



OPEN ACCESS

EDITED BY

Manu V. Mathai,
Azim Premji University, India

REVIEWED BY

Markus Wissen,
Berlin School of Economics and
Law, Germany
Rasigan Maharajh,
Tshwane University of Technology,
South Africa

*CORRESPONDENCE

Thomas Princen
tprincen@umich.edu

SPECIALTY SECTION

This article was submitted to
Sustainable Consumption,
a section of the journal
Frontiers in Sustainability

RECEIVED 29 May 2022

ACCEPTED 20 September 2022

PUBLISHED 02 November 2022

CITATION

Princen T (2022) Sufficiency and the
state: A prospective project.
Front. Sustain. 3:956139.
doi: 10.3389/frsus.2022.956139

COPYRIGHT

© 2022 Princen. This is an
open-access article distributed under
the terms of the [Creative Commons
Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use,
distribution or reproduction in other
forums is permitted, provided the
original author(s) and the copyright
owner(s) are credited and that the
original publication in this journal is
cited, in accordance with accepted
academic practice. No use, distribution
or reproduction is permitted which
does not comply with these terms.

Sufficiency and the state: A prospective project

Thomas Princen*

School for Environment and Sustainability, The University of Michigan, Ann Arbor, MI, United States

Sufficiency as a social organizing principle can be applied to individuals, organizations, and economies. But if the encompassing social structure, namely, the state, is still organized around expansionist principles like efficiency and growth, the outcome will be the same—excess, the exceeding of regenerative capacities biophysical and social, local to global. A prospective project of effecting fundamental social change argues that sufficiency must be applied to the state. From a natural resources perspective defining features of the state form are concentration and surplus both of which tend to excess and require endless frontiers. Re-organizing to counter this tendency and institutionalizing sufficiency requires imaginative politics. A long multicultural human history of reorganizing to adapt to environmental conditions bodes well. Resistance, though, even as the contradictions play out, is to be expected.

KEYWORDS

sufficiency, sustainability, the state, surplus, growth, transition, social change, politics

Introduction

Humans are creative, adaptive, innovative creatures. They explore and experiment, trying out this or that adaptation. They adapt to their biophysical environment and to their social environment, keeping what works (or is appealing or distinguishing in some way) and discarding that which does not. Among the things they create and discard is the very form of their social organization. If a chiefdom worked under one set of conditions—favorable rainfall and an enlightened leader, for instance—then, when those conditions change, they adopt a tribal form, say. Some adaptations are practical, solving a problem of food or shelter, or defense. Others are playful, just trying out things. In the end, the species keeps experimenting, adapting, and changing.

In modern times we moderns champion creativity in technology, the arts, leading-edge science, and finance. Curiously, we do not champion it in social organization. In fact, to be modern is to ascribe to one superior form of organization, call it the state, and dismiss other forms as backward or primitive or ancient, as ways of organizing that do not appreciate technologies and markets, efficiencies, and consumer choice, and above all, growth¹.

¹ To be clear, I am using mostly an anthropological definition of the state. I do not mean the modern state, except where so noted, nor the central or national or federal government where the state is set in opposition to civil society or “the people.” The state here is the *form* of social organization, just as is a chiefdom or tribe, neither of which refers to rulers or government. Also, by “modern” I mean the industrial era through to the present.

It is a comforting stance we moderns take, putting our own form of social organization—now industrial, consumerist, financialized—on a pinnacle, at the height of a historical, evolutionary progression of stages of development. It is a stance that justifies patterns of natural resource use that in recent decades have been shown without a doubt to be unsustainable and unjust. It justifies material flows that are exploitative of forests and fisheries, local communities, and “essential” workers. It disregards toxins, the permanent depletion of topsoil and groundwater, and greenhouse gasses. It treats resources and wastes sinks as infinitely regenerative, as mere inputs for which substitutes can always be found. And all along it concentrates wealth and power. In short, the modern state form is organized to extract, exploit, externalize and expand, which adds up to one thing—*excess*.

By excess I mean, in the first instance, on the biophysical side, the exceeding of regenerative capacities of natural resources and the assimilative capacities of waste sinks. The evidence is abundant (MacNeil and Engelke, 2016; International Energy Agency, 2021; IPCC, 2022). On the human side, the excess is the exceeding of social organizing capacities, especially as power concentrates and complexity increases. And it is the exceeding of psychological capacities, whether from mind-numbing work or inundation of information.

In this essay, I argue that modern, industrial, consumerist, growth-centric societies are extensions of a social system most generally known as the state. States are organized for *surplus* where the goal of that organization is the *concentration of wealth and power* (for which capitalism is only a recent manifestation)². The pattern of the state’s 6,000 history is a never-ending search for surplus which manifests as wealth and power which, in turn, leads to excess. The social organizing principles, explicit or implicit, are might-is-right, divine inspiration,

2 I posit the goal of the system to be the *concentration of wealth and power* rather than the accumulation or increase in wealth and power. The implication is that elites organize a state to enhance their wealth and power which, as two sides of the coin of influence, are both relative: more influence for elites arises not when the entire population is wealthier, let alone has more power (whatever that would be), but when elites are relatively wealthier or have relatively more sources of power than the masses. But elites cannot say so explicitly; they must sell wealth and power to their underlings and the masses as increase or accumulation or growth or just “greatness,” implying that everyone benefits. Increased wealth and power, or growth, then, is a rhetorical device to obscure and justify the concentration of wealth and power among the few.

My best read of the literature indicates that in the 6,000 history of the state a broad distribution was never the goal of those who organized states until, arguably, the last couple centuries. Even then, democracy and economic redistribution is a constant struggle. A broad distribution was, by contrast, a goal of other social forms such as the tribe and clan because such distribution enhanced production and reproduction, survival and intergenerational persistence. On this latter point, see Merchant (1989).

and expansion. The expansion principle has geographic and economic dimensions—colonization and growth. To organize under other principles, including a contrary principle of enough and too much, sufficiency, is anathema to the state form. Sufficiency, along with other principles that embody biophysical and social limits may, however, be essential to creating a social organizational form that conforms to the system goals of ecosystems, nutrient and hydrologic cycles, and the climate.

