
Original Article

Sustainable health and degrowth: Health, health care and society beyond the growth paradigm

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Abstract The extraordinary economic growth rates of the twentieth century are historically exceptional and a continuation into the future seems neither possible nor desirable. Consequently, it is in the interest of public health to actively shape a socio-economic transformation towards a system that is not based on growth. ‘Degrowth’ provides coherent guidelines for such a system. Combining existing scholarship from the degrowth and the public health fields, this paper makes seven suggestions for a public health agenda towards sustainable health: (1) to develop an index of health status in relation to present and future health burden; (2) to reduce the resource burden of medical therapy; (3) to translate increased productivity to fewer working hours and more free time instead of more income and material consumption; (4) to make use of non-conventional knowledge and non-commercial forms of work and product exchange; (5) to make knowledge freely available, making use of innovative research frameworks such as open source drug research; (6) to relocalize economic life and health-related organization and to reshape citizen participation and (7) to reduce socio-economic inequality through redistribution. Generally, this paper argues that it is time for discussions on degrowth to enter the mainstream medical and health community and for doctors and other health workers to acknowledge that they have a significant role to play and important experience to contribute when our societies face the upcoming challenge of no-longer-growing economies.

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Introduction

This paper explores ways in which health could and should play a constructive role in transformations that are designed to lead to sustainable socio-economic regimes and sustainable health. It is assumed that a shift to a system without constant economic growth will bring about profound changes with or without such active transformations.

Few ideas have become so universally accepted as the need for economic growth, routinely invoked as a key strategy to fight economic crisis, reduce poverty, create employment and generally increase human welfare, including and especially health (Spence, 2009). But the economic growth which modern societies have come to expect as normal is anything but a norm. Historically, growth rates of past decades have been quite exceptional and are physically impossible to sustain. Repeating the 15-fold increase of the economy and a 13- or 14-fold increase of energy use of the twentieth century every future century is beyond even the wildest science fiction. The spectacular global economic growth since approximately 1830 and its acceleration after 1950 were based primarily on the unprecedented availability of cheap energy through fossil fuels. The finite nature of fossil fuels, the need to curtail their use to mitigate climate change, the sheer physical impossibility of an indefinite continuation of increasing population, material production and consumption (and, consequently, waste generation) all contribute to making endless economic growth impossible (McNeill, 2002; Krausmann *et al*, 2013). This paper, therefore, is based on the assumption, that there is no question of whether there will ever be a change from the present growth regime but that sometime in the foreseeable future economic growth will decrease and, eventually, end. It also assumes that, in the interest of human well-being, it is preferable to actively shape this transition instead of just passive enduring uncontrolled changes.

Studies on the need for a non-growth economic system began in the 1970s with several high-profile publications (Georgescu-Roegen, 1971; Meadows *et al*, 1972; Daly, 1973; Illich, 1973). Around the year 2000, these debates re-emerged under the label of “degrowth” forming a “frame, where different lines of criticism of conventional economic policies converged” (D’Alisa *et al*, 2014), in particular two different schools of thoughts: “Degrowth à la Française”, which is primarily related to political ecology and the critique of conventional development (Latouche, 2006), and “Sustainable Degrowth”, which is primarily linked to Ecological Economics (Martinez-Alier *et al*, 2010). While differing substantially in details, all authors embrace in some way an idea of a “democratically led redistributive downscaling of production and consumption in industrialized countries as a means to achieve environmental



sustainability, social justice and well-being” (Demaria *et al*, 2013). Degrowth authors argue that, today, growth is uneconomic, unjust, ecologically unsustainable and, above a certain level, it does not increase happiness (D’Alisa *et al*, 2014). These theses are easy to grasp in theory but difficult to translate into policy. In existing economies, negative growth acts as economic crises which provoke stock market crashes, unemployment and, overall, an implosion of the economy necessitating extraordinary fiscal and monetary countermeasures and/or a reduction of welfare expenditures (Tokic, 2012; Kallis *et al*, 2012). Consequently, policymakers around the world are eager to take action to restore economic growth in order to avoid the negative consequences of its absence. Degrowth scholars are not naïve about the difficulties of a transition to a sustainable non-growing system. They point out that economic crisis is not degrowth but the failure of a system whose functioning presupposes economic growth. Thus, it is important to recognize the difference “between depression, i.e. unplanned degrowth within a growth regime, and sustainable degrowth, a voluntary, smooth and equitable transition to a regime of lower production and consumption” (Schneider *et al*, 2010). Indeed, degrowth is not limited to declining GDP, though this will presumably be a part of it. More importantly, it describes a transition to a socio-economic model in which a multi-dimensional and long-term concept of well-being replaces the increase of GDP as the central developmental goal. It entails, therefore, major systemic, socio-economic changes.

