable ‘returns to investment.’ Institutional economics and related egalitarian approaches have much to offer such analyses.

Orthodox and egalitarian thoughts about labour markets and wages differ considerably. In orthodox economics, *occupational* segregation, or the concentration of certain demographics in certain occupations, is the result of individual investments in human capital. In other words, occupational segregation is interpreted as the result of freely made individual decisions. The orthodox explanation for occupational segregation by gender and women’s lower earnings is that women choose to invest less in education or skills valued by employers and seek out jobs where experience plays little role in pay because they expect employment to be intermittent, due to their *reproductive responsibilities* [19, 20].

In some egalitarian approaches, gendered value systems and gender roles condition individual preferences, and gender discrimination crowds women into a subset of feminised occupations [21, 22]. Discrimination limits economic opportunities for the

¹ The term Black is often used interchangeably with ‘African-American’ in the United States. ‘Black’ primarily includes American descendants of slaves as well as other people who identify as Black such as Afro-Caribbean people and African immigrants. Racial segregation in the USA was implemented in the post-slavery period de facto and then through Jim Crow Laws formally passed in 1877. It was enforced in some US states up to the mid-1960s when the US Supreme Court ruled that racial segregation was unconstitutional. Polls (e.g., Gallup) indicate that Black adults have a slight preference for ‘Black’. I follow the convention from the Associated Press by capitalising the term.

majority of the population – underrepresented men and women of all races – while restricting competition in occupations available to the minority [23]. Benefits for men include reduced competition for well-paid jobs and skilled employment in sectors that have historically been closed to women, such as economics and STEM fields [6, 24]. Directly related disadvantages for women include economic insecurity and a relatively weak ability to pursue divorce or to save for retirement.

Another explanation is that occupations become feminised *because* the people doing the work are themselves of low status [25]. Feminisation is a demographic process in which the proportion of women in an occupation rises, but it is also a process of devaluing those occupations as women enter them [6]. Evidence suggests that feminisation has a causal relationship with low pay and low status; hence, men have historically resisted women's entrance into higher education and male-dominated occupations [26]. Conti et al.'s definition of human capital as knowledge, skills, personality, health, and other attributes '*that produce economic value in the life of an individual*' offers some insight into the relationship between feminisation and value, economic and otherwise (emphasis added) [15]. In societies with gendered value systems in which women and men are valued inequitably, skills stereotypically associated with femininity and masculinity also tend to be valued inequitably [6]. Thus, some skills contribute far more than others to the economic value one's life may hold. Finally, the same skill may be valued in male workers and penalised in women workers.

In summary, orthodox economists brought later-life labour market outcomes into DOHaD research, which they connect to health through human capital theory: investments in human capital should have positive returns in the form of higher wages. However, as egalitarian economists point out, systems of social relations like racism and sexism generate inequitable 'returns to investment'.

This brief consideration of human capital theory reveals why social context matters in DOHaD literature. First, it is necessary for understanding existing economic analyses in which outcomes may be misinterpreted as the result of freely made individual-level choices. Egalitarian schools of thought, such as social economics, feminist economics, stratification economics, critical political economy, and institutional economics, draw insight from rich theoretical and practical understandings of the social context in which individuals make decisions. Egalitarian research offers historically grounded analyses of the origins and reinforcement of social structures. For example, feminist economists demonstrate how structural inequalities create gendered outcomes and explore how gender shapes understandings of economic activity [6, 7, 21, 22]. Some, especially women of colour, use intersectionality to describe how hierarchical social relations combine [27]. Institutional economists focus on evolving systems of power in which institutions coordinate economic behaviour, while social economists consider the ethical consequences of complex social interactions [28]. Stratification economics provides analyses of group-based inequality and is the product of research by Black economists [29].

Second, social context is also requisite for designing public policy to address the *causes* of inequitable *outcomes*. Egalitarianism contains justice-oriented guidance for policy and interventions because integrating power relations into analyses widens the scope for seeking social solutions to social challenges. Lastly, placing analyses in a social context may prevent the misinterpretation or misuse of DOHaD research for racist or sexist purposes.

