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Economics for people and planet—moving beyond the neoclassical paradigm

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Despite substantial attention within the fields of public and planetary health on developing an economic system that benefits both people's health and the environment, heterodox economic schools of thought have received little attention within these fields. Ecological economics is a school of thought with particular relevance to public and planetary health. In this article, we discuss implications of key ecological economics ideas for public and planetary health, especially those related to critiques of gross domestic product as a measure of progress and economic growth as the dominant goal for economic and policy decision making. We suggest that ecological economics aligns well with public health goals, including concern for equality and redistribution. Ecological economics offers an opportunity to make the transition to an economic system that is designed to promote human and planetary health from the outset, rather than one where social and environmental externalities must be constantly corrected after the fact. Important ideas from ecological economics include the use of a multidimensional framework to evaluate economic and social performance, the prioritisation of wellbeing and environmental goals in decision making, policy design and evaluation that take complex relationships into account, and the role of provisioning systems (the physical and social systems that link resource use and social outcomes). We discuss possible interventions at the national scale that could promote public health and that align with the prioritisation of social and ecological objectives, including universal basic income or services and sovereign money creation. Overall, we lay the foundations for additional integration of ecological economics principles and pluralist economic thinking into public and planetary health scholarship and practice.

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Introduction

A health-promoting and environmentally sustainable economy is a key priority for population health and the emerging field of planetary health.[1,2] The current economic system is a major driver of climate change and biodiversity loss, both of which pose substantial threats to human health.[3–5] At this crucial time for humanity, when no country is meeting the basic needs of its residents at a globally sustainable level of resource use,[6] and no country is on track to do so,[7] we highlight the relevance of pluralist economic approaches, in particular ecological economics, to public and planetary health.

The relationship between health, the economy, and the environment is far from straightforward and is strongly influenced by the way the economy is structured and run, which, in turn, is shaped by the ways that the economy is understood. Economic theory is therefore highly relevant to understanding health and social outcomes. Research has begun to explore the three-way relationship between health, the economy, and the environment.[6,8–12] Reviews have summarised economic factors and policies that influence population health and health inequalities, such as aggregate economic activity, income inequalities, economic crises, and taxes and welfare provision.[13–16]

Achieving national economies that benefit health and the environment is complicated by current major trends and events, such as automation[17] and COVID-19,[18] which could bring substantial disruption and unpredictable change across society.

Public health professionals, who are interested in the root causes of population health, have long recognised the importance of welfare systems and, more recently, have begun to incorporate broader approaches to economic policy into work to improve health and reduce inequalities.[19,20] Given the continued dominance of neoclassical economic thinking, and the relevance of many alternative schools of thought to public health, we aim to introduce some of these schools of thought to a public health audience with a particular focus on the transdisciplinary field of ecological economics.

Our focus is on the implications of national economic policy as a major determinant of public health.[19] We aim to provide a short and accessible discussion of key ecological economics concepts and debates, outlining why they are relevant to public health and pointing to additional resources to support public health professionals in policy, practice, and research. We start by critiquing neoclassical economics and contrasting it with some alternative schools of thought that are relevant to public health research and practice. We then cover economic discourses, objectives, and interventions. Finally, we draw out the implications of ecological economics for public and planetary health.

Economic theories and schools of thought

Economic theories are the lenses through which the economy is understood, and they shape the discourses that are used to describe such an understanding. Economic theories also have implications for the types of economic objectives pursued, interventions to achieve these objectives, and the change processes preferred.