Obviously, this issue has radically different ramifications in high- and low-income countries. While industrialized societies are plagued by the effects of overproduction and consumption, many countries in the global south suffer from appalling material poverty, and societies everywhere are heterogeneous, including both rich and poor people. The degree to which these differences will determine how an economic transformation will play out locally, nationally and regionally shall not be belittled, including their influence on health. However, in as much as the global economy is reaching its limits of expansion, all areas are linked within a system of global connections and globalized concepts, and this paper aims at addressing some common themes that run through debates everywhere.

In several ways, health lies at the centre of this challenge. To begin with, health expenditures account for 17.9 per cent of the GDP in the USA, 11.3 per cent, in Germany and 9.2 per cent in Italy (WHO, country files, 2014a, b, c). Consequently, health services are affected by the same exigencies and incentives that shape the growth-centred economy at large and, problems affecting the economy at large when transitioning to a non-growing mode will also face the health sector. Even more important, health itself is tied to economic growth in forceful, though sometimes contradictory interaction. While there is



little doubt that a healthy population is good for economic performance, the influence of economic growth on population health is more contested. Proponents both of a growth-based economic system as well as degrowth scholars argue that their concept is beneficial for population health: the former point to the consistent positive correlation between per capita GDP and life expectancy during the twentieth century and to the fact that economic growth “increases the availability of food, makes health spending affordable, and raises the demand for good health” (Spence, 2009, xii). The latter point to the frequent connection between falling growth rates during economic crises and declining mortality rates as proof that reduced economic production will not harm but, on the contrary, improve public health (De Vogli and Owusu, 2015).

Both approaches are simplistic, at best. This is no place for a detailed discussion of the relevant evidence, but in very broad strokes, the historical record indicates the following: periods of rapid economic growth have often, though not always, coincided with heightened mortality, apparently as a result of widespread social disruptions, increased stress, migration and/or traffic accidents. Conversely, periods of economic contractions have often, though not always, coincided with longer life expectancy. However, the long-term effects of economic growth have, so far, been overwhelmingly positive for the populations that benefited from it. High living standards in housing, nutrition and better medical and health infrastructures, based on the cumulative economic growth of past generations, have all contributed to better health status among millions of people living today, although the extent of benefits has depended heavily on the degree to which increased public and private funds have, indeed, been used for healthful purposes. Besides, it must be recognized that, historically, the process of industrialization and the resulting economic growth involved massive death and health damages suffered by population groups who are not included in simple correlations such as Amerindians and African slaves, whose deaths and overwork formed prerequisites for the sugar and cotton plantations which, in turn, made early industrialization possible. Similarly, the enormous use of fossil fuels, which underlies economic growth today, will result in large-scale health burdens for generations in the future (Borowy, 2017; Fogel, 2012; Floud *et al*, 2011). In fact, the Lancet Commission on Managing the Health Effects of Climate Change called climate change “the biggest global health threat of the 21st century” (Costello *et al*, 2009), potentially causing 250,000 additional deaths annually between 2030 and 2050 for well-understood impacts of climate change (Hales *et al*, 2014).

Consequently, what is required is a system that maintains the benefits of a high economic standard while avoiding the health damages caused by either economic growth or crisis in the present as well as in the future.



The difficulties should not be underestimated. The negative impact of economic growth on some people, mainly in the past and in the future, does not make the health benefits other people are reaping from a high economic living standard, mainly today, any less real. Similarly, a mere elimination of health-damaging components of economic growth will not automatically retain its beneficial parts. Specifically, challenges derive from a presumed reduction of private and public revenue. Though, as mentioned, shrinking public and private income is not the only aspect of degrowth, it is part of it and it will impact the room of manoeuvre for governments as well as for citizens. In the past, increased revenues have made possible improved living standards, notably better nutrition and housing, public expenditures on health-supporting utilities like water supply and sanitation, a solid health-care system including preventive measures like vaccinations or routine check-ups and high-quality medical care. The challenges are real. Statistically, wealth and health expenditures are positively correlated and so are health expenditures and life expectancy. However, these correlations weaken substantially above a certain level, with little difference of life expectancy between the per capita health expenditures of \$4000 and \$10,000, and the World Health Organizations estimates that “typically between 20–40 per cent of health spending is wasted, depriving many people of badly needed care” (WHO, 2014c, p. 5). Thus, a real effort will be necessary as well as possible to retain those benefits for less money, not by slashing existing programmes in the way of austerity measures, but by organizing them more intelligently and more creatively. New ways need to be found to conduct medical research and to provide clinical equipment; examples are discussed below. Other strategies will be to allocate funds in more rational ways (avoiding waste, promoting clinical appropriateness and cost-effective treatments), to provide equitable healthcare systems, to restructure society and lifestyles in more healthful ways and generally to re-evaluate attitudes and value systems. Acting on social and environmental determinants of health (in particular with regard to equity) will have substantial repercussion on population health, likely to compensate for disadvantages caused by GDP reductions. In any event, given the probability of fading economic growth and, conceivably, diminishing GDP, the health outcomes of degrowth measures will need to be measured not primarily against health outcomes of the presumed continuation of present economic circumstances but against health in a postgrowth future in the absence of such strategies.

