

Chapter 12 A theory of Socio-ecological Systems Change – Summary and Commentary

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This presentation is based on Costanza R. A theory of socio-ecological system change. *Journal of Bioeconomics*. 2014;16(1):39-44.

Synopsis

The ideas of Elinor Ostrom, David Sloan Wilson and EO Wilson, that evolution occurs over many scales from genes and epigenes, to groups and cultures, feeds this theory of socio-ecologic system change.

Assuming we prefer a smooth societal transition to collapse (*a la* Jared Diamond), a model of change was presented. An evolutionary view of culture change (Beddoe R, Costanza R, Farley J, Garza E, Kent J, Kubiszewski I, et al. Overcoming systemic roadblocks to sustainability: The evolutionary redesign of worldviews, institutions, and technologies. *Proceedings of the National Academy of Sciences*. 2009;106(8):2483-9; Ostrom, E. (2013). Do institutions for collective action evolve? *JBioecon*. doi:[10.1007/s10818-013-9154-8](https://doi.org/10.1007/s10818-013-9154-8)), permits purposeful design of cultural variants upon which selection pressures can act, to winnow out the less adaptive ones.

Further “one unique feature of cultural evolution compared to biological evolution is that it is “reflexive” in the sense that goals and foresight can affect the process. To a certain extent, we can design the future that we want by creating new cultural variants for evolution to act upon and by modifying the goals that drive cultural selection. If our societal goals shift from maximizing growth of the market economy to maximizing sustainable human well-being, different institutions will be better adapted to achieve these goals.”(p42, Costanza 2014)

The initial step in any such change is arriving at a shared vision of what we want an ecologically sustainable society to look like. Envisioning radically different worldviews, and an assessment process of these different views, permits intentional action to evolve society toward this new state of affairs.

Two other pieces of knowledge assist. First, we know that cultural tipping points have occurred. The fall of the Soviet Union is one such example. These tipping points are the output of interacting slow and fast variables driving or inhibiting change. Second there is a body of work about how cultures evolve (Turner JH (2003) *Human Institutions* (Rowman & Littlefield, Lanham, MD); Tainter JA (2000) Problem solving: Complexity, history, sustainability. *Popul Environ* 22:3–41; Boyd R, Richerson PJ (2005) *The Origin and Evolution of Cultures* (Oxford Univ Press, New York); Ba'na' thy BH (1998) Evolution guided by design: A systems perspective. *Syst Res Behav Sci* 15:161–172; Heckbert S, Parrott L, Costanza R. Achieving Sustainable Societies: Lessons from Modelling the Ancient Maya).

This leads to a suite of actions to reframe the arguments about how society should be from how it is to a sustainable and desirable future story. Yet putting those ideas out is not enough; the current cultural paradigm might be considered a ‘societal addiction’ (to a growth-at-all-costs with fossil fuels and consumption paradigm) and therefore applying an addiction treatment model to change may help action develop. In this context addiction means that the behaviour is destructive, but so embedded onto the social system that plausible alternatives are not visible.

An addiction treatment model requires the sufferer to engage in a conversation about change. First is to introduce the addict to the possibility of a different reality. Then there is an assessment of the costs and benefits of change (balanced with the costs and benefits of no change).

The motivational interviewing equivalent for societal cultural change is scenario planning. This operates on four assumptions:

1. The future is not the past
2. The future is not foreseeable
3. Many futures are possible – this is the possibility space
4. The process is both rational and creative

Several examples were described, including a current research project being undertaken to test the process in an Australian context (www.anuscenarioplanning.com) which is leading to creation of a series of future programs (documentaries, news items, soaps, etc.) to be published in the Journal of Future Studies (<http://www.jfs.tku.edu.tw/>).

Ray and Anderson have proposed a classification of subcultural types within the USA, which they call symbotypes, based on adherence to a sub-worldview within the western liberal tradition (Ray PH, Anderson SR. *The cultural creatives: How 50 million people are changing the world: Three Rivers Press New York; 2000*). These symbotypes are: (1) Modernists —the dominant worldview of markets and economic growth—46% of the population in 2000; (2) Traditionalists —a nostalgic appeal to earlier (often more religious) times—26 % of the population in 2000; and (3) Cultural Creatives —a worldview based on sustainability, equity, and sufficiency—28 % of the population in 2000. Cultural Creatives are “disenchanted with “owning more stuff...materialism... status display and the glaring social inequities of race”. Since 1965 the proportion of each has changed in the population in the USA with Traditionalists markedly declining and Cultural Creatives rising ten-fold (Costanza 2014, quoting Ray and Anderson).

In the evolutionary model of cultural transformation, a symbotype is the locus of action for selection pressures from the social and biophysical environment. Thus we see that the rise of the symbotype Cultural Creative may be a response to selection pressure and as that worldview becomes more common, the culture will shift into more culturally creative operations. This will include use of the alternative internet based media to permit reflection and broader dissemination of a cultural creative world view, thus influencing further the spread of its own memes. An example of this at work is the Alliance for Sustainability and Prosperity (ASAP) <http://www.asap4all.com/>. (See also Costanza R, Kubiszewski I, editors. *Creating a sustainable and desirable future: Insights from 45 global thought leaders*. Singapore: World Scientific Publishing Co. Pte. Ltd; 2014.)

Discussion

The metaphor of addiction was challenged on the grounds that it blinds us to consumption. However others felt that it caught various aspects of the situation well: addicts stuck in a cultural milieu, advertising as pushing, addiction as self-image ...

Questions were raised about the practicalities of realising these objectives, and the importance of changing minds. Issues of stated intent to change versus measurable change in actual behaviour, issues of anxiety relating to the uncertainties of a different future, the power of the present.

Summary

Thinking of cultural transformation as an evolutionary process reveals (unfolds) an approach to systems change that regards influences into the system as selection pressures. Culture is composed of worldviews, institutions and technologies, and it is these that subject to selection pressure. Subcultures within a dominant culture will hold and practice different attitudes (values, beliefs, and

emotional attachments), institutions and technologies. It is these differences that allow a selection process in response to pressures from the biophysical and social world.

Scenario planning is a methodology for envisioning, and testing out, a set of possible futures. Cultural transformers can use this to elaborate stories of the future with which to engage people in bringing about those futures. It allows people to practice different cultural variations to see which ones work better in creating the world we want.