



Surveys

Mechanisms explaining the impact of economic inequality on environmental deterioration



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ABSTRACT

Rising economic inequality, often considered intrinsically harmful, is increasingly being viewed as having a number of secondary impacts as well, including impacts on health and economic growth. The ongoing nature of today's environmental crisis also raises questions about inequality's role in environmental deterioration. Despite the large number of papers that have been written on this topic, no theoretical or empirical consensus presently exists. Firstly, our article identifies that authors' conclusions in this area depend on their hypotheses regarding 1) the relationship between individual income and individual environmental pressure, 2) the impact of inequality on the social norms that influence individual environmental pressure, 3) the interests that social groups have in degrading or protecting the environment, 4) how these interests play out in terms of political demands, and 5) how these political demands translate into political decisions. Secondly, the study shows that, despite enabling a general test of the causal relationship between inequality and the environment, the empirical methods utilised do not account for the full range of theoretical mechanisms in play. Hence the suggestion that a research programme be launched to conduct empirical studies of the five aforementioned hypotheses by applying a recursive approach.

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1. Introduction

The contemporary period is characterised by intensification of global social and environmental crises. The social crisis has manifested in rising economic inequality since the 1980s in most countries worldwide, with levels sometimes approximating those seen in the United States in the early 20th century (Piketty, 2014; OECD, 2011, 2014). The environmental crisis has manifested, especially since the 1950s, in the rapid rise in environmental pressures¹ (Steffen et al., 2011), resulting notably into widespread changes in natural ecosystems (Millennium Ecosystem Assessment, 2005) and climatic disturbances (IPCC, 2013). The simultaneous worsening of each of these crises raises a question as to whether they are mutually reinforcing. It is against this background that an environmental justice literature analyses how, and to what extent, the environmental crisis reinforces social inequality by superimposing environmental inequality onto economic inequality (Laurent, 2011). In particular, this literature shows that poor people are highly dependent on their environment and suffer more from the effects of pollution (Martinez-Alier, 2002) and climate change (Olsson et al., 2014). In the opposite way, the social crisis could exacerbate the environmental crisis

and prevent its resolution. Indeed, some studies analyse how social inequalities usually inhibit cooperation in the case of local common-pool resource management (Baland et al., 2007). However, this literature does not explore the impact of the social crisis on the environment at a larger scale, i.e. the national or regional level. A number of studies investigate this last phenomenon by analysing the effects of economic inequality on environmental policies and pressures.

Despite many different contributions, this literature has yet to reach a theoretical or empirical consensus. From a theoretical perspective, Boyce (1994), Magnani (2000) and Wilkinson and Pickett (2010) propose a variety of original explanations that imply that inequality negatively affects the environment. Scruggs (1998) and Heerink et al. (2001) develop explanations defending the opposite view. In the first group, Wilkinson and Pickett (2010) consider that inequality has led to individuals adopting consumerist and individualistic behaviours toward the environment. Magnani (2000) theorises that inequality means poorer median segments, hence policies promoting growth rather than environmental protection. Lastly, according to Boyce (1994), inequality reinforces the power of the affluent, who has no interest in protecting the environment. In the second group, Heerink et al. (2001) consider that inequality implies a concentration of wealth amongst the affluent, whose economic behaviours generate fewer environmental pressures. Scruggs (1998) asserts that by concentrating power in situations of great inequality, affluent groups actually encourage environmental protection policies. Such a range of explanations implies that there is a competition between them. The present paper develops

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¹ The rest of the paper uses terms such as environmental deterioration or pressure to refer both to the overuse of resources and to pollution.

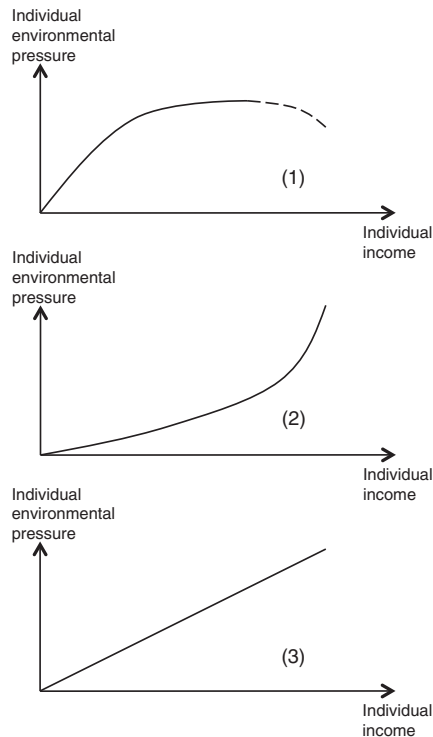


Fig. 1. Individual environmental pressures and incomes.
Source: authors, adapted from *Scruggs (1998)*.

an analytical structure that helps detecting the mechanisms that participate to the differentiation of the explanations. Furthermore, it demonstrates the necessity of comparing such mechanisms using observable data. Existing empirical studies can help to substantiate the hypothesis that inequality adds to environmental deterioration, but they have not been conducted at a sufficiently detailed level to advance understanding of which mechanisms are actually at work.