Relatively little work in this field has been done so far, though related ideas have been around for many years going back to Ivan Illich’s radical critiques (1973, 1976) of medicine in an industrialized world in the 1970s. While the degrowth movement of the twenty-first century recognizes Illich as one of its foundational authors, it has been slow to address specifics of health. Recently,



Borowy (2013) tested the experience in Cuba during the 1990s for possible lessons for future transformations and insisted on the need for the integration of health considerations into discussions on systemic changes (Borowy, 2014). Both De Vogli/Owusu (2015) and Missoni (2015) have pointed out the negative effects of globalization and neoliberal policies on population health calling for a systemic shift towards degrowth, focusing, respectively, on changes in economic structures (De Vogli/Owusu) or in international health regimes (Missoni). But these studies offer relatively little in terms of tangible changes in the health field. By contrast, Geoff Rayner and Tim Lang (2012) developed a detailed health rationale for a far-reaching socio-environmental-economic sustainability transition, without, however, tying this to the question of economic growth. Sustainability and degrowth are not identical, indeed, proponents of degrowth often criticize the concept of “sustainable development” as a failed concept (Hyatt, 2014). However, regardless of this rejection of development, the concept of sustainability has been used by degrowth scholars, and often degrowth is defined as “socially and sustainable degrowth” (Martinez-Alier *et al*, 2010). We argue that a shift towards a degrowth system will result in a lifestyle and society that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 2009, pp. 8, 43). In as much as health is a fundamental human need in the present as in the future, this paper considers degrowth a strategy towards sustainable health.

The overlap was reflected in the title of the 3rd International Conference on Degrowth for Ecological Sustainability and Social Equity, which included several papers on health (Aillon *et al*, 2012), and Aillon and Dal Santo took the topic up again at the 2014 Leipzig conference on Degrowth (Aillon and Dal Santo, 2014) applying some principles of Latouche’s concept to the health field. This paper follows up on this approach. Making use of a broader range of degrowth concepts, taken from five specific, inter-related transition proposals (Latouche, 2006; Jackson, 2009; nef, 2010; Paech, 2012; Daly, 2013), this paper explores how policies – as well as more far-reaching re-evaluations and re-conceptualizations of central ideas of health, illness and care – could be translated into practical changes in medical and public health. In the process, this paper seeks to connect two fields of scholarship which, so far, have taken little notice of each other.

Change the concept of progress and related indicators

Clearly, the most central and far-reaching demand of a degrowth transformation is to separate the goal of social and environmental improvements from



economic growth. This entails that the performance of a country can no longer be judged by its Gross Domestic Product (GDP). The weaknesses of this index have been obvious and discussed for a long time and its replacement by a more useful measurement forms a standard component of virtually all suggestions for alternative systems. Daly (2013) proposes creating separate cost and benefit accounts and aiming for a positive balance. Jackson (2009), more generally, calls for the reformation of national accounts, while Latouche (2006) demands a reconceptualization of values. A number of alternative indicators have been suggested, including the Index of Sustainable Economic Welfare (by Daly and Cobb), the Adjusted Net Savings Index (World Bank) and the Measure of Economic Welfare (Nordhaus and Tobin) (Jackson, 2009, 179), which aim at reflecting both the benefits and damages resulting from economic growth. By contrast, the Happy Planet Index, HPI (Nef, 2016) developed by the new economics foundation, approaches the question not by defining economic performance but by asking what people want from life. The authors of the HPI hypothesized that most people wanted long happy lives without destroying the environmental basis on which the well-being of future generations would depend and, therefore, designed the HPI as an efficiency index that measures the amount of happy life achieved per unit of environmental burden, calculated as ecological footprint. Economic performance affects the outcome only indirectly and both positively and negatively in as much as it impacts longevity, life satisfaction and ecological footprint.

By including life expectancy, the HPI introduced a health measurement into its calculation, albeit one that is no longer the dominant number of choice within the health sector. The health field has similarly struggled with the problem of how its object should be defined and measured. In the 1990s economists developed disability-adjusted-life years (DALYs). Designed to calculate the benefits of health interventions, the original form was strongly economic, due largely to its features of age weighting (which attached more value to the lives of working-age adults than those of children or the elderly) and time discounting (which attached less value to health effects in the future than to those in the present). In addition, experts criticized DALYs for applying ill-suited utilitarian principles to health and for insufficiently taking into account the social and cultural context of disease and disability. Nevertheless, adopting disease and disability into an index was an improvement compared to using merely mortality as an indicator of a phenomenon as complex as health (Anand and Hanson, 2004; Mont, 2007; King and Bertino, 2008). DALYs have become a standard measurement for population health, though in 2013 the World Health Organization dropped the controversial age weighting and time discount (WHO, 2013).