In the remainder of the chapter, I demonstrate the usefulness of egalitarian thought in DOHaD. In Section 7.3, I make visible how the marginalisation of women's labour and, historically, of women's economic research contributes to the dehumanising instrumentalisation of women in orthodox economic research in DOHaD. The following section suggests that DOHaD could contribute to research on determinants of health, but its current contribution is limited by a narrow focus on molecular factors and uncritical use of demographic variables. I bring these points together in a short exploration of some real-world risks of dehumanising instrumentalisation for women and girls, linking DOHaD literature to political debates about 'fetal personhood', women's autonomy, and gender inequity.

7.3 Economic Orthodoxy and Reproduction

Most economists exhibit little concern about the unpaid reproductive labour typically done by women, like cleaning, cooking, and raising children, among other tasks [2, 22, 30]. Still, it is women's perceived responsibility for reproductive labour that links gender roles/norms to economic outcomes. The social expectation that women are responsible for the unpaid reproduction of life has economic consequences for women and men:

[W]omen are less likely to [do paid] work, they earn less than men for similar [paid] work, and are more likely to be in poverty even when they work [for pay]. Women spend almost twice as much time on housework, almost five times as much time on childcare, and about half as much time on [paid] market work as men do [30].

Women's unpaid work has been defined out of the economics discipline theoretically, professionally, and empirically through decisions made by powerful actors in the field. In economic theory, disciplinary boundaries are established and enforced through gendered interpretations of value that treat unpaid work as a 'non-economic' activity [6]. Activities that are monetised are included on one side of this 'arbitrary line', while those 'services gratuitously rendered by women' are not [31]. Professionally, a process of 'defeminization' of the discipline took place in the early twentieth century, excising the study of the household by women economists [32]. Empirically, official state-based recordkeeping, such as the United States Census, excludes unpaid labour [7, 33]. The decision to exclude unpaid work from GDP was made by Richard Stone in pursuit of a 'universal method' against the advice of Phyllis Deane, a woman economist Stone hired to study the method's accuracy in colonial territories [33]. Despite critiques by Deane and the only two women on international committees on national income statistics at the time, Hildegard Kneeland (League of Nations, 1947) and Margaret M6d (United Nations, 1968), the method was promoted globally and widely adopted [33]. GDP is among the most commonly used pieces of economic information about a given country; 'economic growth' refers to a positive change in GDP.

The gendered method of calculating GDP and the gendered definition of value reinforce a hierarchical gender division of labour: monetised, valued labour associated with masculinity and the 'public sphere' termed 'production' is at the top, and non-monetised, devalued labour associated with femininity and the 'private sphere' is at the bottom. The division is informed by *productivism*, a bias that privileges monetised economic contributions, one aspect of reproducing life, over others. The gender division of labour and associated value judgements are so naturalised that they inflect the definition of what 'The Economy' is; what activities it includes, both popularly and according to most economists; and the ends of economic activities. It is deeply embedded

in economic thought, with implications far beyond the discipline because of the influence economics and economists have on policy [6].

Women's unpaid labour is the foundation of the reproduction of society on a day-to-day basis and intergenerationally. The term 'labour', as in 'going into labour', connects biological/physiological reproduction and the uncompensated work of social reproduction. There can be no production without the reproduction of life itself, including that of those in the paid labour force. If production is understood to constitute '*The Economy*', then there is no '*The Economy*' without women's reproductive labour. Given this history and its negative effects on women materially and in terms of social status, orthodox economists' newfound interest in reproduction could be welcome: it presents an opportunity to take the value of women's reproductive labour seriously.

Historically, however, economic research on reproduction has embraced optimisation strategies that instrumentalise women. Eugenic projects sought to improve 'the race' with policy interventions like forced sterilisation that primarily targeted women, especially women of colour, in developed and underdeveloped countries from the United States to Sweden to Bangladesh as recently as 2020 [34, 35]. Forced sterilisation was thought to 'improve the race' in part by controlling population growth and therefore raising economic output (measured as GDP per capita). In this dehumanising project, women are reduced to instruments for economic growth.