The rest of the paper is organised as follows. *Section 2* offers a theoretical structure of this field and compares existing developments. *Section 3* analyses empirical studies' contributions and limitations. *Section 4* offers a conclusion.

2. From Inequality to Environmental Pressure: Structuring a Theoretical Field

The present section summarises and compares theories explaining how economic inequality impacts environmental quality and places them within a coherent framework. *Boyce (1994)* is one of the first to focus on inequality as a potential cause of environmental deterioration. After the answer proposed by *Scruggs (1998)*, some authors attempted to integrate these opposing analyses (*Boyce, 2003, 2007; Heerink et al., 2001*). Nevertheless, academic literature would subsequently hone in on this topic without taking into account the full range of conceived mechanisms. The theoretical literature can be structured in two channels relating inequality and environmental pressure: one based upon the economic behaviours of households (*Section 2.1*); and the second based upon the determination of environmental policies (*Section 2.2*).

2.1. How Income Distribution Affects Environmental Pressure Through the Economic Behaviour of Households

Economic behaviours of households, based mainly on consumption of goods and services, have a direct influence on environmental pressure. By influencing the level and content of aggregate consumption, the level of inequality impacts environmental pressure.

2.1.1. Methodological Individualist Approaches: Environmental Pressures Aggregated From Individual Economic Choices

In an approach based on methodological individualism, *Scruggs (1998)* shows that the effect of income distribution on environmental pressures depends upon the relationship between environmental degradation and income at the individual level. The author envisions three types of relationships that determine how variations in income inequality affect aggregate pressure (*Fig. 1*).

These three situations differ in the way they describe how individual income level affects environmental pressures through individual economic behaviour. All these relationships assume that environmental pressure increases in line with income (except for the area covered by the dotted lines in Situation 1). However, they each provide a different hypothesis regarding the direction of the marginal variation in environmental pressure. In Situation 1, the curve is concave, signifying a marginal decrease in environmental pressure. In this case, a poorer person's utilisation of an additional unit of income generates greater environmental pressure than the utilisation of this unit by a more affluent person. A society in which affluent persons have extra income at their disposal would therefore, *ceteris paribus*, generate less environmental pressure than a benchmark society might do. In other words, the direction of the marginal variation in environmental pressure fundamentally determines how inequality affects aggregate environmental pressures as they relate to economic choices.² In Situation 1, increased inequality results in reduced environmental pressures. Situation 2 is the opposite, with marginal environmental pressure here increasing for each individual, which implies a society where less inequality generates fewer aggregate environmental pressures. Lastly, Situation 3 is an intermediary case where income redistribution has no impact on environmental deterioration as long as global revenue remains the same.

Having adopted this approach, *Scruggs (1998)* and *Heerink et al. (2001)* consider that Situation 1 is the most representative of reality. To justify this hypothesis, they assume that environmental quality is a superior good, i.e. one whose demand increases at an increasing rate as income rises. In this way, *Scruggs (1998)* utilises Inglehart's post-materialism theory (*Inglehart, 1990*), which holds that a minimum level of affluence and satisfaction of material needs are required for environmental preferences to materialise. Moreover, to explain the first curve, *Heerink et al. (2001)* claim that affluent households are able to substitute polluting goods with environmentally friendly goods.³ Given this hypothesis, *Heerink et al. (2001)* consider supplementing the first curve with a decreasing segment beyond a certain income threshold so as to draw an environmental Kuznets curve at the level of an individual household (see the section with a dotted line in *Fig. 1*). The idea is that more affluent households are associated with lower levels of individual environmental pressure. However, even if post-materialist values develop as income increases, they do not necessarily lead to changes in consumption behaviour. For instance, according to *Fleurbaey et al. (2014)*, environmental values explain approximately 20% of the environmental behaviour leading to greenhouse gas (GHG) emissions. This value–action gap can be explained by the competition between the environmental concerns with other concerns, such as specific kinds of consumption in which affluent people engage as their desire and ability to reach a higher standard of living increases (more energy intensive transportation and housing, etc.). Other explanations for the value–action gap include consumer misinformation about the ecological impacts of their pro-environmental behaviour (named behaviour–impact gap, see *Csutora, 2012*). Furthermore, other arguments can relativise the reality of Situation 1. In particular, *Roca*

² *Heerink and Folmer (1994)* formally demonstrate the links between the level of inequality and the average level of an output in case of non-linear relationships between income and this output at the individual level.

³ The analysis developed here can apply to the environmental pressure due to consumption by normal households or individual producers during their production process. Regarding the second household type, *Heerink et al. (2001)* evoke the example of agricultural households in developing countries (*Heerink et al., 2001: 360–361*).

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