Neoclassical economics is generally considered to be the dominant economic paradigm today.[21] The central principle of neoclassical economics is that we need to allocate scarce resources efficiently.[22] Neoclassical economics seeks to achieve Pareto efficiency (ie, a situation in which nobody can be made better off without others being made worse off).[21] Pareto efficiency is one

reason for the pursuit of economic growth, which is argued to improve living standards for all, rather than redistribution, which would improve the lives of people who are poor at the expense of people who are rich.[23] Although the preferred mechanism for achieving the efficient allocation of resources is the free market, many strands of neoclassical economics (eg, New Keynesian economics) accept that some government intervention (eg, in the form of fiscal policy) is necessary at least in the short term to avoid recessions and deflation. A core focus of much of neoclassical economics is growth in gross domestic product (GDP), which equates to increasing consumption.[21,22] Mainstream economic thought tends to regard economic growth as a driver of increases in life expectancy across the world. However, although economic growth has been associated with gains in life expectancy,[24] the extent to which the relationship is causal is unclear and the relationship is weaker in high-income countries than in low-income countries.[25]

There are numerous critiques of the neoclassical economics paradigm.[26,27] In relation to environmental issues, some critiques highlight its focus on the need for increasing consumption of goods and services (which causes degradation of the environment, over-use of natural resources, and increased pollution) to achieve wellbeing, rather than reaching a point of satiation in which needs are met and people can live well.[28] The free market focus has also been widely criticised, as the existence of widespread market failures is well recognised.[29–31] Proponents of neoclassical economics consider that market failures can be fixed by correcting sources of market failure (eg, by regulating monopolies, assigning property rights to public goods, and taxing or compensating for externalities).[21] However, critics argue that market failures are endemic in the current system—a natural side-effect of continuously increasing production and consumption.[32] Correcting such market failures is difficult because they increase with economic scale.[33]

A diversity of thought has emerged that challenges the assumptions underpinning mainstream economics.[34] The alternatives to the mainstream are often referred to as heterodox or pluralist economics approaches. Here, we provide a short overview (panel 1) of some of the approaches that offer alternative perspectives on ways in which the economy functions and how it should be governed, before considering ecological economics in more detail. For a more thorough discussion of alternative economic perspectives, please see the Exploring Economics website, which provides resources for learning in more depth and compares different theoretical perspectives.

For more on **Exploring Economics** see https://www.exploring-economics.org/en/

Economic discourses

Discourses centred around economic growth

Inspired by Bacchi,[40] we consider discourses as representations of problems and their proposed solutions. Economic discourses are social constructs outlining how stakeholders discuss and frame the path ahead, and they are shaped by theoretical standpoints. In this section, we provide a brief summary of discourses focusing on economic growth (broadly linked to the neoclassical perspective) and those focusing on sustainable human wellbeing (from an ecological economics perspective).

Various discourses have emerged that aim to change the nature of economic growth, including proposals to make it more inclusive (inclusive growth)[41,42] or to make it more environmentally friendly (green growth).[43] Inclusive growth does not challenge the centrality of GDP growth as an economic objective but aims to ensure its perceived benefits are distributed more fairly. Many writers have highlighted the absence of clarity around what the inclusive growth discourse means and how possible it is to achieve (see for example Lee).[44]

Green growth proposals focus on increasing economic output while reducing its effect on the environment, which requires decoupling. The basic idea of decoupling is to break the link between GDP growth and its environmental impacts (eg, through efficiency improvements, new technologies, or better pricing). An important distinction is between relative decoupling (ie, emissions or resource use still increase, but less so than GDP), and absolute decoupling (ie, emissions or resource use fall while GDP increases). Although there is evidence that relative decoupling has occurred in some economies, there is very little evidence of absolute decoupling. Generally, absolute decoupling only occurs when GDP growth rates are quite low (no more than 1–2% per year).[45]

A recent systematic review concluded that the rapid reductions in emissions and resource use that are needed for sustainability cannot be achieved with observed rates of decoupling.[45] Decoupling in wealthy countries is often simply the result of offshoring environmental burdens to poorer nations. Moreover, the success of decoupling tends to be limited by factors such as the rebound effect (ie, increases in consumption negate any efficiency gains made).[46–48] It has therefore been argued that a shift towards strategies of sufficiency is needed instead.[45] This shift would involve limiting resource use to what is needed to meet people's needs and reorganising the ways in which societies meet those needs so that they are less resource intensive and more equitable.