DOHaD research in economics has often in similar ways emphasised the optimisation of economic growth, mainly by proposing forms of intervention in women's lives. Critically, optimisation is framed in economic terms with effects on knowledge production beyond the discipline: scholars point to the "growing adoption of economics" "cognitive infrastructures" or "epistemic infrastructures" in global health governance [8]. DOHaD studies often employ economic language, framing economic benefits as 'resource savings' in the form of reduced child deaths, reduced morbidity, and the savings from potential adult chronic disease [8, 36]. Authors also find *returns on investment* in the forms of increased worker productivity, school attendance and achievement, and better employment in the future [36]. The economic logic driving some epigenetic research finds its rationale in human capital and the future earnings of fetuses.

Economic thought, in which economic ends dominate other possible commitments, such as equity and justice, is enormously consequential. Some DOHaD research constructs women as vessels that [should] act in the interest of potential future progeny, a normative position that violates basic premises of orthodox thought. In some studies, the 'future value' of fetuses appears to take precedence over the value of actually - existing women, whose preferences are unaddressed. Women's autonomy - especially that of women of colour - may carry relatively little weight in studies that prioritise economic growth over justice (see Section 7.4.2.1). As Chiapperino and colleagues discuss in this volume, this introduces a set of moral paradoxes for DOHaD.

7.4 Egalitarianism in Economics and DOHaD

The critiques of (a) the devalorisation of women's reproductive labour and (b) of the dehumanisation and instrumentalisation of women in Section 7.3, and the implications that I explore below, exhibit the kind of historically grounded, socially informed insight that egalitarian economists can bring to DOHaD research. The analysis here makes two main points: first, it demonstrates how DOHaD research could contribute to more

complete understandings of social determinants of health. Egalitarians integrate social context and can steer DOHaD analyses away from biological and/or cultural essentialism. Second, it shows how reducing women and girls to instruments of reproduction reinforces gender inequities.

7.4.1 DOHaD and Social Determinants of Health

A key contribution of DOHaD research could be in providing better explanations of existing social inequities and informing policies to address their causes. In contrast to imagining ‘utopian visions of where life can be remade and further harnessed for economic gains’ through technological innovations, this information could help make unjust social forces the primary targets for policy [36]. However, a common critique is that DOHaD literature, and a great deal of published research in economics, fails to integrate social forces, social structures, and social inequities [37]. Additionally, and related, some scholars criticise DOHaD research for endorsing biological and/or cultural essentialism [38]. Socially oriented economic research helps address these critiques through the theoretical and practical recognition that social variables reflect systems of social relations, not individual characteristics.

Racism and sexism are critically important determinants of health, including maternal, infant, and child health [39–41]. Notably, it is *racism*, not race, and *sexism*, not gender, that are social and structural determinants of health (SDH). The SDH are the systems of social relations that reinforce hierarchies of constructed categories to the detriment of people at the bottom of those hierarchies – women, people of colour, LGBTIQI people, and those with disabilities – and benefit those at the top.² Variations across groups, such as disparities in health and other domains, largely reflect social dynamics and relations of power. DOHaD research may find disparities in outcomes, but the *origins* of those disparities are social.

One review of how empirical epigenetic studies integrate SDH began with 337 studies of social exposures ranging from low socio-economic status (child and/or adult), early-life adversity, to workplace or neighbourhood exposures, and adult DNA methylation [37]. Of those, over 115 studies included race or gender as variables *without an explanation of the social exposures the variables represented*. In other words, one-third of the studies misrepresented social categories as biological traits. To contribute to research on SDH, researchers must recognise that demographic variables serve as proxies for hierarchical power relations. Some scholars argue that researchers must try to measure the social structures and processes that result in the inequitable group-level distribution of resources [37].