However, somewhat surprisingly and in contrast to the economic field, so far these discussions have ignored the environmental costs of the population health



level achieved. This is contrary to the idea of sustainability since the environmental burden generated through health-related activities today will affect the health of future generations. This is true in the indirect effects of the factors that improve living standards today but jeopardize the health of people elsewhere or in the future by inducing climate change, degrading crucial life support systems in increasing social inequality. However, this aspect also relates directly to medical care. Health-care facilities are major consumers of water and energy and also produce substantial amounts of waste. Generally, waste generation tends to be higher in high- than in low-income countries, ranging from 0.02 kg per patient per day in urban dispensaries in Tanzania to 10.7 kg per occupied bed per day in metropolitan general hospitals in the USA. 10 to 25 per cent is considered hazardous, consisting of chemical, radioactive, infectious, pathological, cytotoxic and sharps waste. Though the immediate health risks can be mitigated by proper disposal, such “disposal” merely puts these substances out of immediate harm’s way, it does not usually make them disappear. Healthcare, therefore, adds to the hazardous materials on Earth that create greater or lesser health risks. Even the non-hazardous waste, mainly paper, plastics, glass, metals and textiles, represents an environmental burden with long-term effects on population health (WHO, 2014a). The challenge is serious since part of the waste results from practices such as the use of disposable equipment like syringes or plastic tubes which can save lives. Nevertheless, initiatives like *Health Care without Harm* (<https://noharm-global.org/>) which was formed in the USA in 1996 and has grown to include hundreds of collaborating partners in 52 countries, as well as WHO guidelines (WHO, undated) demonstrate how much potential there is for improvement. These efforts are hampered by the fact that, so far, there is no measurement for the extent to which healthcare policies themselves generate current and future health risks and no indicator that balances the health gains and health hazards of national policy.

Integrating health into degrowth conceptualizations, therefore, would be helped by an index that combines health status, presumably expressed as DALYs, in relation to the present and future health burden, expressed as ecological footprint or another, yet to be developed figure.

Reconceptualize central ideas of work, production, health, illness and care – Shift efficiency efforts from labour to resource productivity

Modifying the socio-economic system according to degrowth principles entails shifting efforts to improve productivity from labour, which societies will want



to maintain, to resources, of which societies will want to use less. All authors cited above include stipulations towards this goal by changing taxation (Daly, 2013; Jackson, 2009; nef, 2010) and/or by encouraging long-time use of products and recycling (Latouche, 2006; Paech, 2012).

In the health field, this would correspond to shifting the focus of medical care away from material to non-material methods and, generally, to reducing the resource burden of therapy. This, in turn, involves a shift of focus from cure to health promotion and from a biomedical to a social approach to health. In one sense, such an approach is hardly revolutionary. It ties into long-standing and widely accepted principles of public health, such as the WHO definition of health as a state of 'physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO, 1946) and concepts that patients are more than the sum of their biological parts but are bio-psycho-social-cultural and spiritual subjects, interacting with their surrounding physical and social environment in complex ways (Illich, 1976; Engel, 1977; Suls and Rothman, 2004; Roberti di Sarsina and Iseppato, 2010; Commission on Social Determinants of Health, 2008). However, this approach goes against strong tendencies of medicalization of social processes such as birth, ageing or periods of unhappiness in recent decades, supposedly requiring medical intervention. This medicalization of life is driven by the financial interests of companies, doctors and journalists (Moynihan and Smith, 2002) and also by patients, many of whom have become used to expecting instant technical fixes for what may be a variety of diseases, mere symptoms of more complicated difficulties or no diseases at all (Macfarlane *et al.*, 1997; Cassel and Guest, 2012). This approach prevents a holistic understanding of health, which integrates scientific, social and cultural considerations. Thereby, this conventional understanding effectively becomes a driver of growth for resource-intensive and expensive pharmaceutical and medical intervention which stands in the way of a transformation towards sustainable health. Besides, this practice not only wastes public and private incomes, it also jeopardizes lives.