Even though discourses of green and inclusive growth implicitly recognise imperfections in the current economic system, such as wealth accumulation and environmental extractivism (defined as the removal of natural resources, especially for export), these discourses remain largely wedded to the neoclassical economics principle of continued economic expansion. These discourses also do not have a realistic critique of the exploitation of low-income countries by high-income countries, which has facilitated economic growth in high-income countries.[49,50] There is also an absence of critique regarding the continued dominance of high-income countries over the global development agenda, through which this exploitation is maintained.[51]

Panel 1: Examples of alternative schools of thought in economics and their relevance to public health

Ecological economics

Key ideas

Sees the economy as a subsystem of society, which is a subsystem of the biosphere. Analyses economic processes, not only in terms of monetary indicators but also in terms of their associated resource use and social outcomes. Ecological economics also argues that many environmental problems are caused by the scale of economic activity exceeding environmental limits.[30]

Relevance to public health

Substantial varied evidence regarding the relationships between economy, health, and the environment.[35] The focus on meeting basic needs within planetary boundaries could be adopted by the wider health field and forms part of recent discourses (eg, for planetary health).

Institutional economics

Key ideas

Institutions (defined as formal and informal rules), rather than markets, govern most important decisions within the economy. Institutional economics considers the role of transaction costs and path dependencies (the concept that change is affected by historical context, which shapes and often limits the scope of change).

Relevance to public health

A recognition of the important role that laws, policies, and culture have in shaping economic outcomes, including health outcomes. The importance of local and regional economic development bodies and larger economic institutions (eg, central banks and the International Monetary Fund) for population health is increasingly clear.[19,36,37]

Complexity economics

Key ideas

Conceives of the economy as a complex system, interacting with other complex systems (such as population health and the environment). The focus is on the uncertainty created by constant changes and the characteristics of non-linearities, feedback loops, tipping points, and emergence.[38,39]

Relevance to public health

Understanding relationships between three complex systems (population health, the environment, and the economy) requires specific methods. Innovations in complex systems modelling of the economy could be deployed to study how economic factors affect health. The identification of impactful interventions needs to consider the structure and behaviour of the economic system.

Evolutionary economics

Key ideas

Aims to understand how and why economic systems change over time. Emphasises path dependency (in common with institutional economics), processes of innovation, and technological change.

Relevance to public health

Recognises that the economy is not a static system in equilibrium, but a dynamic changing process. Uncertainty and absence of knowledge are considered the main economic problems, rather than scarcity. Evolutionary economics resonates with the changing nature of public health.

Post-Keynesian economics

Key ideas

Economic outcomes are driven by effective demand. Full employment (ie, where all who are able to and want to work can find employment) does not automatically emerge through market processes. Governments have an important role in promoting demand and full employment through investment.

Relevance to public health

Highlights the role of government intervention in achieving health outcomes, which are influenced by employment levels and social inequality.

Behavioural economics

Key ideas

Criticises the idea of a rational homo economicus. Behavioural economics highlights the psychological and social processes that influence decision making, including the role of values and norms, temporal discounting, loss aversion, and practical rules.

Relevance to public health

Acknowledgment that the design of health interventions, as well as economic policies that affect health outcomes, need to be based on a more realistic view of human behaviour.

Marxian political economy

Key ideas

Emphasises the role of power asymmetries and unequal distribution of resources among economic actors for shaping the structure of the economy and for driving economic growth and exploitation.

Relevance to public health

Analysis of health outcomes and the design of health interventions need to take the unequal distribution of resources and power into account. Marxian political economy emphasises the positive role that greater equality can have for improving health outcomes.

Feminist economics

Key ideas

Criticises mainstream economics for ignoring the important role that informal, non-market activities have for economic and wellbeing outcomes, especially the role of care work and household tasks that are predominantly done by women.

Relevance to public health

Feminist economics includes a greater acknowledgment of the role of the informal economy for health and wellbeing outcomes and the need to measure and reward their contribution.