Social determinants of health are widely acknowledged as primary determinants of health that encompass inequities resulting from social structures [39]. By collaboratively theorising and documenting the impacts of SDH, DOHaD research has the potential to shed light on the persistence and costs of *inequities*. Inequity is conceptually distinct from inequality; inequities are recognised as ‘unfair or stemming from some form of

² The corresponding power relations to those listed are patriarchy, white supremacy and anti-blackness, heteronormativity, and ableism; discrimination may be based on [perceived] gender/gender identity, [perceived] race/ethnicity and related identities, [perceived] sexuality/sexual orientation, and disability status. An intersectional approach requires consideration of multiple, interacting hierarchies [42].

injustice' [43]. Economistic logic that prioritises economic growth may preclude alternative logics like the pursuit of equity and justice. Orthodox scholarship in economics does not typically centre these pursuits due to the economism that guides research. Theory, methodology, and foci can be path dependent, meaning that existing literature defines the future trajectory of research because scholars use it as a foundation, making it easier to publish related work and build the literature. These are nonetheless decisions made by researchers who could opt for alternative, egalitarian approaches.

There are substantial risks to the limited exploration of social structures. First, scholars may overemphasise findings that add little explanatory power beyond that of existing social systems. For example, based on animal models, Almond et al. conclude that 'it is highly likely that changes in the foetus or young child could be passed on to the next generation. This type of mechanism could offer *an additional reason* for the intergenerational persistence of poverty, and for the existence of poverty traps...' (emphasis added) [18]. The authors do not identify the *other* reasons for the persistence of poverty, but presumably they include the myriad social factors that reproduce poverty. In comparative terms, the impact of an additional, potentially epigenetic effect in an explanation of the intergenerational persistence of poverty is probably marginal. As articulated in Almond et al. and elsewhere in published DOHaD research, this type of conjecture overstates the likely impact. Such emphases can give the misguided impression that there may be individual-level solutions to social inequities.

Second, a small impact may still be worth investigating, but scholars often combine potential epigenetic mechanisms with social variables like race and gender. Without acknowledging that those variables are proxies for racism and sexism, analyses are open to misinterpretation – scholarly and popular – as identifying biological or cultural 'deficiencies' in certain gendered and/or racialised groups.

Instead of contributing better explanations of existing social inequities, a narrow focus on molecular factors combined with an uncritical use of social variables risks making inequity-generating social structures and their unjust consequences *less* visible. The gender division of labour is a core element of the social structure that reinforces gender inequities. The next part of Section 7.4 explores some real-world risks of the failure to integrate social structures into analyses. More specifically, it describes how reducing women and girls to instruments of reproduction reinforces gender inequities.

7.4.2 Instrumentalisation of Women and Girls: Gender Inequities

Egalitarian approaches reveal the ways that policies, interventions, and language can reinforce inequities. Egalitarian economists offer socially aware insight and may identify alternatives. In this analysis, by locating policies/interventions/language in a real-world social context, feminist political economy elucidates some stakes of DOHaD research for women and girls. I describe two ways that the dehumanisation and instrumentalisation of women and girls contribute to gender inequity: (a) limitations on women's autonomy and (b) the high costs of emphasising women-as-mothers vis-à-vis the low value of reproductive labour covered in Section 7.3.

7.4.2.1 Restrictions on Women's Autonomy

Women's dehumanisation is not an abstract danger. Some DOHaD literature is consistent with rhetorical and legislative strategies of pro-life political groups, which have

‘transformed their framing of the abortion issue, from one that pits foetal rights against maternal rights to one that emphasises the unique and intimate bond between the woman and the “child” [44]. In human capital models in the DOHaD literature, a zygote, embryo, and fetus – stages of in utero development – are described as part of ‘childhood’ (e.g., [18]). Thus the DOHaD literature overlaps with political debates about ‘fetal personhood’ and women’s autonomy.

For example, personhood laws in the United States have sought to establish fertilised eggs, embryos, and fetuses as entities with rights independent of those of a pregnant person [45]. The 1973 Supreme Court decision in *Roe v. Wade* ‘explicitly rejected the claim that foetuses, even after attaining viability, are separate legal persons with rights independent of the pregnant women who carry, nurture, and sustain them’ [45].

