

Ian Gough

Heat, Greed and Human Need: Climate Change, Capitalism and Sustainable Wellbeing

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Introduction

Ian Gough's new book, "Heat, greed and human need", examines how global society may balance an economic development that remains within planetary biophysical limits with sustainable well-being. To this end, Gough frames climate change as a question of equity and social justice. Social justice adds an additional layer of complexity to the climate change problem. In addition to reducing CO₂ emissions, policies will have to counteract existing inequalities, which otherwise will be further amplified by climate change.

The first part of the book sets the stage for discussing these ideas. In particular, the book frames sustainable development as an integration of social, economic, and environmental goals—a policy vision that lies at the heart of the book. To resolve priority conflicts between these goals, the core distinction between necessities and luxuries is made. While necessities encompass goods and services that are inseparable from a basic level of wellbeing, luxuries are a surplus to this requirement.

The second part of the book advances three policy proposals to combat climate change: a) increasing eco-efficiency of production, b) restructuring consumption, c) fundamental reforms towards a degrowth economy.

The book concludes with a description of a step-wise transition from a neo-liberal capitalism that centers on growth and consumption towards a welfare system centered on sustainable wellbeing.

The premise: Anthropogenic climate change and its consequences on human wellbeing

Victor Garcia

Gough begins by giving a compendium on the impacts of environmental degradation. Climate change is but one out of nine processes identified by the Stockholm Resilience Center (SRC) that threaten the Earth system (Rockström, et al., 2009). The SRC outlines "planetary boundaries" for all of these nine processes which, when exceeded, may induce irreversible environmental change. Four of these processes already exceed safe boundaries. One of them, climate change, is especially alarming due to its nature as a threat multiplier.

Earth's atmosphere is warming, and it is the total amount of emitted greenhouse gases (GHGs) that matters for the end amount of warming. Climate physicists have therefore begun to relate levels of warming to a "carbon budget". Remaining under two degrees of warming relative to preindustrial levels with a probability of at least two thirds presupposes that emissions do not exceed a carbon budget of around 740 Gt (gigatonnes) of GHGs starting from mid-2018. At current rates, this carbon budget will be exhausted in 18 years. In terms of GHGs, the average person emits around seven tonnes per year. To stay below two degrees warming, net emissions of all GHG will have to reach zero by 2070 and then turn negative (which may be accomplished by extracting CO₂ from the atmosphere).

Gough also revisits how climate change threatens human wellbeing. To this end, he closely follows the Intergovernmental Panel on Climate Change's reports. Altered weather patterns (drought, floods and heat waves) will adversely affect human health by heat stress, and increase morbidity and mortality.

Indirect hazards comprise air pollution and threats to nutrition. Gough presciently delves into the conflict-inciting repercussions of climate change that may arise from the displacement of people by sea level rise. Additionally, the exhaustion of natural resources in the more climate-afflicted global South is likely to increase tensions over the right of their use. Gough also shortly ventures into examining so-called fat-tail risks: the risk of exceeding four degrees Celsius or more warming towards the end of this century. Gough echoes expert assessments that such new state of the climate system would likely be incompatible with the current organization of our civilization.

This sobering depiction of possible threats, important as it is, probably still underestimates how concerning and woefully understudied the mentioned fat-tail risks are. In recent years, researchers have begun to explore climate tipping points. Tipping points are thresholds that demarcate relatively abrupt and potentially irreversible changes in the state of the climate system. Tim Lenton (University of Exeter) has compiled a list of several subsystems of the climate at risk of tipping if warming continues (Lenton, et al., 2008). For example, Southwest North America is likely already experiencing a shift to very arid conditions, similar to permanent drought conditions (Lenton, et al., 2009). How much the triggering of a tipping point affects the triggering of another, potentially inducing a tipping point cascade, is currently being studied (Lenton, 2013; Cai, et al., 2016). The economic costs of the concomitant high-warming scenarios defy reasonable attempts at estimation (Wagner & Weitzman, 2016).