Discourses that prioritise other economic objectives

There are several alternative discourses, informed by ecological economics, which prioritise economic objectives other than GDP growth. These discourses include degrowth (which aims to improve human wellbeing and social equity while reducing resource use),[52] steady-state economics (which aims to stabilise resource use within ecological limits),[53] an inclusive economy (an alternative to inclusive growth that emphasises social justice),[54] a wellbeing economy (an approach that prioritises human and environmental wellbeing),[55] and doughnut economics (a framework for how the economy could develop within a safe environmental space and just social space).[27] One of the things that unifies these discourses is their desire to move beyond the pursuit of GDP growth as a social goal.

Critiques of these discourses emphasise the potential for reduced consumption to affect wellbeing. However, these critiques are based on the mainstream economic assumption that wellbeing is largely equivalent to consumption. For neoclassical economists, wellbeing is understood through the lens of utility, which is increased through the satisfaction of preferences. Given the neoclassical assumption that human wants are infinite, the best way to satisfy them is to maximise consumption.[28] Other schools of economic thought have a different conception of wellbeing. For example, ecological economists frequently consider wellbeing in relation to human needs, which are seen as universal and satiable.[28] Ecological economists recognise that consumption is just one of the ways that individuals and societies meet their needs. Thus, decreases in consumption that do not affect people's ability to satisfy their basic needs are unlikely to reduce their wellbeing.[6] It is plausible that a reorganisation of provisioning for needs satisfaction could combine reduced consumption with higher wellbeing.[28,56,57]

Even if a decrease in consumption, aimed at a more equitable distribution of resources, did lead to specific wellbeing reductions for a small number of wealthy people, our view is that such reductions should be carefully quantified and transparently contrasted with the potential benefits and harms of alternative options. The public health profession's experience of balancing benefits and risks, and of addressing unequal distribution of resources,[58] can be built on and could make a helpful contribution to such work.

Economic objectives

GDP growth

Economic objectives shape the criteria used for decision making and the indicators by which success is judged.[59] Ecological economists argue for a distinction between the objectives that are pursued as goals and those that are pursued as means.[30] In this section, we contrast objectives focused on growth with those focused on sustainable human wellbeing.

As outlined, a key objective pursued within neoclassical economics is increased economic output, which is often seen as the key means by which to improve people's lives. GDP growth has been associated with better population health, with suggested mechanisms including the potential for increases in GDP to improve living standards through access to employment or through increased tax revenue to fund public services. However, this relationship is highly complex and these mechanisms do not always occur, resulting in a mixed evidence base.[25] Moreover, there might be a threshold beyond which the relationship does not hold at all,[60] and it appears the relationship is weakening over time.[11]

GDP also measures many things that can harm health (eg, the production and sale of tobacco, sugary drinks, and toxic chemicals) and it is strongly linked to resource use, biodiversity loss, and pollution (eg, CO_2 emissions, plastic waste, and particulate matter).[3,5,61] These environmental harms in turn cause a range of negative health impacts, such as respiratory diseases, heatstroke, and compromised livelihoods.[20] Furthermore, practices such as offshoring harmful production and waste disposal,[62] and increasing exposure to pollution for people living in areas of higher deprivation,[63] mean that GDP growth often contributes substantially to health inequalities.

Moreover, GDP does not capture many things that contribute to health, such as volunteering or unpaid care,[64,65] and it says nothing about equality of outcomes.[66] Although pro-growth discourses such as inclusive growth and green growth seek to alter the type of economic growth, the focus on GDP growth as a goal still remains. For additional reading and more substantive critiques of GDP, see van den Bergh,[67] Costanza and colleagues,[66] and O'Neill.[68]

Sustainable human wellbeing

Ecological economics argues for an explicit shift in what society aims for and how success is measured. Although the alternative discourses identified earlier in this Viewpoint frame the issue in different ways, they all share some common goals: flourishing people, which means universal access to the basics for living well; a flourishing planet, which means that resource use and emissions need to be limited to environmentally safe levels (ie, planetary boundaries) while protecting biodiversity and sustaining life; limits to inequality and increased justice; and shared and distributed responsibility and power.