An increasing body of literature shows the extent to which patients in many countries are 'overdosed, overtreated and overdiagnosed', making them suffer the consequences of unnecessary labelling, the risks of unneeded tests and therapies, while society pays the opportunity costs of misdirected resources that are missing elsewhere (Moynihan *et al.*, 2012). It is a problem of serious scale in high-income countries. According to some studies, between 25 and 70 per cent of patients that use proton pump inhibitors have no appropriate indication (Forgacs and Loganayagam, 2008) and '20 per cent to 50 per cent of all "high-tech" imaging provide no useful information and may be unnecessary' (Rao and Levin, 2012). Some estimates suggest that as much as 20 per cent of all health care spending in the USA is wasted (Berwick and Hackbarth, 2012). This misuse of



resources is difficult to curtail as long as income considerations of doctors, hospitals and insurance companies play important roles in diagnostic decisions and patients are primarily viewed as consumers, making illness profitable (Velvizhy and Israel, 2013; Hall and Schneider, 2008). Given these circumstances, the degrowth principle of aiming at achieving better results with less material input is not a question of ivory tower theory but of pragmatic efficiency: under specific – but hardly exceptional – circumstances, choosing not to use a drug or procedure may increase human health, while reducing the turnover of specific medical institutions in particular and GDP in general (Grady and Redberg, 2010; Pallante, 2011).

Serious reductions of material diagnostic and therapy will require profound and unpopular changes in health insurance and remuneration systems. Facing professional lobbies and vested interests might be facilitated by making them part of a larger cultural and political transition, including reconceptualization of health along with a reconsideration of widely held cultural assumptions (Aillon and Dal Santo, 2014). Researchers of degrowth, speak of the need to ‘decolonize the mind of the imaginary of growth’ as a way of freeing individual and collective narratives of ‘reality’ from unhelpful and often unreflected assumptions, related to ‘growth culture’ (Latouche, 2006; Asara *et al.*, 2013). This would mean giving up the implicit assumption of many medical doctors, patients and politicians that health is primarily a function of healthcare and that, consequently, more healthcare invariably equals better health. It would also require a shift in the ‘collective imaginary’ of health from a biological, reductionist, objective and neutral conception of health to an holistic, systemic, indeterministic and relational one (Aillon and Dal Santo, 2014), directing less attention and funding at health care systems and more at broader social and political determinants of health (Kickbusch, 2015).

One example of such conceptual changes involves attitudes towards productivity and work.

Translate increased productivity to fewer working hours and more free time instead of more income and material consumption

The fact that, at present, increased productivity is overwhelmingly used to manufacture more products rather than to enjoy more free time has been a major driver of the economic growth of recent decades. All degrowth authors selected for this paper demand a reversal of this policy, allowing more flexibility for how much people choose to work, and to re-distribute and generally reduce work. Such a change promises to have tangible positive



effects on population health, given the research which points to the reduced mortality rates during economic crises, provided health care and social protection remain intact, apparently due to the beneficial effects of reduced workloads and reduced road traffic (Tapia Granados and Diez Roux, 2009; Ruhm, 2007; Bezruchka, 2009; Gertham and Ruhm, 2002). In fact, the effect would presumably be bigger since it would not be counteracted by the negative health effects of unemployment. Instead, the time gained could be used for resource-saving and health-enhancing activities such as gardening, sports, crafts and socializing. Thus, instead of serving as an unreflected justification for the pursuit of further economic growth, health benefits could become a powerful argument in favour of degrowth strategies since it could demonstrate how population health could improve while incomes decrease.

A reduction of resource-intensive work activities serves a similar purpose as a call to

Make use of non-conventional knowledge on health and acknowledge and expand non-commercial forms of work and product exchange

emphatically raised by Paech (2012) and Nef (2010)

In the economic sphere, these proposals refer to accepting house work, neighbourhood help and volunteer work as normal components of both social and economic activities. The purpose of such a shift is to decommercialize part of the purposes that are conventionally fulfilled by paid work, to improve social communication and life satisfaction and to achieve similar gains with less money.

In the health field, this would translate into the promotion of selfcare and traditional and complementary medicines (T&CM). Though not all T&CM practices are non-commercial in the sense of degrowth conceptualization, some are, and, generally, they tend not to be organized as part of a large-scale, growth-oriented medical-pharmaceutical system. T&CM is no fringe phenomenon. Over 100 million Europeans are currently T&CM users, with one in five Europeans regularly using T&CM, and another fifth preferring health care that includes T&CM features. Furthermore, there is a significant demand for T&CM practices and practitioners worldwide (Frohock, 2002; WHO, 2014b). Admittedly, the spectrum of what constitutes 'traditional', 'complementary' or 'alternative' medicine is huge and prevents simple evaluations. But growing evidence demonstrates the clinical efficacy of several T&CM practices in the therapy of a range of diseases as well as the cost saving potential in at least



some clinical populations (Herman *et al.*, 2012). In addition to money, the issue involves equity. Various forms of T&CM offer an important (in many cases the only) form of medical care for the majority of the world population, and to exclude them from mainstream research attention, limiting serious, critical as well as constructive recognition to only one form of medical care, is arrogant at best and violent at worst (Silenzio, 2002). An integration of T&CM into health systems would clearly serve population health in low-income countries (WHO, 2012).

