

# 41. Possibilities and prospects of social change in response to the environmental crisis

## Introduction to Part 4

by  
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*Part 4 focuses on visions of change, particularly the role of technology and shifts in economic policies in shaping the future; conditions of change: that is, the drivers and barriers to changes in human behaviour; and interpretation and subjective sense-making, exploring how individuals and societies perceive and understand the changes occurring around them.*

Humans are living a paradox. The global environment and its constituent parts are changing at an accelerating rate, all because of the collective impact of more than 7 billion people consuming the planet's bounty – albeit at different rates – with seemingly little regard for its long-term sustainability. At the same time, society's progress in reducing that impact is “glacially” slow – a metaphor the English language must soon let go of.

Part 4 focuses on understanding the processes of social change that drive, are impacted by, and respond to these environmental changes, and on how we make sense of change in the world around us. The very diverse contributions to this part are grouped under three headings. The first – visions of change – addresses the first component of Cornerstone 3. Contributions here imagine the role of technology and shifts in economic policies in shaping a better future. The second heading – conditions for change – integrates perspectives on personal and local change to global and systemic shifts in human behaviour, drawing largely on psychology, sociology, and integrative studies for human behaviour and social practices. The third heading – making sense of change – includes a number of articles on interpretation and subjective sense-making (Cornerstone 4) that provide a sketch of how individuals and societies perceive and understand the changes occurring around them.

Part 4 – while unable to be comprehensive – brings together a number of contributions that point to important progress being made by the social sciences. But it also points to the challenges that remain in understanding social change and in making this knowledge useful and actionable to decision-makers.

## Visions of change

The first set of contributions speaks to visions of change, the images of a future we may want to strive for and that may inspire and guide us. Turok and Borel-Saladin, in their critical assessment of three major documents on the “green economy”, speak to the need for an inspiring, positive vision of the future that is inclusive of North and South. Vision and implementation tools and measures are needed, they argue, to show that it is possible to benefit economically from transitioning to a low-carbon, highly efficient economy without degrading environmental and social conditions. Yet how incremental or radical a socially emancipatory “green economy” really is will depend on nations’ interests, willingness, and commitment to making the necessary tough choices.

The contribution from Muchie and Demissie focuses on the promise of nanotechnology, while Maguire and colleagues take an optimistic but critical look at green chemistry. They explore the potential of advancing green chemistry as a design philosophy in which the production, use and disposal of chemical substances no longer results in toxic hazards. The authors call on the social sciences to help chemists become more reflexive about their enterprise, and produce more socially robust knowledge, superior product design, more effective communication between industry and citizens, and greater policy support among stakeholders.

Many other technologies (such as information communication technology, biotechnology, robotics, new sources of energy) and social interventions, besides economic policies and measures (such as democratisation, education, empowerment or political strategy) could be subject to social analysis. Many social scientists in fact have done just that (e.g. Dryzek, 2011; Giddens, 2009; Jasanoff, 1995). Thus, the contributions included here are limited and selective. Moreover, perhaps by accident, the visions of change presented are all positive, maybe even utopian. They do not break with past paradigms and dominant beliefs, but represent continuations and evolutionary enhancements. Such cultural narratives are seductive, socially reinforced and powerful, especially at a time when many trends are not encouraging. But as O’Brien (2012) urged, the social sciences, not questioning these paradigms and beliefs or envisioning possible alternatives, can create blind spots which can give rise to unanticipated negative consequences, social dispute and stalemate. Historically the social sciences have played this much-needed role: for example, questioning the technocratic implementation of new and risky technologies (Jasanoff, 1986), over-confidence in grand techno-economic experiments such as the Green Revolution (Shiva, 1991; Glaeser, 2011), or the inherent contradictions in modernity’s promise of a controllable future (Beck, 1992) and “sustainable growth” (Mol, Sonnenfeld and Spaargaren, 2009). Much could be gained from bringing this traditional capacity to bear on possible interventions to mitigate global environmental change.

## Conditions for change

The largest set of contributions to Part 4 addresses the questions of what motivates behaviour and social change, what the barriers are, and how change unfolds. Perspectives offered here range from the individual, household and local levels to the national, international and global or systemic levels. Collectively, they suggest that the social sciences actually do understand much about how complex and embedded human behaviours and practices are (e.g. Shove, 2003) and why and how they can be changed (e.g. Gifford, Kormos and McIntyre, 2011; Whitmarsh, O’Neill and Lorenzoni, 2011; APA, 2009).

Weber reviews major psychological theories on individual behaviour change. She lays out a set of coherent and mutually reinforcing insights into the innermost drivers of change, information processing and decision-making in individuals, as well as the range of inner and outer barriers to realising a particular behaviour. Recent work in evolutionary psychology (van Vugt and Griskevicius) looks at the deepest causes of human behaviour, adding considerable explanatory power to our understanding of why humans think and act the way they do, and how behaviour change interventions can be made more effective. Head and colleagues then place individuals in the social and structural contexts in which they exist. They unpack the household unit to better understand household dynamics, everyday practices, and linkages between individuals and wider influences, and uncover possibilities for more effective behaviour change interventions. Similarly, Feola examines the behaviour of individual smallholders in their socially and environmentally embedded structures, in the context of the use of agricultural pesticides. Using process-based modelling, Feola brings social-ecological systems approaches to life with insights into decision-making, capturing the feedbacks from peers, the environment and macro-scale influences that affect an individual's choices (see also O'Brien, Part 1).