The transition away from GDP to better measures of economic and social performance will require substantial institutional shifts, such as a move away from the unidimensional approach of neoclassical economics and towards a multidimensional framework.[69] A key contribution of ecological economics is the idea that society has multiple non-substitutable goals (eg, wellbeing, equity, and sustainability) that cannot be collapsed into a single measure (eg, GDP). Recent work has suggested potential measurement frameworks[70] and first coalitions

(eg, the Wellbeing Economy Governments partnership, which aim to pursue innovative policy approaches to create wellbeing economies). If society accepts the importance of prioritising social and environmental aspects within economic policy, any alternative to GDP must capture the domains of social and environmental performance. The so-called doughnut of social and planetary boundaries offers one such approach, as it aims to achieve a social foundation for human wellbeing (based on the Sustainable Development Goals) without exceeding the ecological ceiling. According to this multidimensional framework, resource use should be high enough to meet people's basic needs, but not so high that it transgresses planetary boundaries. The doughnut-shaped area in between the social foundation and the ecological ceiling represents a "safe and just space" for humanity.[27] Additional consensus will need to be built so that comparable methods are routinely used across nations.

Interventions

A recent review of ecological macroeconomic models found broad agreement in ecological economics about the types of interventions that are likely to be needed to achieve a socially and environmentally sustainable economy.[71] Besides adopting new indicators of progress, these interventions include reducing the environmental impacts of economic activity, addressing economic inequality, reducing working hours, reforming the monetary system, investing in public goods, encouraging new business models, promoting less materialistic lifestyles, and regulating international trade.

Although this Viewpoint cannot give a comprehensive set of ecological economics policy solutions, we provide some examples in panel 2. These are illustrative, not exhaustive, and we recognise that we have not covered important topics such as promoting less materialistic lifestyles. There are also substantial differences in applicability in different parts of the world and in different contexts (our primary focus here is wealthy nations such as the UK and the USA). For a more detailed discussion of ecological economics policy proposals, see Daly and Farley,[30] Dietz and O'Neill,[53] D'Alisa and colleagues,[52] Jackson,[26] and Raworth.[27]

Implications for public and planetary health research and practice

Ecological economics and other pluralist economics approaches offer opportunities to build a society that centres on health and the environment. As we have outlined, mainstream economic thinking has led to a system that generates a range of harms to health and the environment. Ecological economics aims to prevent such harms from the outset, rather than trying to correct negative externalities after they have happened. The core vision of ecological economics sees the economy as embedded within society, which is in turn embedded within the biosphere.[30] Another key concern of ecological economics is the importance of equity in the distribution of resources. Thus, by design, ecological economics seeks to ensure the scale of the economy does not transgress the limits of the ecosystem while managing the Earth's resources equitably for society.

Moving away from a focus on GDP growth as the primary way to increase wellbeing, and towards a multidimensional approach with an emphasis on needs satisfaction and sustainability, aligns well with objectives of public and planetary health. It moves from an individual lens to a population lens and shifts from a goal based on the aggregation of individual benefit to a multidimensional approach in which collective wellbeing is the focus.

Society must find new trajectories of economic development that prioritise human and environmental benefits. Crucial to establishing these trajectories is an understanding of provisioning systems (ie, the physical and social systems that link resource use and social outcomes).[56] Research on provisioning systems has

Panel 2: Examples of key interventions and the state of the evidence in relation to population health

Caps or taxes on resource use and pollution
Resource use and pollution must be kept within the capacity of ecosystems to protect planetary and population health. Cap-and-trade systems and taxes on extraction and pollution have both been shown to be effective approaches.[72]

Redistributive taxes (eg, progressive income taxes)
Highly likely to benefit population health and increase social equity.[13,73]