Before proceeding, I make three notes on theoretical and normative commitment, what I put under the rubric of a prospective project. One, if, as I argue shortly, sufficiency is most usefully constructed as a social organizing principle, as opposed to a social outcome (e.g., level of income), then the current organizational form, namely, the state should be a focus of inquiry. A focus on outcomes tends to accept the current social structure and to call for marginal changes (e.g., redistribute income). A focus on social organizing principle and hence structure tends to get to the root of the problem, here, excess. It opens the possibility of fundamental reorganization, or transformation, whether through reform or devising wholesale a new social form. Reorganization should thus be a part of the inquiry, not to mention a direction of experimentation in practice. This, anyway, is my theoretical commitment, at once future-oriented and normative. I project trends, in the first instance, biophysical, and assume tipping points and limits. I presume a desirable direction, namely, using resources without using them up, that is, sustainably. I further presume that no single organizing principle can meet all objectives and that, ideally, we who have the privilege to work on such matters (drawing on state surplus) should strive to create a suite of principles that address, say, sustainability, peace, prosperity, democracy, and human dignity.

Two, the issue here is not equity or inequality, or poverty alleviation. Those have long been topics of debate and conceptual development and, I presume, are well covered. Rather, the construction of a principle of sufficiency is ultimately, at the most encompassing structural level, about the state. The issue is the state’s propensity toward excess, that is, exceeding regenerative capacities both biophysical and social. No one can say if an entirely new form of social organization is necessary to address 21st-century excess. Maybe reform will be enough. What is clear, however, is that the 6,000-year history of expansionism, especially as it has played out geographically and biophysically, is no longer tenable. In the past, release valves for endless expansion were collapse and migration. Collapse (not to be equated with chaos and misery for everyone) was to demographic dispersion and some kind of decentralized form (Sale, 1980; Tainter, 1988; Scott, 2017). Migration was to habitable yet uninhabited lands. Both options are highly constrained now, if not impossible on a planet of eight billion people where productive lands are fully occupied and exploited.

Three, for many anthropologists, archaeologists, historians, political scientists, and others who examine the state, the

project is to (1) deconstruct the standard narrative, namely that, in one place, Mesopotamia, humans invented agriculture, settled down, built cities and monuments, which then evolved, or progressed, to modern society with other peoples trying to catch up; and (2) construct a counter-narrative that is more nuanced, contingent, variable, fluid and political and less socially evolutionary and self-congratulatory. The project is backward-looking with occasional nods to contemporary relevance³. For me, the project is to use those histories and that theorizing to aid in the 21st-century transition from a degrading world of humans dominating nature to a sustainable world of humans living with nature. Put differently, it is to find congruence between biophysical, ecological organization, and human social organization (Princen, 2014).

State surplus: A 6,000 year experiment

Considering the 4,000 year 6,000 year history of the state as a social form and grounding it in natural resources, three structural features distinguish the state from tribal and other forms. One is *concentration*—of people in cities, of livestock nearby, and, probably most consequentially early on, of staple crops, especially grains. A second is an *administration* and an administrative elite required by concentration. And the third, enabled by concentration and elite management, is *surplus*, assets beyond subsistence. Now, millennia after the first experiments with the state form, the surplus may be the most consequential and most problematic. A key process is extraction, both from natural resources and from the non-managerial population. The state is thus composed of two subpopulations, the *support population* that generates surplus and the *extractive population* that uses the surplus to organize, build, defend, raid, explore, subjugate, study, worship, and expand.

Students of the state—archaeologists, anthropologists, and political scientists—focus on the practices and organizational dynamics within and between states and concomitant inequities and human exploitation⁴. Here I focus on surplus, the locus

³ To be sure, some analysts who focus on explaining the past occasionally invoke the current human predicament and point to the future. For example, Graeber and Wengrow (2021) posit that, “if, as many are suggesting, our species’ future now hinges on our capacity to create something different (say, a system in which people are not told their needs are unimportant, or that their lives have no intrinsic worth), then what ultimately matters is whether we can rediscover the freedoms that make us human in the first place” (8). It is noteworthy that the authors’ normative goals for the future are buried in parentheses and barely revisited in their 692 pages of text and notes.

⁴ If this is not a fair one-sentence summary of the focus of vast amounts of various literatures, consider this assertion instead: Students of the state

of power in surplus seeking, and the imperative to expand. For the purpose of imagining a sustainable and just future, my prospective agenda, it is surplus and especially surplus seeking which is most implicated in the modern project of endless material expansion on a finite planet as well as the resistance to something like sufficiency⁵.

Nonstate peoples have long generated surpluses, that is, more than is needed to subsist. They extend the hunt, collect extra fiber and stone, and grow more crops than what they can consume immediately or trade or store for the winter. But the evidence indicates that they would spend that surplus quickly on a feast or potlatch or offerings to the gods. They would not accumulate it. Holders of surplus may gain influence but only temporarily, only in the ability to spend the surplus (Graeber and Wengrow, 2021, p. 43, 52). Otherwise, the surplus would either hamper nomadic peoples or disrupt social relations.

State formation, by contrast, allowed or enabled accumulation. Wheat or rice or corn is stored in closely managed, dutifully measured granaries. Pigs and cattle are herded and penned and bred to grow quickly. Forests are cut and grasses are collected and stored. All this requires management which requires yet more surplus. And more surplus can always be justified, even deemed essential, to maintain functions, buffer against future downturns (especially in food), reward innovation, suppress uprisings, defend against raiders. Moreover, the more that is done—more extraction, more workers, more organization—the more is required—that is, more surplus—to keep it all going. With the state form, self-reinforcing, amplifying, so-called “positive” feedback loops are built in. As well, the security dilemma arises almost unavoidably: the greater a state’s wealth the more attractive it is to others and the more it raises its defenses; the more it raises its defenses the more it threatens others the more they raise their defenses. One side’s defense becomes the other side’s threat. Defense and the requisite surplus ratchet up.

describe in exquisite detail the features of a state and its peoples and sometimes generalize to other states and peoples. Often they will claim that it is important to understand the historical and cultural nuances and patterns. But rare is it that they will then apply such understandings to the contemporary, 21st century human-ecological predicament. Rarer still is it that they will venture to say what actors *should* do given, say, the goal of a sustainable and just transition. It is precisely such prospective, normative theorizing that I am venturing here. On normative political theorizing, see Wapner (2000).

⁵ My focus on surplus is in contrast to what in anthropology and other fields seems to be an aversion to the very concept of surplus: one group’s surplus is another’s necessity; who are we outside observers to judge? For my purposes—understanding how state structure compels expansion and how the state is threatened by principles like sufficiency—this debate is beside the point, that is, the 21st century point of globally excessive throughput of material and energy.