A prerequisite for such synergy and integration is adopting T&CM practices into the regular education of medical and health workers. To distinguish useful from useless or harmful medical practices demands a reconceptualization of T&CM from practices for the poor and esoterically inclined to a service, for which there is a legitimate and necessary place within the regular spectrum of medical activity. By focusing on forms of medicine that are often low-tech and geared towards large, at present underserved parts of the global population, this change would also tie into transformations of the mainstream pharmaceutical sector.

Make knowledge freely available, reduce patent monopolies to a minimum

A specific challenge of degrowth derives from the fact that increased income has also underwritten extremely expensive but highly desirable activities such as the research and development of medical drugs. The goal, obviously, cannot be that medical research and therapeutic advances end. Rather, the aim must be to organize and direct them in more cost-effective and socially just ways. Among degrowth authors, only Herman Daly (2013) specifically demands to make scientific knowledge freely available, but it carries substantial weight in the health sector. Organizing drug development and production through private enterprise entails a structural contradiction between, on the one hand, responsible treatment seeking to maximize health results with a minimum of medical intervention and, on the other hand, a system of for-profit pharmaceutical companies competing on a commercial market for maximum output and financial gains. As a result, the existing system suffers from several well-established problems: the prioritized development and production of commercially attractive drugs combined with a neglect of many pharmaceuticals for which there is of large global need, the development of ‘me-too’ drugs with little additional therapeutic value or practices that artificially boost the perceived need for medication, and ‘disease



mongering' (Moynihan *et al*, 2002; cf. Doran and Henry, 2008). Only 153 or 15 per cent of 1,035 drugs recently approved by the US Food and Drug Administration (FDA) used new active ingredients and provided significant clinical improvement. By contrast, 65 per cent of new drugs contained incrementally modified or identical forms of active ingredients already available in marketed products (NIHCM, 2002). These circumstances result in substantial costs in production and approval procedures while providing little value to patients and consuming funds that could otherwise be used for drugs for which there is a tangible medical need (Gagne and Choudhry, 2011). Famously, only about 1 per cent of patented drugs address tropical diseases, leaving populations of Southern low-income countries painfully underserved (Trouiller and Olliaro, 1999).

Clearly, the existing economic system provides incentives for both too much and too little production of medical drugs, making it an inadequate system for fulfilling an effective public health role. The aim is to separate the provision of patients with needed medication – a desired outcome – from the maximization of corporate profits irrespective of health effects – an undesired outcome. This goal is difficult to achieve as long as drug research and production is integrated into a growth-based economy, i.e. it is left to commercial companies whose decisions are naturally driven by cost-benefit rather than medical considerations and which need to grow in order to remain competitive in global markets. This structure leads to enormous sums spent on marketing, almost twice as much as on R&D according to independent analysis (Gagnon and Lexchin, 2008), systemically channelling drug-related funds away from areas in which they serve population health. Thus, relieving drug production from the need to invest in boosting sales on a competitive market would free considerable sums of money to invest in research for medication for unprofitable illnesses. In practice, this means using entirely different organization and funding mechanisms than those of the for-profit corporations in the private market.

Some efforts along those lines have already been made. In 2003, a WHO Secretariat paper on intellectual property, innovation and public health set in motion a lengthy process of debate. Resulting proposals included the use of voluntary contributions from business and consumers, the taxation of repatriated pharmaceutical industry profits, donor funds, open source research, patent pools, orphan drug legislation, biomedical research and development treaty and large end-stage prizes (impact-based rewards) (WHO, 2011). Arguably, the most unconventional proposal, most in line with degrowth thinking, involves open source drug research. This work form, adopted from computer science, aims at producing common property knowledge and is in perfect contradiction to research aimed at safeguarding intellectual property rights. Only very few attempts in this regard have been made so far but first



findings indicate that ‘[o]pen source drug discovery can be an influential model for discovering and developing new medicines and diagnostics for neglected diseases’ (Årdal and Røttingen, 2012). We argue that coordinated national and international support for these and other alternative methods of drug financing are urgently called for as sound investment in effective and affordable global health care. Presumably, in the long run, this will entail reconceptualizing pharmaceutical research and production as a public requirement and shifting the process from an inefficient private to a less wasteful public utility.