Hundreds, perhaps thousands, of women have nonetheless been arrested and prosecuted for ‘crimes’ against fetuses in the period between 1973 and 2022. Between 1973 and 2005, there were 413 such cases in which women were deprived of freedom through arrests or forced medical interventions [45]. Almost three-quarters of those women were African American [45]. Judges, juries, prosecutors, healthcare practitioners, and social workers have all represented the purported interests of fetuses at the expense of women’s physical freedom. For orthodox economists, gender-specific constraints on women, and the treatment of women’s preferences more generally, present theoretical, methodological, and practical challenges. Of further concern for DOHaD scholars should be the fact that criminal charges were typically based on the *risk of harm* without evidence of harm. The 2022 Supreme Court judgement overturning the 1973 *Roe v. Wade* decision brings these issues to the fore.

7.4.2.2 Women-as-Mothers and the Low Perceived Value of Reproductive Labour

Feminists in economics have long been deeply concerned about economic research that simultaneously reduces women and girls to instruments for productivity and economic growth and assigns them responsibility for the same. For example, microcredit schemes target women as sources of social capital based on gender stereotypes (i.e., cooperation) [46]. Reducing women and girls to their reproductive capacities similarly instrumentalises them as containers of ‘maternal capital’. DOHaD research inside and outside economics adopts the language of ‘capital’: health capital, human capital, maternal capital, somatic capital, cognitive capital, resource capital, and offspring capital all appear in the literature [4, 8, 16, 47]. The language places responsibility on individual women for accruing and maintaining their ‘maternal capital’ during potential childbearing years. For most women, this accounts for half of their lifetimes, starting prior to adulthood, sometimes as early as six or seven years old [48]. As Currie recognises in an interview, this implies a shift in the logic of intervention:

It really means you should be targeting a whole different population than, say, 15 years ago, when we thought, Oh, we need to be targeting preschool kids instead of kids once they reach school age. Now we’re kind of pushing it back . . . *Now the implication is that we’ve got to reach these mothers before they even get pregnant if we really want to improve conditions.*

(emphasis added) [8]

Any such effort to reach ‘potential mothers’ would likely need to cover half of the general population over time. Yet most DOHaD literature does not target that half of the population *as* women or girls; it targets them as potential fetal environments. Imagining

all women and girls as ‘mothers’ reduces them to their reproductive role, overvaluing the fetal environment and undervaluing the people embodying it.

The emphasis on women-as-mothers has ramifications in other domains. Gender roles in reproductive labour link framing women-as-mothers and material and social impacts. I argue elsewhere that constructing women-as-mothers contributes to gender disparities in pay [6]. That is, gender inequity contributes to gender pay gaps, including those related to occupational segregation. In turn, pay gaps contribute to women’s economic dependence on men and penalise single women by making it more difficult to save for a down payment for a home or to save adequately for retirement.

The reduction of women to instruments of reproduction is a disciplinary mechanism with material consequences. It imagines dependent children and responsibility *even where none exists* to a punitive effect in the labour market. Critically, DOHaD’s concern with maternity is not likely to do women any favours materially without a dramatic shift in the perceived value of reproductive labour.

7.5 Conclusion

Orthodox economists brought later-life labour market outcomes into DOHaD research, which they connect to health through human capital theory: investments in human capital, including health, should have positive returns in the form of higher wages. However, systems of social relations like racism and sexism are sources of inequitable ‘returns on investment’. Further, inequity-generating social structures and their unjust consequences are made *less* visible by research that uncritically uses social variables. The gender division of labour is part of the social structures that reinforce gender inequities.

Reproductive labour, and who is believed to be responsible for this low-status, poorly paid, and unpaid work, is key to understanding persistently gendered and racialised inequity. Social structures that devalue women and ‘women’s work’ are institutionalised in practices like gender-based discrimination in the labour market. Women are discriminated against in the labour market *because* of their perceived responsibility for reproductive labour (i.e. because of gender roles). Women are obviously more than instruments of reproduction but have been instrumentalised in the interest of optimising economic outcomes. DOHaD research continues this tradition, but it does not need to.

Many opportunities remain in the field for ‘exploring structural factors that capture intersectional and interlocking systems of oppression’ [37]. Egalitarian economists are well equipped theoretically and methodologically for analyses of social structures and oppressions. Many of the people conducting equity-oriented research in economics are members of underrepresented groups and have related experiences that inform their research. Those experiences can be sources of insight from which a diverse group of economists develop economic theories that better reflect power dynamics in the social world.

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