With the state form, then, temporary or annual surplus seeking gives way to permanent or perennial surplus seeking. What is more, surplus seeking has no bounds. In fact, it engenders a more-is-better behavioral pattern and organizational imperative that offers great rewards (for some) and great risks, namely collapse (which all systems dominated by positive feedback loops eventually do). As a result, satiety or enoughness is an alien notion in the state structure. And this has been so historically, for millennia, well prior to capitalism and consumerism (Heilbroner, 1985). By implication, and to preview my prospective argument, a notion of sufficiency is not just anathema to the state, but a threat to the state.

Surplus seeking also engenders structural differentiation and associated power imbalance. As noted, from a natural resource perspective, the state is composed of two subpopulations, the *support population* that generates surplus and the *elite population* that uses the surplus to organize, defend, and expand. Because elite managers do not themselves generate a surplus (they don't grow the wheat or tend the pigs) the elites' first task is building and maintaining the support population. Evidence suggests that rarely did nonstate peoples in the early millennia of state experimentation voluntarily choose to join the support population (Scott, 2017). Thus coercion, including enslavement, further defines the state⁶.

In short, the perennial surplus-seeking of elites confers power upon themselves as it disempowers others. The more surplus they seek the more the surplus itself must be managed and the more the support population needs expansion and management. Elite power accumulates and concentrates, right along with the surpluses. At some point, something must give. If, for instance, the source of the surplus is wood then as more and more trees are cut deforestation is a likely, and well-documented, result. Deforestation increases erosion and flooding, decreases ecosystem integrity, and changes local climate. Coping requires yet more surplus and hence more deforestation and more ecological degradation. In general, regarding early states, James Scott writes: "Given the unprecedented concentration of crops, people, livestock, and urban economic activity fostered by states, a whole series of effects—soil exhaustion, siltation, floods, salinization, epidemics, fire, malaria, none of which existed at anything like such levels before the state and any of which

could gradually or suddenly empty a city and destroy a state—were more common [with state formation]" (Scott, 2017, p. 212). So a system, whether biological, physical or social, driven by self-reinforcing "positive" feedback loops of concentrated subsystems eventually collapses. Socially, that may be primarily the collapse of the elite structure, that which requires support and endless accumulation, which is to say, the state form and its surplus imperative. The rest of the social system, the support system, re-organizes and continues. I return to this crucial point shortly.

At the core of the state form, at least with respect to natural resources, then, is surplus—continuous, accumulating, self-reinforcing. That, in turn, creates the seemingly inexorable need to expand—to extract natural resources for dwellings and monuments, to capture neighboring and distant peoples, to marshal armies for defense and raiding. The expansion is geographic, demographic, ecological, and cultural. In modern times it is also economic. In all of its manifestations, in the logic of surplus, there is no endpoint, never enough and never too much, only more.

Re-organization

When the logic of surplus plays out and the system collapses of its own weight, its own contradictions (e.g., the exploitation of humans and natural resources reach a breaking point), it is because the capacities of its world have been exceeded. There is no more river bottom to claim, no more forest to clear, no more populations to raid (or they organize and resist). For much of the early history of the state, those "worlds" were, from a modern perspective, local—the rich riparian zones along major rivers like the Tigris and Euphrates, the Yellow, the Nile, the Mississippi, the Colorado, with forests nearby. With horses, elephants, and seafaring vessels states extended those worlds which in turn offered up seemingly endless frontiers (Crosby, 2004; Trautmann, 2015). Now, in the 20th and 21st centuries, the many worlds of expansion and colonization and tribute are occupied, the frontiers are closed locally and globally. The final contradiction, energetic and ecological (especially regarding waste sinks) is taking shape: endless material expansion on a materially finite planet is impossible (Daly, 1996). A social form designed for and dependent on endless expansion will end, or it will fundamentally reorganize. I leave it to future scholars (should there be enough surplus to support them) to decide whether the successor to the state is a qualitatively different form or a substantially reorganized state (see below).

The important point for scholars today and for policymakers and activists and journalists who draw on their work is to recognize that the state as we have known it for millennia has operated under "empty world" conditions. That is until recently, human action and impact have been minuscule relative to available land and resources. What is more, exploitable

⁶ That societies need not be structured through coercion is evidenced by what anthropologists Graeber and Wengrow call the indigenous critique. For example, in the 17th century writings of Wendat intellectual, Kandiaronk they write that "the whole apparatus of trying to force people to behave well would be unnecessary if France did not also maintain a contrary apparatus that encourages people to behave badly. That apparatus consisted of money, property rights and the resultant pursuit of material self-interest." (Graeber and Wengrow, 2021, p. 54). A different apparatus, Graeber and Wengrow imply, or I infer, is possible not just then but now.

peoples were widely available, could be overcome by brute force, and struggled to resist state expansion. Those conditions are ending. With 8 billion people, depleted natural resources, overfilling waste sinks, and new forms of resistance politics (Martin, 2011; Nixon, 2011; Broad and Cavanagh, 2021), there are few exploitable worlds, if any. The task for the public everywhere is to begin imagining and constructing a social form in which people thrive under “full world” conditions. To aid in that imaginative endeavor, consider that the state form, for its purpose, namely, to concentrate wealth and power, and its means, perennial surplus, is supremely well-adapted to a world of endless resources and waste sinks. But the implicit condition, good for some 6,000 years, is endless frontiers and, in the last some 600 years, endless facsimiles of frontiers, namely technologies and abstractions such as money. With real-world, biophysical frontiers fast closing, local to global, a longstanding question in political theory arises again, only this time with biophysical grounding: Whither the state? From a natural resources perspective, I see three possibilities.

One, the current full-world conditions (humans occupy all habitable places and extract at and beyond regenerative capacities) will be overcome by technologies and new markets. Efficiencies will be taken to drastically reduce overall consumption and markets will mitigate overall growth. Seeing no significant precedents in the last century or two, in fact, just the opposite, I move to the second possibility.

Two, the state, being fatally flawed with its endless expansion imperative, will collapse as a social form. A long period of social experimentation will follow before a wholly new form, or perhaps a multitude of forms emerges. Historical accounts of such collapses abound but there is little on the rebuilding that follows. James Scott, however, argues that, with collapse, it is “likely that the culture will survive—and be developed—in smaller centers no longer in thrall to the center. One must never confound culture with state centers or the apex of a court culture with its broader foundations.” What is more, in the past if collapse occurred because subjects rejected centralized rule they “may well have avoided labor and grain taxes, escaped an epidemic, traded oppressive serfdom for greater freedom and physical mobility, and perhaps avoided death in combat. The abandonment of the state may, in such cases, be experienced as emancipation” (Scott, 2017, p. 210–211). Finally, making the ecological case—that is, emphasizing the relation of humans to their biophysical and social environments—Scott argues that “what may seem to many to be a regression and civilizational heresy may on closer examination be nothing more than a prudent and long-practiced adaptation to environmental variability.” (Scott, 2017, p. 212). The task now for social theorists, historians and futurists may well be to engage in a bit of “civilizational heresy.” It will be to highlight social forms dismissed by modernists as “primitive” or “traditional” or “backward,” not to

mention imagine wholly new forms, at once more adaptive and less exploitative.

