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Analysis

Unifying Studies of Scarcity, Abundance, and Sufficiency

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ABSTRACT

This paper advances the idea that socio-ecological inquiry could benefit more by analyzing the dynamics between states of scarcity, abundance, and sufficiency (SAS), instead of viewing them as distinct branches of inquiry. The paper identifies three weaknesses in the literature: postulating scarcity, normative opposition of SAS, and conceptual entanglement. In bridging these, the paper proposes a unified agenda for SAS studies. This agenda includes: (a) a definition of the cases (population) of SAS; (b) a causal map of the determinants of SAS; (c) an outline of key strategies individuals employ to handle SAS. This agenda relies on the language of probability to systematize SAS studies. This approach subsumes the allocation problem of neoclassical economics within a super-set of problems. Recalibrating socio-ecological inquiry to research the dynamics of scarcity, abundance, and sufficiency will not only cast new light on old problems, but also discover new problems that traditionally have been reserved for neoclassical economics.

1. Introduction

Scarcity occupies a fundamental position in many ecological, economic and social theories. Yet, the state of the art suffers from a set of limitations related to this concept that is likely holding back our understanding of the relationship between society, ecology, and the economy. One limitation refers to the multitude of scarcity concepts, leading to conceptual entanglement. For example, building on the Marginalist and Lionel Robbins' work, neoclassical economics studies the allocation of scarce resources in markets. Without scarcity, "...all goods would be free, like sand in the desert or seawater at the beach. All prices would be zero, and markets would be unnecessary. Indeed, economics would no longer be a useful subject" (Samuelson and Nordhaus 2001, p. 4). Neoclassical analyses contribute to our understanding by revealing the mechanisms leading to efficient (market) allocation. Scholars have dubbed this version of scarcity, as relative: allocation of a scarce resource among competing ends. Based on critical insights from neo-Malthusianism, ecological economics, on the other hand, recognizes that markets are only one mechanism for allocation. In this perspective, the economy embeds itself in a larger finite physical system—the earth—which sets an ultimate limit, an absolute scarcity, for the economy. Traditional macroeconomic policies as perpetual economic growth constitute therefore an impossible goal. In ecological economics, "...optimal scale replaces growth as a goal, followed by fair distribution and efficient allocation, in that order." (Daly and Farley,

2011, p. xxxvi). Although absolute and relative scarcities appear to be useful (Baumgartner et al., 2006; Daoud, 2010), it remains unclear how these scarcities interact and if they are indeed distinct. Besides these two scarcities, scholars have suggested the usefulness of artificial-, social-, macro-, micro-, subjective-scarcity (see Section 2.3), to mention some other varieties.

A second limitation of the state of the art follows from the motivation of scarcity approaches. Several of them, most notably the neoclassical approach, lack an explanatory stance of why scarcity arises in the first place; for ecological economics, the laws of thermodynamics offer the physical explanation (Daly and Farley, 2011, p. 493), but remain unclear about the sociocultural dimension driving scarcity (Daoud, 2010). Scholars tend to assume scarcity to either warrant their approach valid or without enough (empirical) justification.

A third element refers to the relationship between scarcity, abundance, and sufficiency. A branch of studies questions the relevance of scarcity economics,"...the evidence is overwhelming that the study of scarcity in the short run obscures rather than illuminates the most important facts, trends, and issues of modern economies" (Dugger and Peach, 2009, p. x). Although this branch's contributions are significant, its studies tend to fall into a kind of Manichean opposition—a duality between good and evil, in our case a trinity between the three states of SAS, favoring the one over the others (Alford, 2006; Dugger and Peach, 2009; Hoeschele, 2008; Peach and Dugger, 2006; Princen, 2005).

Instead of perceiving scarcity, abundance, and sufficiency (SAS) as

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fundamentally different entities, this paper presents the notion that SAS is the same ontological entity—a potential feature of virtually all resources—but which can cause different events, from fueling famines to enabling markets. Motivated by this notion, this article develops a conceptual framework enabling a unified agenda for the study of SAS. One of the first principles of this agenda is to explain how events of SAS arise rather than postulating or naturalizing their existence (often, scarcity) (Panayotakis, 2013; Daoud, 2011a). Instead of ingraining socio-ecological theories on one of the assumptions of scarcity (Menger, 1871), abundance (Dugger and Peach, 2009), or sufficiency (Princen, 2005), I propose that these theories can benefit more by gravitating around the dynamics of SAS.

In articulating this agenda, I theorize about three components: (a) identify the SAS population by asking, "what is a case of SAS?" (Ragin, 1987); (b) sketch a causal map that explicitly defines the chain of causality of SAS (Daoud, 2011a; Panayotakis, 2011); and (c) outline strategies that agents use to deal with the three SAS states (Abbott, 2014). I formalize these three components with the help of the language of probability, which will facilitate a new branch of SAS studies.

I articulate this agenda at an ontological level to enable scholars to apply it in a variety of settings: from consumer society to hunter—gatherers. As the underlying mechanisms driving SAS will be radically different due to context, this unified agenda will need to be complemented with relevant theories. I will use a famine case as my primary running example, to concretize my argument.

Given limited space, I can only outline the necessary parts of this agenda, its internal logic, its lineage, and its limitations. For the rest, I invite scholars to explore these issues with me.