Universal basic income or universal basic services (a guaranteed income or free-to-use services for all citizens)
Likely to benefit population health and needs satisfaction and reduce inequality,[74] but the macroeconomic impacts are understudied.[75]

Reduced working hours and greater workers' rights
Reductions in the working week and flexibility in working hours are likely to improve wellbeing,[76] reduce unemployment,[77] and reduce environmental impact.[78] Improved working conditions, including protections from hazardous substances, have a positive impact on population health.[15]

Welfare provision
There is evidence that increased eligibility and generosity of social security improves population mental health and reduces inequalities,[79] but evidence about specific models of welfare is more limited.[80]

Social and solidarity economy (made up of organisations such as social enterprises and cooperatives)
Social enterprises and cooperatives are likely to improve health for their employees and residents in the local area where these businesses are based.[81,82]

Public investment through sovereign money creation (ie, money created by the central bank)
The UK's central bank became the first in the world to create money to help pay for the costs of the COVID-19 pandemic.[83] Public investment in sectors such as welfare and housing has been shown to benefit people's health.[84]

For more on the **Wellbeing Economy Governments partnership** see https://wellbeingeconomy.org/wego

identified some factors that are beneficial to society (ie, that are associated with greater satisfaction of people's needs and lower energy use) and others that are detrimental (ie, that are associated with poorer satisfaction of people's needs and higher energy use).[35] This research points to the benefits of increasing the quality of public services, income equality, democracy, and access to electricity. The research also highlights the potential negative effects of economic growth and extractivism. A shift from neoclassical to ecological economics would mean a greater emphasis on the role of the state, the importance of increasing people's agency and dignity, and the need for redistribution.

Designing policies that aim to combine social and environmental objectives, and assessing their impacts, will require approaches that understand economic and health systems as complex systems with elements that often inter-relate in non-linear ways. Several heterodox economics schools of thought, including ecological economics and complexity economics, support this perspective. Evaluations informed by these perspectives would seek to study how interventions change system behaviour, consider non-linear effects and tipping points, and identify different points in the economic system at which to intervene.[85] Such systems thinking aligns well with a recent umbrella review of the economic determinants of health, which developed a conceptual model of the economy categorised into ideology, regulation, labour, markets, finance, production, consumption, distribution, and the balance between private, public, and third sectors.[15] Adopting frameworks like these can guide interventions across a range of components within the economy.

An example of applying a complex systems approach can be seen in a landmark review of the UK food system.[86] The review identified two key reinforcing feedback loops causing harm—namely, an "invisibility of nature loop" and a "junk food cycle". In the first loop, limits to natural resources and harms to the environment are not considered within the food system, allowing continued degradation of the environment without accounting for the harms and costs. In the second loop, high demand for unhealthy food products leads to increasing investment in producing, marketing, and selling such products, which in turn leads to increased consumption. The review recommended a range of interventions across different domains of the food sector, including a sugar and salt reformulation tax that could be used to subsidise fruit and vegetables for low-income families, mandatory reporting of a set of health-related metrics for large food companies, agricultural payments to enable sustainable land use by farmers, minimum standards for trade, and new government procurement rules for food.

A complexity lens can also show that policies are likely to act through different pathways, and often several pathways in combination. For instance, policies such as a universal basic income or universal basic services would be likely to influence health through various channels. These policies could increase health directly by improving needs satisfaction for all, but also indirectly by creating more equal societies, reducing pressure to participate in the labour market, and increasing people's time to engage in health-promoting activities (eg, spending time with friends and family, care and community work, exercise, and engagement with nature).[75]

Changing the economic goal to sustainable human wellbeing is likely to require multiple interventions, including top-down and bottom-up action, as well as physical and social change. Many of the challenges faced are structural and will require large investment in systems such as transport, energy, and food. A neoclassical approach would favour balanced national budgets (ie, tax revenue and spending should be equal) or small deficits that do not lead to growing public debt ratios. However, ecological economics suggests that national public debt does not necessarily have to be eliminated or be small; rather money can be created by the central bank to finance socially needed investment,[87] as was done in the UK during the COVID-19 crisis.[83] Ultimately, money is a social construction that represents what is valued as a society and it is not a scarce asset in the way that natural resources are.[88]