Three, the state form will be fundamentally restructured, its missing pieces identified and filled in. On the biophysical side (perhaps social side, too) the most consequential missing piece is a mechanism of restraint (Princen, 1997). From a systems perspective, it would be built-in dampening (“negative”) feedback loops. From a cultural perspective it would be a social norm that legitimizes, even makes normal or routine, a question of the sort, Is it enough and not too much? From a social organizing or political perspective, it would be a social organizing principle that institutionalizes mechanisms of restraint.

Sufficiency

So what might that principle be? Elsewhere I have elaborated sufficiency as an idea, an organizational principle, and an ethic (Princen, 1997, 2003, 2005, 2010, *in press-a*). Suffice it to say that at a personal level sufficiency is that sense of enoughness and too-muchness. I know when I’ve drunk enough coffee and when too-much. At an organizational level, it is establishing a goal of using a resource, a space, a workforce, or a set of community relations without using them up and constructing organizational mechanisms to restrain extraction and consumption. At the level of an economy, it is designing for enough growth but not too much, even for an economic steady-state or contraction.

Why sufficiency? Why now? Why construct a concept in contradistinction to, e.g., efficiency and growth that have served the industrial world so well? The short answer, grounded in the biophysical, is that this historical moment is one of ecological contradiction: the primary relation of humans to their environment has been that of extraction and expansion, the *r*-strategy of species that move in fast to a new territory, reproduce rapidly, then, when all is exhausted or more stable forms take over, move on (Gadgil and Guha, 1992). If the 19th century was one of colonization and the 20th of economic growth, then the 21st is of adaptation, fit, living within means, of organizing as if ecological, psychological, and planetary boundaries must translate to organizational boundaries. If sufficiency had meaning in the 20th century it was primarily among those of us who felt that, aside from ultimate limits, modern life, its speed, its flood of information, its dominating geographies and conquering of time, its disregard for large subpopulations, was a poor definition of the good life (Arendt, 1948; Sachs, 1992). Now, while all that continues, ultimate biophysical limits, possibly organizational and psychological limits, are being realized. For all the aversion to the very notion of limits in the dominant political economy, maybe especially among elites, those who have done so well in the 20th century, limits can no longer be ignored. This is self-evidently true in the biophysical dimension. But they seem to be

coming increasingly true on the personal and social dimensions: structures, boundaries, rules, and ethics are the conditions in which true freedom and thriving occur, not their negation. Surplus seeking, for all its benefits over a 6,000-year history has met its match—biophysical capacity, and likely social organizing and psychological capacity as well. Like other impulses, its constraint has become imperative, unavoidable, logical, and sensible (Dryzek, 1987).

So sufficiency, as constructed here, is a 21st-century concept. It has the advantage that, far from being a novel idea, it is in fact intuitive, age-old, and rather commonplace, just not as a social organizing principle. Constructing that principle is among the critical tasks of this historical moment. Imagining a direction of social development that respects nature's capacities and people's capacities is the challenge. How it manifests, where the road leads, is a matter of discovery, not determination. Again, the direction—living within our means, routinely asking when is enough and not too much—is the focus. The project is thus at once prospective (moving into an uncertain future) and historical (drawing on extant behaviors of the past), descriptive (humans actually do better with well-defined boundaries), and normative (to be sustainable and just societies must live within their means).

The construction of sufficiency, then, is a response to a desperate social need—figuring out how to live in a set of ecosystems, on one planet and how to live well, how, in the first instance, to use natural resources and waste sinks without using them up. Because the present industrial, consumerist, expansionist, fossil-fueled order is demonstrably unable to do this, a set of social organizing principles of a qualitatively different sort from the dominant principles of consumer sovereignty, efficiency, and growth (see below) is needed. Sufficiency is one possibility (Alexander and Ussher, 2012; Spangenberg and Lorek, 2019; Fuchs et al., 2021; Jungell-Michelsson and Heikkurinen, 2022).

To begin imagining a sufficiency-inflected society and prospecting for intervention points, a central question is where to locate social change. Should the analytic focus and, for that matter, the interventionist leverage be with the individual, with specific organizations, with the government, or with civil society? Here I assert that the primary locus of social change, *under the biophysical and social conditions of the 21st century*, is the state.

Social change

When it is the very structure of the state that drives endless material expansion, social change must occur at the level of the state. Tweaking markets, cleaning up factories, and nudging individuals will not add up to a societal shift if the prevailing system compels subsystems to expand indefinitely. And it is system change that is necessary when parts of the system

must adopt the system's dominant organizing principles—in the industrial case, efficiency, consumer sovereignty, and, above all, growth (see below)—to survive. This is certainly the case now in the 21st century regarding businesses. But even so-called non-profit companies such as cooperatives, universities, and foundations seem compelled to grow. If expansionism is as hegemonic in the current industrial, consumerist order as I claim it is, resistance to its containment will come from many quarters, industry and its political enablers in the lead. That is, if social change at the level of the state is logical, resistance, probably fierce resistance, can be expected. So just as an industry can embrace recycling (to produce more) but block attempts to generate less waste (by consuming less), it can be expected to fight tooth and nail attempts to undermine the growth norm.

Resistance to system-level social change would also come from those who claim, however implicitly, that there is One Right Way to Organize society. I take the position that this is little more than a claim. In fact, it is a rhetorical device for maintaining a distribution of power and wealth that serves some actors very well. It is not, however, historically, institutionally, or behaviorally grounded (Sale, 1980; Gadgil and Guha, 1992; Moore et al., 2007; Scott, 2017; Graeber and Wengrow, 2021). So I make a series of counter-claims that question the permanence of the state as we know it, especially under 21st-century conditions, and that opens political space for social change. This then begins to lay out an imaginative politics for fundamental social change, a politics of articulating features of a just and sustainable transition.

One, societies *organize themselves in a multitude of ways*. And they have reorganized themselves over and over. Sometimes they increase size and complexity, which gains the attention of subsequent scholars and leaders (think the rise of empires). Sometimes they find their society collapsing of internal contradictions (think the fall of empires). But sometimes they deliberately decrease their size and complexity (which gains little attention). Sometimes they concentrate power on one leader or cabal. Sometimes they choose to disperse power across clans and individuals. Sometimes they exploit people and land to the point of degradation and then move to the next frontier. Sometimes they use people and land without using them up and sustain themselves in place (what, again, gains little attention).