While Gough acknowledges the importance of a Green Growth strategy, he deems it insufficient to attain the necessary sustainable-economy transformation on its own. However, the very encouraging trends in the renewable energy sector should figure more prominently in policy discussions. Levelized costs of energy from renewables are now undercutting fossil-based energy costs in large parts of the United States (Lazard, 2017), let alone world regions with high solar irradiation levels. The scaling up of renewables heralds further cost and efficiency improvements. Photovoltaics promise much broader employability due to major technological advances. In parallel to this trend, remarkable strides have been made in battery storage, both in the cost per unit of energy as well as per unit of mass. These megatrends make the rationale for a rapid deployment of renewables increasingly palatable to an ever wider circle of interest groups. And indeed, emissions-free energy will be direly needed: Staying under two degrees will require some carbon capture and storage (CCS) technology, which will likely be energy-intensive.

References

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The link between social inequality and climate change

Isabel Baumann

One of the main questions of Gough's book is how social inequalities – between and within countries – reinforce climate change and are exacerbated by it. On the one hand, richer individuals and countries emit more greenhouse gases (GHG) than the poorer. On the other hand, poorer individuals and countries will suffer more strongly from the consequences of climate change than the richer. Gough designates these mechanisms as the “double injustice” of climate change.

The rich countries of the global North are responsible for the bulk of the GHG emissions since the dawn of industrialization. GHGs have a long life-time in the atmosphere until they decompose: some remain up to a thousand years while CO₂ lasts for about one hundred years. The countries that industrialized first have contributed the majority of the stock of accumulated atmospheric GHGs. Europe and the US are estimated to have contributed over half of the currently accumulated emissions. Since 1980, the contribution of the Northern countries to yearly emissions has stabilized (Chancel and Piketty 2015). Over the same period and particularly since the late 1990s, the emissions of emerging countries have overtaken those of the Northern countries. China is now the world's largest emitter of CO₂.

Yet this only concerns *production*-based emissions. To obtain a more accurate picture of the international responsibilities for GHG emissions, scholars recommend using *consumption*-based emissions. This metric also captures the outsourcing of manufacturing from richer to poorer countries. In terms of consumption-based yearly emissions, strong disparities between world regions emerge: an average of 22 tonnes of CO₂ per person in Northern America, 13 tonnes in Western Europe, 6 tonnes in China and 2 tonnes in South Asia and Africa (Chancel and Piketty 2015).

While the rich countries of the global North bear the primary responsibility for climate change, they are expected to experience less harm by it. This is due to the geographic clustering of richer countries in more temperate regions, where a temperature increase will even have positive effects on agricultural production or reduce heating costs for buildings. Another reason is that the Northern countries can harness greater economic resources to adapt to adverse direct consequences of climate change such as higher temperatures, droughts, storms or floods.

Gough goes on to discuss whether an analogous “double injustice” to that unfolding on a global scale exists *within* countries. The reader would expect a description of how social classes differentially contribute to climate change. However, this issue is not covered. Instead, Gough discusses whether unequal societies pollute more than equal ones. Interestingly, this seems to depend on the absolute level of wealth of a country: in richer countries, inequality leads to status competition, which amplifies consumption and hinders collective action to address climate change. In poorer countries, inequality goes along with a large share of the population living in conditions that are so precarious that the covering of their needs barely causes emissions.

The detrimental impacts of climate change are experienced with different intensity within countries. In fact, climate change mitigation policies may place the heaviest burden on the most vulnerable social classes. For instance, a carbon tax on fossil fuels will place a disproportionate burden on the budgets of low-income households. Gough argues that they not only tend to have higher absolute costs for services such as heating or cooling houses – due to more time spent at home. Energy bills also make up a larger share of their total budget. Mitigation policies therefore leave behind less affluent households with fewer resources for other expenditures such as food or resources to cope with adverse environmental circumstances.

Summarizing, Gough offers a state of the art review about how social inequalities are linked to climate change. Indeed, recent studies further corroborate the narrative presented on how income inequalities ramify into climate policy (e.g. Knight et al. 2017).

References

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Policy proposals to combat climate change

Florence A. Metz

In the latter part of his book, Gough offers policy proposals for climate change mitigation in rich Northern countries. He argues that the rich world commands an important share of global wealth and income and is, therefore, well-placed to fund mitigation policies. These mitigation policies have to be built on a stable legal framework both to promote long-term oriented decarbonization and to countervail the short-termism of election cycles and business pressures. Gough examines how mitigation policies could be embedded in such a stable legal framework in three areas of society: production, consumption, and institutions.