2. The State of the Art on Scarcity, Abundance, and Sufficiency

I start with giving an initial definition of scarcity, abundance, and sufficiency. Although various frameworks define scarcity differently, many of them will share the following quantitative characteristics. Scarcity arises in the relationship between a need or want for a good, and its satisfier (resources). When the requirements exceed what is available in a given system, scarcity will emerge. Abundance arises in the reversed situation. Sufficiency occurs when requirements and goods balance. Hence, a limited resource does not automatically equal a scarce resource. If there is demand at all, then none of these phenomena arises. For example, if there are millions of books in a library, but no one wants to read them, then scarcity, abundance, or sufficiency does not exist at all. The books are redundant. I will further refine this definition and its dynamics in Section 3.

2.1. Limitation I: The Ubiquitous Assumption of Scarcity

Scarcity forms the central point of departure for neoclassical economics. All three pioneers of marginal utility theory—Walras, Jevons, and Menger—defined scarcity as the starting point for economic analysis (Jevons, 1888, p. 37; Menger, 1871, p. 94; Walras, 1954, p. 65). Through these pioneers, scarcity became an essential premise for the advancement of economics. Even though economics has become increasingly differentiated, scarcity remains a crucial ingredient. For example, the concept plays a vital role in behavioral economics in the form of a cognitive limit (Bertrand et al., 2004; Mullainathan and Shafir, 2013; Shah et al., 2012). Compared to neoclassical economics, social theory has limited reasons to focalize scarcity yet it appears as an essential assumption.

2.1.1. Conflict Theory and the Assumption of Scarcity

Hobbes' problem of social order has influenced both classical theorizing and contemporary social theorizing to assume scarcity. Hobbes claims "...if any two men desire the same thing, which nevertheless they cannot both enjoy, they become enemies; and in the way to their end, which is principally their own conservation, and sometimes their delectation only, endeavor to destroy, or subdue one another." (Hobbes, 1839, p. 111; cf. Parsons, 1949, p. 89). Based on these notions, conflict theory regards armed conflicts a result of an escalation of a dispute about how to divide society's resources (Dobkowski and Wallimann, 2002, p. vii; Gleditsch, 1998; Homer-Dixon, 1999). All four sociological classics refer to this issue, as the problem of social order (Durkheim, 1979, pp. 248–249; Marx, 1978; Simmel, 2011, pp. 75–76; Weber, 1949, pp. 63–64). If scarcity is ubiquitous and conflict follows from it, then how can society exist? That is, how can social order or cohesion (society) be maintained despite resource inequality (Hirschman, 1997; Turner, 1975). Scholars have proposed two resolutions.

The first is given by Hobbes, and echoed by social Darwinism (Hardin, 1974). The only actor that can maintain peace and security amid scarcity is a strong state—the Leviathan. Parsons, most notably, advance the second solution. Inequality can be legitimized by the socialization of individuals to internalize the social contract between society's classes (Parsons, 1949, p. 89). This internalized solidarity glues individuals and social groups together (Turner and Rojek, 2001, p. ix).

Despite the centrality of the scarcity assumption in social theory, several scholars have argued that this assumption is misplaced in contemporary affluent societies (Galbraith, 1958; Xenos, 1989). Additionally, recent empirical research questions the link between scarcity and conflict. Studies find that resource (e.g., in land, water, and environmental degradation) scarcities have insignificant effects on the onset of conflicts (Benjaminsen et al., 2009; Dinar, 2011; Hassani-Mahmooei and Parris, 2013; Raleigh and Urdal, 2007). The threat of scarcity can force rivaling parties to find joint solutions to scarcity problems and thus incentivize them to cooperate (Dinar, 2009). Moreover, conflict can arise amid abundance (Gleditsch, 1998; Maxwell and Reuveny, 2000). These insights call for a more in-depth theorizing about how scarcity relates to abundance and sufficiency.

2.2. Limitation II: The Manichean Opposition Between Scarcity, Abundance, and Sufficiency

Some scholars argue that abundance and sufficiency have significant explanatory power (Czarniawska and Löfgren, 2014; Diamandis and Kotler, 2012; Mehta, 2013). Chase illustrated this point:

...let us transport ... two men to a row-boat on Lake Superior. Again they are lost, and again one has a full bottle of water, and one a bottle a quarter full. The full bottle man refuses to share and a battle ensues. Maniacs! There is a plenty of fresh water over the side of the boat. The desert is the Economy of Scarcity; the lake, the Economy of Abundance. The choice between sharing or fighting is chronic in the former, pointless in the latter. Today, throughout western civilization, men in boats are fighting, or preparing to fight, for fresh water. They do not know they are in boats; they think they are still on camels. The lake...is not limitless, but nobody need go thirsty.

Chase (1934, p. 51)

In line with Chase's argument, several researchers have launched studies about abundance and sufficiency (Benammar, 1999; Bronfenbrenner, 1962; Dugger and Peach, 2009; Fricker, 1999; Galbraith, 1958; Hoeschele, 2008; Horner, 1997; Sheehan, 2010; Sherburne, 1972). These studies have, for example, focused on the following: *unemployment* as abundance of labor power instead of scarcity of jobs (Dugger and Peach, 2009, p. 41; Perelman, 1979, 1987); consumer society with its cornucopia of goods and services (Offer, 2006; Xenos, 1989); and on the relationship between post-scarcity society and *emancipator* reasoning (Bataille, 1991; Bookchin, 1971; Giddens, 1990; Gowdy, 1998; Sherburne, 1972; Stoekl, 2007). The Marxist economic theory goes further with its emancipatory reasoning. It is true that '... the original Marxian image of communism presumes a level of economic and technological achievement so advanced as to "abolish" both

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