Two, how societies organize themselves is a function of i. the *biophysical* environment; ii. the *social* environment (including cultural history and the need to differentiate groups); iii. *chance*, experimentation, play. Some societies are well-adapted to their environments, moving seasonally to find food and avoid extreme weather, for instance. Others extract and move on, effectively counting on frontiers and compliant peoples to support their practices.

Three, there is *no one superior way* to organize a society. The modern, industrial, consumerist, capitalist state is not the epitome of social organization. Rather, it is just one way to organize, one institutional adaptation to the biophysical and

social environments, all with a lot of chance and luck and misfortune thrown in. From an adaptiveness perspective, it is a supremely well-structured organizational form for exploiting hugely abundant, easy to obtain, densely packed energy sources. For most of the history of the state energy was concentrated in the muscle power of livestock, laborers, and slaves and the vegetative power of wood, and for the last couple of centuries, in coal, oil, and natural gas (Smil, 2011). And the state is well structured for converting that physical power to economic and political power, the result being concentrated wealth and decision-making, the overarching purpose of the state form (Yergin, 1991). It is not well structured for a decline of such abundance, however, let alone paying for its true costs delayed for generations across time and displaced spatially across ecosystems.

Four, some societies are *well-adapted over the long term*, others are not. Reading the signals of maladaptation is difficult amid the noise of conquest and colonization, great technological innovation, and in recent modern times, the creation of financial instruments, distanced trade, and digital worlds. Extreme events such as wildfires and floods, heat waves, and droughts help cut through the noise, at least for those who listen (Princen, in press-b). When the signals are clear or get louder, and when they are heard, they make evident the imperative to reorganize and construct principles of social organization that fit the conditions of these 21st century times and discard the principles that have served so well the ambitions and desires of 20th century times and earlier.

So the 21st century is a time of major re-organization, of discontinuous shift on the order of moving from feudal to modern, from agrarian to industrial, from tribal to state. Such fundamental social change does not follow a plan. No one orchestrates it, there is no one right way, and there is no one evolutionary path. As Graber and Wengrow put it, “the course of history may be less set in stone, and more full of playful possibilities than we tend to assume” (Graeber and Wengrow, 2021, p. 25). People and peoples do make choices, though, they organize themselves in one form or another, they pick a direction and reject other directions. The normative claim here is that a language of sufficiency helps establish that direction under 21st-century conditions where *excess* is the overarching problem. Given that modern industrial, consumerist, fossil-fueled, growth-centric societies are organized as states for extraction, exploitation, externalization, and expansion, the four “exs” of which add up to excess, then re-organization is the name of the game, the 21st-century game. A new organizational form is not only desirable but inevitable given the exceeding of regenerative capacities. What is not inevitable is how we get there.

The excess of modern industrial states owes more than anything to the state choice to adapt to one environmental factor above all else—fossil fuels. Cheap and abundant, readily extracted and processed and distributed, fossil fuels are readily

converted to economic wealth, economic power, and ultimately political power. That power is both domestic (labor, taxes, conscription) and external (colonizing, expropriating). From this resource perspective, the modern industrial state is less defined by its markets and technologies than by its thorough assimilation, albeit often invisible, of fossil fuels (Princen, 2015). If industrialization had proceeded with biofuels (fossil fuels became dominant worldwide only in the 1890s) and forests and grasslands set natural limits on energy throughput, it is hard to imagine a similar course of development. Rather, it is much easier to imagine that practices would have emerged to build in those natural limits to restrain extraction and consumption, and along with them principles and norms, rules, and procedures. That, arguably, would have been a different social form, perhaps a restructured state, perhaps a wholly different form. That, as a thought experiment, is now a plausible direction for social change. Those who choose to steer society in such a direction will have to do more than develop technologies and create markets. They will have to construct social organizing principles, principles that build in the constraints of a single planet, and corresponding behavioral and institutional capacities for *restraint* (Princen, 1997). Sufficiency is one such principle. That construction establishes its own politics (see below) and its own power, the power of an idea, an idea at once intuitive and transformational, personal and collective.

Will transformational social change require the complete dissolution of the state form? The literature, to my read, offers little on how states changed course when they exceeded capacities, emphasizing instead the rise and fall of empires and the causes thereof, not deliberate reorganization. Whether modern industrial consumerist societies can reorganize without collapse is an open question. But as many have observed, historically “collapse” is generally what elites experience, not necessarily the broader society, not the broader foundations of culture. Collapse events “do not necessarily mean a decline in regional population,” writes Scott. “They do not necessarily mean a decline in human health, wellbeing, or nutrition, and ... may represent an improvement. Finally, a ‘collapse’ at the center is less likely to mean a dissolution of a culture than its reformulation and decentralization” (Scott, 2017, p. 186).

The fact that peoples and cultures did carry on after collapse, maybe even thrived, suggests they did indeed reformulate their culture and reorganize their social structure. They just didn’t build monuments to their efforts and leave written records. Reorganization is, after all, what creative, adaptive social creatures do. Importantly, in that organizing, they employ social organizing principles, consciously and explicitly or inadvertently and implicitly. They may use the old stand-byes, might-is-right, and divine inspiration, but they are likely to also use, or devise, principles that build in restraint in resource use. A contemporary variant I submit is sufficiency.

But resistance, once again, is to be expected. It is indeed hard to imagine the state form of social organization withering

or inverting or, say, simply becoming a subordinate form. One reason is that a successor is not obvious. A major myth of modernity is progress. Applied to social organization it says the current form is the best imaginable and it will only improve. To even consider some other form is to negate progress (Lasch, 1991; Greer, 2012). Even without the myth of progress, it is reasonable to assume that those living in, and doing well by, previous longstanding social forms—bands, tribes, chiefdoms, early states—would have also found it hard to imagine a new form. And yet, taking a millennial time scale, recent understandings in archaeology, anthropology, and history suggest that our various ancestors did indeed experiment with multiple new forms, even alternating between forms. As Graeber and Wengrow write, “the capacity to experiment with different forms of social organization [is] a quintessential part of what makes us humans” (Graeber and Wengrow, 2021, p. 8)⁷.

At the time of a given historical instance of social reorganization, it was probably hard to imagine a new form. But when circumstances changed—drought, disease, incursion, or a new idea or desire to experiment arises—at some point a new form was sought. Whatever the proximate driver, the challenge of the time was less devising the new form than getting over the hurdle of presumed permanence of the current order. The worldwide political tumult of the 2020s may be such a time.