Gutberlet and Song both take behaviour change to the neighbourhood and community levels. Song examines a neighbourhood-based effort in Shanghai, China, to increase participation in recycling, and highlights individual, structural and cultural obstacles to behaviour change as well as social influences that help overcome them. Gutberlet describes a community-based co-operative engaged in waste recovery in Brazil, emphasising the social and economic co-benefits that can motivate behaviour change and support more fundamental empowerment and social change.

Urry takes a systems perspective on the carbon-intensive socio-technical systems that underlie the "Western lifestyle", and the potential to halt and reverse their environmentally destructive momentum. He shows how the path-dependencies in these systems constrain the options and effectiveness of individual behavioural choices, and argues that the way out of such system lock-in is to develop a vision of feasible, attractive and visible low-carbon lifestyles and systems to replace current outdated models.

Together, the contributions to this thread show that there is no one all-determining independent driver or scale from which to initiate social change. Nor is there any monolithic constraint on change. Instead, change is always the result of complex interactions and is affected by multidirectional and multifaceted influences, motivations and barriers, as well as direct and indirect feedbacks from the social and natural environment (see Part 2). No single intervention, and certainly not the provision of scientific information alone, will suffice to bring it about.

### **Making sense of change**

The contributions on sense-making give a bird's-eye view of how individuals perceive, understand and interpret what is happening in their environment, and provide interesting comparative insights across the world. As such, they touch on the personal and collective values, beliefs and worldviews that underlie people's experiences of, and responses – or lack of response – to, processes of global environmental change. However, they do not fully reflect the existing and emerging social science research on the psychological and social

processes that shape and change cultural values and worldviews on the environment (e.g. Dietz, Fitzgerald and Schwom, 2005; Leiserowitz, Kates and Parris, 2006; Crompton, 2011).

Smith, and Johnstone and colleagues, begin with cross-national surveys investigating concerns and attitudes toward environmental issues in general, and climate change in particular. Smith finds limited concern for environmental issues in general, though climate change has risen to the top of concerns in many countries. Johnstone, Serret-Itzicsohn and Brown's findings illustrate variable, but in general positive, attitudes towards pro-environmental behaviour changes. Many studies have shown that such positive attitudes and concerns are essential but insufficient to guarantee political or behavioural engagement, given the barriers that exist and the common observation that individuals tend to pass on responsibility for tackling climate change to policymakers.

Abbas and colleagues report on two international surveys of youth to understand young people's concerns, interests, aspirations, fears and hopes for the future, and the barriers they face to living more sustainable lives. UNESCO's educational efforts and those in French schools (Arnould) hint at the possibilities of affecting young people's abilities and aspirations. Many of their findings mirror those emerging from Rogers' report on the Field Hearings project, conducted in 34 communities in Asia, Africa and Europe, which aims at having poor people's voices included in high-level policy processes. Findings reflect important improvements in poor people's lives (see also Sachs, Part 1), but also a long list of worsening trends in the environment, governance, and economic and social conditions. Finally Buckland, in summarising the creative work of the innovative project Cape Farewell, describes the crucial role artists can play in articulating and visualising scientific findings and how people vision and make sense of the future.

Together, these contributions suggest that sense-making takes place as each of us is embedded and steeped in certain social and cultural environments (media, education, upbringing, organisations, neighbourhoods, peers and so on) that reinforce some values and worldviews, and contest or reject others. Much remains to be learned about how rapid environmental and socio-technical change will affect our ways of sense-making, and how these social processes interact with personalised experiences and psychologies. The contributions here also hint at indications of "useful" social discontent, particularly among youth. They point to the role of education in shaping the values of future generations from an early age, which can help redirect preferences and inclinations while instilling empowering skills to enact them.

### **Conclusion: Call on the social sciences**

Taken together, the contributions to Part 4 reveal rich insights into the visions and conditions of change, but also show that no single discipline or level of investigation can capture the complexity of how change occurs. In this synthesis, a coherent story of individuals richly and dynamically embedded in households, communities, socio-technical systems, economies and cultures begins to emerge. This story goes a long way toward explaining the paradox of how the social drivers of global environmental change persist, or at least change only slowly, while the environmental crisis continues to unfold rapidly. Yet so much empirically rich social science research is still small-scale or single-scale and monodisciplinary. More research is needed on the power and embeddedness of individuals and the cross-scale connections in processes of change.

Similarly, there is a need to better understand how both deliberate and unintended changes unfold. For example, we see the power of participation, social capital and community engagement at small scales, but why is there not more investment in proven ways of empowerment and social capital building? How can they be scaled up? Is there a social tipping point beyond which big transformational change can occur?

The contributions collected here also suggest the question of whether there may be an implicit call for a “theory of change in everything” here. Is an overarching theoretical framework for social change (driven by hierarchy theory, systems thinking and the like) required at all levels, whereby change processes at different levels of social organisation are somehow linked together?

Particularly in the area of sense-making, there are important knowledge gaps to close through closer collaboration and integration of the “mainstream” social sciences with subdisciplines which are currently considered marginal to the core (eco-psychology, depth psychology, political ecology, political psychology and many more). Such integration could bring to the surface deeper drivers of change and sense-making, as well as the inadequately considered power dynamics of everyday life and big-stage politics. Finally, there is significant opportunity for the social sciences to work more closely with the humanities, for example to better understand historical social change processes and cultural narratives.

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