Gough's production-side oriented policies rest on three pillars: carbon pricing, public regulation, and green investments. Carbon pricing -the first pillar- originates from the idea that in market economies, the prices of goods should appropriately reflect the costs of their production to the environment. Even though carbon taxes may incentivize actors to reduce emissions, they may give rise to problematic distributional effects, for example in the form of energy poverty of low-income households. Similarly, cap-and-trade schemes lead to complex regulatory landscapes that are impossible to evaluate in terms of their effectiveness. While Gough takes a rather critical stance on carbon pricing, he considers public regulation -the second pillar- and the setting of standards, such as the EU labeling of electrical appliances, the "unsung success story of decarbonization". Moving to the third pillar, Gough calls for more public investments to support a new green industrial revolution. The German example shows that green investments in energy production, supported by public credit banking within a well-balanced policy framework, greatly accelerate renewable energy adoption and improve energy efficiency. However, Gough presents data showing that to date, green investments fall short of what is needed to attain the 2°C target. Lastly, Gough analyzes whether certain types of decarbonization policies secure both environmental protection and social equality—policies labeled as "eco-social". He sees potential in creating co-benefits between ecological and social goals via housing policies. Housing accounts for about 25 per cent of total emissions in OECD countries. Reducing emissions from housing would not only further the climate agenda, but also reduce low-income households' energy bills.

Gough argues that the eightfold decarbonization required across the globe to mitigate climate change will not only need to comprise production-oriented, but also consumption-targeted policies. Policy interventions should seek to recompose or change consumption patterns and to reduce total consumption in the North. Gough envisions "a consumption corridor between minimum standards, allowing every individual to live a good life, and maximum standards, ensuring a limit on every individual's use of natural and social resources in order to guarantee a good life for others in the present and in the future". Steering consumption levels into this corridor requires state intervention to overcome system lock-in, corporate resistance, and difficulties in changing behavior. To fix the lower bound of the corridor, Gough draws from a self-developed theory of universal human needs. To this end, it is important to consider that basic necessities are on average more carbon-intensive than non-necessities or luxuries. Taxation of high-carbon luxuries in the form of a smart Value Added Tax (VAT) could be used to fix the upper bound. Accordingly, goods with high carbon footprints would attract high VAT rates, while low-carbon goods would be taxed at low or negative rates. Furthermore, Gough argues that strengthening public services, such as health, education, or energy supply, bears great potential for achieving eco-social goals. The reason is that welfare states that are dominantly publicly funded emit

less carbon than states with mostly privately funded services. Gough also highlights the option of rationing personal carbon allowances, but points to problems of fairness and administrative feasibility in its implementation.

Decarbonizing production and consumption are both necessary, but -according to Gough- insufficient to achieve net-zero emissions by 2050 as set by the Paris Agreement. He concludes that our societies and economies will have to undergo deep reforms towards a degrowth era. The argument for degrowth is underpinned by the observation that subjective wellbeing decouples from economic growth beyond a certain point and flatlines thereafter. Beyond a certain level of financial security, continual income growth does not improve factors of happiness such as social relationships, work, health, or personal freedom. He calls for a carefully designed reform away from neo-liberal capitalism and towards sustainable welfare capitalism. Next to publicly supported green investments, he revisits policies of slowing down population growth, and makes a case for spreading the ownership of wealth and reduced working time. Although Gough acknowledges that degrowth “appears to bear a political non-starter”, he argues that planned transitions are preferable to the business-as-usual mode with potential catastrophic changes leading to migrations, political instabilities, and fortress states.

Conclusion

In his book, Gough offers an impressive synthesis of ideas drawn from wholly disparate areas of academic research and distilling them into clear-cut suggestions on how to move forward in the climate crisis. Given the urgency of the climate challenge and its complexity, such approaches are laudable and welcome.

If one may take issue with the book, it is perhaps with the spirit that the reader intuitively may have been written in. Gough’s analyses seem close to both technological skepticism as well as consumptive abstinence, although in fairness, he does never state so explicitly. Technological skepticism may turn out to be woefully inappropriate. Improved technology often means higher efficiencies, which in turn can mean using less resources to obtain the same outcome. Indeed, if our civilization abstained from current-level consumption, resource use would plummet. Gough’s consumption reduction proposals must find political majorities to be implemented, which depend on individuals’ preferences. However, moral and political appeals to restrain consumption have been and remain ineffective. The economic incentive structure we inhabit appears to preclude that they work. To overcome this, we need to deploy policy that first creates political bargaining contexts in which more rational decision making becomes possible and probable.