So if the current social form, that is, the state broadly construed (not just the modern state, and certainly not just government) is inherently expansionist and if one limit after another, biophysical and social, has been exceeded in the 20th and 21st centuries then re-organization will happen, ready or not, like it or not. Better to get ready, hence an imaginative politics, a part of which would be a prospective project on sufficiency, along with other social organizing principles directed at the state form. Put differently, if excess (exceeding regenerative capacities) is the logical outcome of an expansionist social order, then that order necessarily will change when capacities have been exceeded, if not before. Societies that do so with minimal suffering will be those that (1) are far from exceeding their local capacities and (2) not only anticipate the excess but imagine the desirability of re-organization. Countries wedded to the expansionist order and in a habit of denying biophysical realities (from the end of cheap energy to climate change to pandemic disease) will suffer the most. Other people, far from the centers of state power (financial, corporate, governmental, academic, medical) may not be able to single-handedly devise an entirely new social form, but they can chart a direction. Among the tools are social organizing principles attuned to excess, sufficiency being one.

⁷ For a psychological approach to experimentation, see De Young and Kaplan (2012).

Toward an imaginative politics of sufficiency

In positing sufficiency as a major social organizing principle for, say, a post-industrial, post-expansionist state, or a post-state social form, a premise is that all societies organize to extract natural resources, process and consume the products, and dispose of the wastes. In so organizing they at least implicitly employ social organizing principles. For much of the history of the state, major principles have included might-is-right, divine guidance, and expansion. In the industrial era, they have been efficiency, consumer sovereignty, and growth. While each of these principles warrants historical and cultural explication, suffice it to say they emerged and played out, much like the state itself, under *empty-world* conditions. That is, the multiple experiments in state formation proceeded on a stage of vast habitable places, rich in resources and where there was always an “away” for wastes. For the sake of argument, I concede that these principles made good sense in their time, at least for elites and dominant states. Now, under full-world conditions, in the 21st century, they do not. I briefly take up each “20th century” principle and contrast them with sufficiency to suggest an imaginative politics of sufficiency.

The consumer sovereignty principle has it that consumers must be pleased; they must have abundant goods at low, low prices (Princen et al., 2002). There is probably a no better illustration of the power of this principle than the initial reluctance of the European Union and North America to sanction energy supplies from Russia when it invaded Ukraine in 2022. The sovereign consumer could not voluntarily sacrifice (in the positive sense) for the greater cause of weakening the aggressor state.

The efficiency principle has it that an improvement in the ratio of output (goods) to input (work) is beneficial. It has been honored through decades of industrial development resulting in huge efficiencies in factories, on landscapes, and among workers. While efficiency gains can, in theory, be taken to reduce overall throughput and stress on ecosystems (the implicit promise in the claim that efficiencies are “good for the environment”), the evidence is that they are mostly taken to increase economic growth and returns on investment, which is to say, to enhance the wealth and power of the elite stratum (Princen, 2005).

The growth principle has it that goods are good so more goods are better. It hardly needs to be said that growth reigns supreme in modern societies, and not just among economists, industrialists, and their enabling policymakers. My best evidence, anecdotal though it be, is my employer, a graduate school of environment and sustainability at a leading American research university. Here all programs must grow, both in lean financial times (to generate more revenues) and flush times (to generate more programs and initiatives and course offerings). More students, more faculty, more grants, and more donations

are taken as given. Woe to those who question the sanctity of the growth principle so applied (again, I have convincing anecdotal evidence).

So the growth principle, supported by the efficiency and consumer sovereignty principles, effectively defines the modern, industrial, consumerist state. In fact, from a millennial perspective of the state, economic growth is only the most recent variant of expansion. It has been monetized and financialized but is fundamentally the same as expansion, an extension of the state's imperative to seek surplus—and yet more surplus to manage and defend the surplus. So, because, on a material basis alone, endless expansion within finite biophysical systems is impossible, alternative principles are in order. This is the logical imperative and is straightforward. The political imperative is another matter, requiring imagining a post-industrial, post-expansionist society.

One step in that direction is to accept, at multiple scales and in various contexts, that, because industrial consumerist societies cannot continue business-as-usual, however clever they are at delaying the day of reckoning, *they will re-organize*. Human societies always have. Humans, once again, are creative, adaptive creatures and not just in technological and artistic realms. As they re-organize they will devise and experiment with alternative principles, not necessarily novel principles but principles that in some realms, even just the personal, already exist. So another step is to accept that, because sufficiency exists at the personal and organizational levels, even in hypercommercialist and growth-centric societies such as the United States, sufficiency is a candidate for an alternative principle. Whether it modifies growth or subordinates it or supplants it can be known only through experimentation which, to repeat, is what humans are adept at. As noted, sufficiency already makes perfectly good sense, including ecological sense, at the individual and organizational levels. At the planetary and individual levels, it is self-evident: a biosphere or an organism that continuously rearranges its thin skin of life can not last. At the same time, however, at the level of an economy, it is an alien notion: an economy must grow, even if the evidence is clear that such growth is undermining that very economy.

Finally, then, because the modern economy is coterminous with the modern state (recall that the goal of the state as a system is to concentrate wealth and power), sufficiency would be anathema to state structure; if implemented, it would threaten the very form itself. But because the state form with its surplus-seeking imperative and its resulting fixation on expansion is incompatible with the limits of ecosystems, hydrologic systems, and climate systems, and, more and more it seems, the cognitive and affective capacities of individuals, it will change. It may disappear entirely or reorganize but, as constituted, it cannot function on a single planet, one full of state-driven, self-destructive human activity. Adaptive

people within these societies will innovate social forms. For insights, they will reach back into the distant past and they will explore contemporary patterns of living and organizing that do not require endless expansion (Litfin, 2013). They will endure objection and ridicule, maybe worse. But figuring out how to live on one planet, and how to use resources without using them up is the project of our time. Such figuring and experimenting and enduring are the politics of our time. What is more, rather than being strictly resistance politics they are affirmative politics (Litfin, 2013). One source of direction in those affirmative politics is that implicit in a practice of sufficiency.