Relocalize economic life and health-related organization

This demand aims at making the local community a central element in the organization of economic, political and health-related decisions. It reflects, on the one hand, the need to curtail the resource-intensive global trade, which the world can no longer afford during times of climate change. This is the focus of Daly’s proposal for a reform of international commerce according to ecological principles (2013) and of the reflexion on the concept of autonomy made by Cornelius Castoriadis (1997). But most authors raise more far-reaching questions of democracy, local autonomy and community life (Latouche, 2006; Paech, 2012; Nef, 2010). These demands can be connected to long-standing concepts of community participation deriving from the primary health care model advocated by the World Health Organization since Alma-Ata (WHO, 2008). Admittedly, practical experience is ambivalent. Forty years after Alma-Ata, the record showed that, so far, “[c]ommunity participation and intersectoral engagement seem to be the weakest strands in primary health care” (Lawn *et al*, 2008). However, two factors may change the context of this concept substantially: 1. at times of rapid global communication, “local” may no longer have the strictly geographical meaning it had in the 1970s. Discussing Illich’s legacy in 2002, Moynihan and Smith argued that with the possibilities of the internet and broad-based discussions on medicalization, the suggestion that doctors “hand back power to patients, encourage self care and autonomy, call for better worldwide distribution of simple effective health care, resist the categorization of life’s problem as medical, promote the de-professionalisation of primary care and help decide which complex services should be available” was “no longer a radical agenda” (Moynihan and Smith, 2002). Thus, the “community” in community participation may have to be reconceptualized, adopting a more open and less parochial connotation. Regardless of geography, the goal is a structure of participatory and local management that would include a health system to be actively managed by citizens as a common good.



Thereby, this idea ties into a reconsideration of citizen participation and democracy at large. As globalization, rising populism and the growing complexity of challenges facing modern societies are tangibly undermining societal trust in the representative democracy of the last century, there is good reason to look for alternatives in order to avoid the loss of democratic values to less benign forms of government. A number of alternative and experimental forms have sprung up in recent years, including those born of a radical opposition to existing structures like the concept of inclusive democracy, developed by Takis Fotopoulos (1997) or the more recent camps of the Indignados. A similarly radical break with conventional democracy entails the replacement of some forms of election by sortition, whereby citizens are appointed at random by a lottery organized in a way to guarantee the representation of different societal groups (Van Reybrouck, 2016).¹ This method aims at increasing the integration of citizens in the process of governing their country, increasing rights as well as responsibilities. In consultative format, the idea is presently being tested with citizens' assemblies in Ireland, established in 2016. The courage to try innovative forms of democracy would provide a richer pool of possibilities when confronting the upcoming environmental, social, economic and health challenges of the twenty-first century.

Reduce inequality through redistribution

Given the obscene differences of income and wealth between rich and poor in the world, a reduction of global inequality is urgently called for, both because it is morally imperative and because it is necessary to prevent unrest (and increasing numbers of migrants). Besides, there is no doubt that a reduction of poverty and socio-economic disparity would dramatically increase population health in many countries. In 2008, the WHO Commission on Social Determinants of Health singled out a fair distribution of goods and services as a central health element, declaring flatly 'Social justice is a matter of life and death' (Commission, 2008, iii). Health equity has since taken a prominent role in international health discussions and formed the central theme of the 2011 World Conference on Social Determinants of Health in Rio de Janeiro (WHO, 2012). Similarly, the work done by Wilkinson and Pickett (2009) and Seeman *et al.*, (2014) indicates that, on national or local scales, relative deprivation seems at least as important as absolute poverty (Wilkinson and Pickett, 2009; Seeman *et al.*, 2014).

Recent developments towards more global equality have come with a dangerously high price. A case in point is the truly astounding rise out of poverty of an estimated 600 million people in China (Lakner and Milanovic,



2013), which has been bought with an increase in domestic inequality and with immense environmental degradation. By 2006 only one percent of the Chinese urban population lived in cities which met the air quality standards in particulate matter of the European Union. Air pollution has improved somewhat since but remains critical, as does water pollution (Zheng and Kahn, 2013). Given the far-reaching repercussions of this type of development for climate change, a repetition on a global scale is inconceivable.

Advocates of continued growth frequently acknowledge this fact but argue that it is possible to “grow out of” the burdens both of poverty and inequality, a belief that goes back to a curve suggested by future Nobel Prize laureate Simon Kuznets (1955). However, subsequent studies based on large datasets of countries have found little confirmation of the Kuznets’ inequality hypothesis, which appeared to be a function of a biased selection of very limited available data. Instead, income distribution seems to depend on regional and domestic politics rather than on overall income levels (Deininger and Squire, 1998; Palma, 2011). There is good evidence that, in the absence of strong redistributive features, economic growth inherently increases economic inequality (Piketty, 2013).