The idea of sovereign money creation has strong relevance for how public health makes the case for public investment. Historically, the debate has focused on raising revenue to spend, including through hypothecated taxes (ie, taxes that are committed to specific investment causes);[89] however, investment through sovereign money creation (ie, the direct creation of money by the central bank)[90] could solve many cost constraints on government spending related to health outcomes and could be additionally justified by the literature showing the economic benefits of investments that improve health.[84] However, we recognise that this strategy is perhaps easier for wealthy countries that are at the top of the global financial and currency hierarchy.

At the same time, change also needs to be supported by bottom-up action. Citizens need to be supportive of new goals and policies and will have to adopt new practices that align with improving human wellbeing within planetary boundaries. An important avenue to support such bottom-up action could be deliberative and participatory processes that involve citizens in developing shared understandings of basic needs, and the ways to satisfy these needs.[28,91] Deliberative and participatory approaches start from the assumption that people's interests and worldviews are not given, but are shaped by social context. Through processes of reasoned deliberation, participants have the opportunity to question the status quo, understand and empathise with others' interests and viewpoints (including those of future generations), and envision alternative futures.

Public health professionals wishing to advocate for a more sustainable economic model can begin by

identifying key economic decision makers with whom they can collaborate, and by building alliances with networks that are working on these topics (such as the Wellbeing Economy Alliance, which has published briefings on possible interventions[92] and on how to design wellbeing economy policies).[55] Power dynamics must also be considered. Fossil fuel companies are known to have actively worked against the implementation of policies that would benefit people and the environment.[93–95] Effective strategies from past public health experience include citizen action against tobacco companies.[96] These strategies could be similarly applied to fossil fuel companies.

Further research that disentangles the historical and political factors surrounding the economic determinants of health and the three-way relationships between health, economic activity, and the environment will be of value. Public health research has had a strong focus on causal macrosocial epidemiology that can help with these issues and can build on complexity science to do so.[97] Exploratory social science can help to envision the future trajectories through which economies can achieve sustainable human wellbeing.[98] Ecological macroeconomic models that account for important determinants of health could be extended to explore health outcomes,[71] whereas public health research using complex systems modelling could be extended to include environmental constraints.[99]

Conclusion

Public health is often defined as "the science and art of preventing disease, prolonging life and promoting health through organised efforts of society".[100] Shifting from neoclassical economics to ecological economics offers the opportunity to move to a system that is more focused on the promotion of good health from the outset—a move to prevention rather than cure.

A key take away for public health audiences is that there is a long history and vast research base in the heterodox economics literature, particularly in ecological economics, which is relevant to public and planetary health. Connecting with ecological economists presents an important avenue for public health professionals wishing to support a transition to a healthy and sustainable economy. The evidence also points to some broad conclusions around the types of interventions and processes of change that might be required to achieve such an economy.

Public and planetary health have much to learn from ecological economics and other pluralist economics approaches. The prioritisation of health and environmental objectives, and an understanding of the complex relationships between economic activity, resource use, and social outcomes are areas where ecological economics offers important lessons for public health research and practice. Moving beyond the neoclassical growth paradigm is likely to require a range of interventions, and it is vital that public health engages critically with the evidence base that has developed in ecological economics.

Similarly, ecological economists could benefit from engaging more with work in public health. The field of public health has much to offer (eg, robust causal and critical thinking) and a strong focus on population health and justice outcomes. Overall, we hope this Viewpoint contributes to a more informed critical public health discourse on how the economy affects people and planet. This discourse could help shape thoughtful and effective policy, research, and practice.

For more on the **Wellbeing Economy Alliance** see https://weall.org

Contributors

YN proposed the original idea for the Viewpoint and AB led the project. All authors contributed to the conceptualisation, analysis and writing of the Viewpoint.

Declaration of interests

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