Conclusion

At this historical juncture when growth, efficiency, and consumer sovereignty are preeminent social organizing principles, yet steering industrial consumerist societies toward an ecological cliff, one can only speculate about the potential of sufficiency. At the core of sufficiency is its ability to make legitimate the question, Is it enough and not too much? The “it” can be a new house, a housing project, or housing policy, an irrigation scheme, an investment, a financial instrument, an industry, or an economy. To ask such a question in the contemporary context where “more” and “faster,” “anything goes” and “move fast and break things” prevail, would put sufficiency in the realm of transformational, if not revolutionary. It would prompt investigation of costs, irreversibilities, and injustices of current practices and do so *all the way up and down*, to water sources and waste sinks like oceans, for example. It would prompt investigation of physical and temporal scale, and of the concentration of wealth and power. Asking such questions might even redirect attention from consuming, advertising, and entertaining to provisioning, connecting, and caring (Berry, 1987; Van Horn et al., 2021).

But no one, not the theorist, not the practitioner, not the policymaker can will or manage such effects. It is pointless to try to predict the social form that will emerge as biophysical and social contradictions play themselves out. I can only presume that, in most cases (and the variability across cultures is probably huge), the transformation will be more evolutionary than revolutionary. That is, societies will eventually come to accept that experimentation in the social form is legitimate, maybe because it is historically, culturally, and psychologically what humans do as I've argued here, maybe because they have no choice. Then each experiment will be incremental, and unique. But, like biological evolution, there will also be punctuations, discontinuous, and even dramatic changes along the way. Ultimately, fit to the biophysical and social environments

will exert selective pressure, including fit to a much-diminished environment, given the fossil fuel legacies we are currently bequeathing.

What theorists and others can do, however, is call out the contradictions and suggest the nature of re-organization and the direction of social change. James Scott found that “the early state was radically unstable for internal structural, epidemiological, and political reasons.” (Scott, 2017, p. 222). I find the same for the modern, industrial, hypercommercialist, consumerist, fossil-fueled, debt-laden, disease-denying, growth-centric, expansionist state. The difference, though, is that for the first five or six millenniums of experimentation with the state form, there was always a frontier to acquire more natural resources and a release valve for discontented state subjects. “With respect to population,” Scott observes, “the vast majority throughout this period (and arguably up until at least 1600 CE) were still nonstate peoples: hunters and gatherers, marine collectors, horticulturalists, swiddeners, pastoralists, and a good many farmers who were not effectively governed or taxed by any state. The frontier, even in the Old World, was still sufficiently capacious to beckon those who wished to keep the state at arm’s length” (Scott, 2017, p. 219–220). That release valve and those frontiers no longer exist. Space travel fantasies aside, the biophysical and social context of state building has fundamentally, qualitatively, and irreversibly changed. So will the state form, like it or not, ready or not.

A premise here is that state structure matters immensely on questions of resource use and distribution, let alone self-determination, peace, and thriving, and that integral to any organizational structure are principles however explicit or implicit. If social change is continuous and incremental then incremental improvements under existing principles may be enough. But if a social change occurs in response to discontinuous biophysical changes, then a qualitative shift to a new state of affairs, most notably from endless growth to a steady state or contraction, is needed requiring wholly new principles. And these will be needed promptly, given the trends. Resilient societies will be those that lay the groundwork, that anticipate discontinuous shifts. For that, conventional principles of organization—efficiency, consumer sovereignty, growth—will not be up to the task. Principles that build in restraint such as sufficiency are more likely to enhance adaptiveness and resilience. And, as I’ve argued, because they exist at the personal and, in some cases, organizational levels such principles are not novel. Paraphrasing ecological economist Kenneth Boulding, if they exist, they’re possible.

As it stands now when the environmental community of scientists, activists, theorists, and policymakers all seem to conclude that behavior change is necessary, there is almost a reflexive turn to the individual, not the structural: if only people used less plastic, drove fewer miles, bought electric cars,

rode a bike, planted a tree, ate less meat, voted for the right candidates, etc., we could reverse the trends (Maniates, 2002). Alternatively, those who follow the biophysical trends, especially the dire ones (think tundra and fossil methane, Antarctic ice sheets, the Atlantic current, back-to-back pandemics), ascribe the problematic behavior to “human nature”: humans are greedy, short term, competitive. Lacking an institutional, cultural, or power lens, these observers tend not to see human behavior as one of the dual propensities whereby people are both greedy *and* altruistic, short term *and* long term, competitive *and* cooperative. The real question is not how to suppress the destructive tendencies (reward good behavior, call for farsightedness, lament the lack of solidarity) but rather to identify the conditions, especially social structures, that lean a society toward, say, greed and short-termness. In a highly individualistic, expansionist society like the one I live in, those conditions, I submit, include social organizing principles like efficiency, consumer sovereignty, and growth. To lean a society toward the altruistic and long term, let alone sustainable, alternative principles like sufficiency are in order. In short, fundamentally, qualitatively new, structural change is needed at this moment, not marginal tinkering with new laws and regulations, new taxes and subsidies, or the nudging of consumer choice.

The fact that the adoption of new social organizing principles is daunting or seemingly impossible is the understandable position of those who only see greed and short-sightedness in human behavior and cannot imagine guiding principles other than the dominant ones. The urgency of the current situation calls for imagination, and not just for catastrophic outcomes; there is plenty of that coming from the scientific community, the media, and the entertainment industry. To those who cannot imagine a qualitatively different social structure, or presume that this is the best of all possible structures, I pose this question: How is it that business-as-usual in energy, transportation, construction, and other realms is deemed impossible by the scientific community and their follower’s given current trends and yet business-as-usual in social structure, especially economic structure, is deemed entirely possible? I take my cue from the notion that you can’t solve a problem with the very thinking that created the problem. My political variant is you can’t organize a society for sustainable and just outcomes with the very organizing principles that have created unsustainable and unjust outcomes.

So urgency calls for imagining new social forms, new guiding principles, and new behaviors (or, better put, new emphases on existing behaviors). I have argued here that our ancestors seem to have imagined, and enacted, new structures and, by implication, new principles and behaviors, almost as a matter of course in their social development. We moderns ought to be able to do so too.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Acknowledgments

The author wishes to thank Raymond De Young and David Skrbina for helpful comments on earlier drafts of this article and to thank two reviewers for their comments.