A reduction of income and – eventually – wealth inequality through redistribution is a central demand of degrowth scholarship, and given the assumed limits of overall growth, more equality will require some forms of redistribution. Proposals include establishing both regulations for both minimum and maximum incomes (Daly, 2013), redistribution of money through taxation (Jackson, 2009), a public stock system and, internationally, financial transfers, equal access to global commons and easier technology transfer from North to South (nef, 2010) or less clearly defined means (Latouche, 2006). Given the centrality of (in-)equality for health, the health community should get involved in pertinent discussions. On a global scale, a beginning has been made by the People’s Health Movement. Born from widespread disillusionment with the unfulfilled promises of the 1978 Alma-Ata conference, this grassroots movement formed in 2000 has since grown into a formidable organization active in over 70 countries. The demands listed in their People’s Health Charter (2000) include the replacement of growth-centred economic theories with ‘alternatives that create human and sustainable societies’ as well as far-reaching changes in global economic structures. Similarly, the ‘Italian Network for Health and Sustainability’, composed of 25 associations, which signed the ‘Bologna Manifesto for Sustainability and Health’ (<http://www.sostenibilitaesalute.org/wp-content/uploads/2014/06/Bologna-Manifesto2.pdf>) declared that: ‘the present prevailing paradigm... is unable to safeguard the health of present and future generations’ and called for ‘an alternative model, not only aimed at growth’ (Rete Sostenibilità e



Salute, 2014). In the long run, all partners in the health sector should address the question of which national and global distribution of income, wealth and opportunity they consider appropriate and which methods they endorse to get there. This is another way of saying that health workers should engage in debates about degrowth policies.

Conclusions

As the world is approaching its environmental and economic limits to growth, societies are not well prepared for what promises to be a transformation of similar magnitude as the industrial revolution some 200 years ago. Despite the many ways in which population health is affected, the health sector appears, as yet, curiously unaware of the challenges ahead. This paper is meant to be an early contribution to further more detailed studies about a broad range of topics. Unsolved questions include (but are by no means limited to) the following:

1. What is the adequate scale to which the economic output could or should be reduced? Which approximate level or range of levels of material well-being is most conducive to population health and how should it be measured?

In this context, it would be interesting to develop macro-economic models of degrowth that aim at capturing the short- and long-term effects of degrowth policies on health. Furthermore, it would be interesting on a micro-economic scale, to study small communities that are implementing a degrowth transition and to evaluate different health outcomes.

What indicator can be found that can adequately expresses the connection between health today and its relations to health (needs) of future generations? While it is clearly nonsensical to declare a specific one-size-fits-all number this does not undo the necessity to have some sense of where future development should be headed when it is no longer a continuous “more”.

2. How should sustainable health be envisaged? Which level of health is an ethically defensible norm? Specifically, what is the minimum of material consumption within homes, hospitals and public spaces required for sustainable health? In other words, what degree of production, consumption, waste production and inequality will be socially acceptable because the benefits are believed to outweigh its harm? Unlike for degrowth, whose implementation has not been seriously attempted anywhere to far, the public health community has faced somewhat similar considerations in real life in difficult negotiations about primary health care or essential



drugs, and the experience gained may prove useful for similar efforts in a broader socio-economic context.

3. From which threshold onwards does medicalization become counterproductive? Which amount of resources is it ethical to spend on new and expensive technologies, using funds that are thereby unavailable for primary health care purposes?
4. What are the trajectories and the extent of physical, social and cultural iatrogenesis?
5. What new forms of medical research and of democracy can more effectively serve the therapeutic and preventive health needs of populations in different countries without requiring high and rising revenues?
6. How can lives be shaped in healthful and fulfilling ways in which increasing productivity is not translated into rising incomes but increasing free time?
7. Where are degrowth and health agendas easily complementary, where do they seem contradictory and how can those differences be reconciled?
8. How can a shift towards a more holistic and less mechanistic understanding of health and healthcare be encouraged?
9. Finally how can the resulting findings be effectively translated into policies and grassroots actions in order to promote a transition towards a more sustainable and healthy society?

Seeking answers to these questions will require interdisciplinary cooperation, and hopefully, activists and scholars on both sides will recognize that their causes are interlinked. No degrowth transformation will be successful if it ignores the health needs of the people whose lives it is designed to improve, and in the face of foreseeable environmental and economic crisis in the wake of fading economic growth no public health policy will be successful if it ignores the socio-economic and environmental determinants of health. So far, discussions along those lines tend to be limited to fringe groups of both communities, such as the People's Health Movement and the 'Italian Network for Health and Sustainability', cited above. This paper argues that it is time for discussions on degrowth to enter the mainstream medical and health community and for doctors and other health workers to acknowledge that they have a significant role to play and important experience to contribute when our societies face the upcoming challenge of no-longer growing economies.

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Note

- 1 Assemblies of 99 randomly selected citizens are discussing five important policy issues, hearing a broad range of pertinent information, and will subsequently provide reports and – non-binding – recommendations to the Irish parliament. Three of these issues, abortion, an ageing population and climate change, have clear public health implications. (<https://www.citizensassembly.ie/en/Home/>).

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