References

- Alexander, S., and Ussher, S. (2012). The voluntary simplicity movement: A multi-national survey analysis in theoretical context. *J. Consum. Cult.* 12, 66–88. doi: 10.1177/1469540512444019
- Arendt, H. (1948). *The Origins of Totalitarianism*. New York, NY: Harcourt.
- Berry, W. (1987). *Home Economics: Fourteen Essays by Wendell Berry*. San Francisco, CA: North Point Press.
- Broad, R., and Cavanagh, J. (2021). *The Water Defenders: How Ordinary People Saved a Country from Corporate Greed*. Boston, MA: Beacon Press.
- Crosby, A. W. (2004). *Ecological Imperialism: The Biological Expansion of Europe, 900-1900. Studies in Environment and History*. Cambridge: Cambridge University Press.
- Daly, H. E. (1996). "Sustainable growth: an impossibility theorem," in *Valuing the Earth*, eds H. E. Daly, and K. N. Townsend (Cambridge, MA: MIT Press), 267–273.
- De Young, R., and Kaplan, S. (2012). "Adaptive muddling," in *The Localization Reader: Adapting to the Coming Downshift*, eds R. De Young, and T. Princen (Cambridge, MA: MIT Press), 287–298.
- Dryzek, J. S. (1987). *Rational Ecology: Environment and Political Economy*. New York, NY: Basil Blackwell.
- Fuchs, D., Sahakian, M., Gumbert, T., Di Giulio, A., Maniates, M., Lorek, S., et al. (2021). *Consumption Corridors: Living a Good Life Within Sustainable Limits*. London: Routledge.
- Gadgil, M., and Guha, R. (1992). *This Fissured Land: An Ecological History of India*. Berkeley, CA: University of California Press.
- Graeber, D., and Wengrow, D. (2021). *The Dawn of Everything: A New History of Humanity*. New York, NY: Farrar, Straus and Giroux.
- Greer, M. (2012). "Progress vs. apocalypse: the stories we tell ourselves," in *The Energy Reader: Overdevelopment and the Delusion of Endless Growth*, eds T. Butler, D. Lerch, and G. Wuerthner (Sausalito, CA: Foundation for Deep Ecology), 95–101.
- Heilbroner, R. L. (1985). *The Nature and Logic of Capitalism*. New York, NY: W.W. Norton.
- International Energy Agency (2021). *World Energy Outlook 2021*. Paris: IEA. Available online at: <https://www.iea.org>
- IPCC (2022). "Climate change 2022: impacts, adaptation, and vulnerability," in *Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, eds H. O. Pörtner, D. C. Roberts, M. Tignor, E. S. Poloczanska, K. Mintenbeck, and A. Alegria (Cambridge, UK; New York, NY: Cambridge University Press).
- Jungell-Michelsson, J., and Heikkurinen, P. (2022). Sufficiency: A systematic literature review. *Ecol. Econ.* 195, 107380. doi: 10.1016/j.ecolecon.2022.107380
- Lasch, C. (1991). *The True and Only Heaven: Progress and Its Critics*. New York, NY: W.W. Norton.
- Litfin, K. (2013). *Ecovillages: Lessons for Sustainable Communities*. Cambridge: Polity.
- MacNeil, J. R., and Engelke, P. (2016). *The Great Acceleration: An Environmental History of the Anthropocene Since 1945*. Cambridge: Harvard University Press.
- Maniates, M. (2002). "Individualization: plant a tree, buy a bike, save the world?" in *Confronting Consumption*, eds T. Princen, M. Maniates, and K. Conca (Cambridge, MA: MIT Press), 43–66.
- Martin, P. L. (2011). *Oil in the Soil: The Politics of Paying to Preserve the Amazon*. Boulder, CO: Rowman and Littlefield Publishers.
- Merchant, C. (1989). *Ecological Revolutions: Nature, Gender, and Science in New England*. Chapel Hill, NC: University of North Carolina Press.
- Moore, K. D., Peters, K., Jojola, T., and Lacy, A. (eds.). (2007). *How It Is: The Native American Philosophy of V.F. Cordova*. Tucson, AZ: The University of Arizona Press.
- Nixon, R. (2011). *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press.
- Princen, T. (1997). Toward a theory of restraint. *Popul. Environ.* 18, 233–254. doi: 10.1007/BF02208422
- Princen, T. (2003). Principles for sustainability: from cooperation and efficiency to sufficiency. *Global Environ. Polit.* 3, 33–50. doi: 10.1162/152638003763336374
- Princen, T. (2005). *The Logic of Sufficiency*. Cambridge, MA: MIT Press.
- Princen, T. (2010). *Treading Softly: Paths to Ecological Order*. Cambridge, MA: MIT Press.
- Princen, T. (2014). "Sustainability: foundational principles" in *Routledge Handbook of Global Environmental Politics*, ed P. G. Harris (London: Routledge), 189–204.
- Princen, T. (2015). "The cultural: The magic, the vision, the power," in *Ending the Fossil Fuel Era*, eds T. Princen, J. P. Manno, and P. L. Martin (Cambridge, MA: MIT Press), 53–95.
- Princen, T. (in press-a). *Fire and Flood: Adapting Past, Present, Future*. Cambridge, MA: MIT Press.
- Princen, T. (in press-b). "Relational sufficiency: an essay on an idea, a principle, an imperative," in *Sufficiency in Nature: Population, Affluence, and Technology*, eds D. Skrbina, D. T. Ruuska, and T. Nyfors (Leiden: Brill).

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

- Princen, T. Maniates, M., Conca, K. (eds.). (2002). *Confronting Consumption*. Cambridge, MA: MIT Press.
- Sachs, W. (1992). *For Love of the Automobile: Looking Back into the History of Our Desires*. Berkeley, CA: University of California Press.
- Sale, K. (1980). "Politics on a human scale," in *The Decentralist Tradition*, ed K. Sale (New York, NY: Perigee Books), 443–454.
- Scott, J. C. (2017). *Against the Grain: A Deep History of the Earliest States*. New Haven, CT: Yale University Press.
- Smil, V. (2011). *Energy Transitions: History, Requirements, Prospects*. Santa Barbara, CA: Praeger.
- Spangenberg, J.H., and Lorek, S. (2019). Sufficiency and consumer behaviour: from theory to policy. *Energy Policy* 129, 1070–1079. doi: 10.1016/j.enpol.2019.03.013
- Tainter, J.A. (1988). *The Collapse of Complex Societies*. Cambridge: Cambridge University Press.
- Trautmann, T.R. (2015). *Elephants and Kings: An Environmental History*. Chicago, IL: University of Chicago Press.
- Van Horn, G., Kimmerer, R. W., Hausdoerffer, J. (eds.). (2021). *Kinship: Belonging in a world of relations, vol. 3, Partners*. Libertyville, IL: Center for Humans and Nature Press.
- Wapner, P. (2000). "The resurgence and metamorphosis of normative international relations: principled commitment and scholarship in a new millennium," in *Principled World Politics: The Challenge of Normative International Relations*, eds P. Wapner, and L. E. J. Ruiz (Lanham: Rowman & Littlefield Publishers).
- Yergin, D. (1991). *The Prize: The Epic Quest for Oil, Money, and Power*. New York, NY: Simon and Schuster.