

## **Too many cyborgs in an identity crisis?**

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Durand (1977) suggests that there are parallels between phases of population trends in China and Europe since the beginning of the Christian Era, and that this commonality counts for North-Africa, Southwest Asia, India-Pakistan-Bangladesh, Southeast Asia, and Middle and South America as well: places where the demographic expansion was certainly not related to industrialization. How is this possible? And, more importantly, what does this mean for the future of our planet and the apparent problem of overpopulation? The question asked is one about dynamics. Not just dynamics, but the historical or evolutionary dynamics of a system--baptized "Gaia" by environmentalists a while ago--driven by infinite interacting connections at different spatial, temporal and interpretative scales, and held together by a complex web of animal species, biochemical processes, and last but not least, six billion homo-sapiens radically altering its physical appearance. Organized in an infinite amount of interactions, geographies, economies, markets, organizations, institutions, boundaries, meanings, cultures, subcultures, ideas, languages, etc., etc., etc., etc., this latter species--and specifically its dominant ideological western class--has come up with the plan to spread the idea that when we construct a concept of nature we can separate it from the concept of culture. Consequently we can use the concept of culture to explain the nature of things. This state of affairs is part of the history of population science, and it is crucially intertwined with the predicted answer to the question of overpopulation.

From the early France centuries of government power, the need for control over population gave rise to a discipline aimed at counting and graphing the taxable population of interest. The successful rise of scholars trained in formal demographic methods fit well in the Enlightenment philosophy that split nature from culture and managed to revolutionize technological advancements leading up to the Industrial Revolution. Furthermore, formal demography gave birth to the descriptive statistical sciences, including sociology, economy, and public health. Today, it appears that social demography--undefineable, but apparently trying to understand the social consequences of the numerical growth of populations--is in a state of crisis. No conclusive evidence can be found on the link

between population and food, between population and economy, population and environment, population and technology, population and fertility, mortality, emigration, etc, etc. Again and again, it appears impossible to dream up the idea that the human species is able to rise out of the dust of their Gaia ecological webs to see and observe the population-environment system from a detached point of view. Even after leaving our planetary system and scanning the earth surface with high-tech satellites, the problem of complexity persists. All we gain is another technology toy to be distracted by. In the end, the most powerful insight seemingly coming from social demographers are measurements of inequality showing the power relations within populations. This is the truly remarkable inversion of formal demography as tool for state control to a tool for state critique.

But if social demography can not provide conclusive "empirical answers" predicting if we are "okay or not" with regards to population-environment questions, and instead seems to be heading for critical, policy relevant analyses, then what is it social demographers intent to do? The "empirical observation" from this student during the past year of demographic classes is that the identity crisis of social demography is strongly related to the use of languages which force it to remain uniquely allied to the dominant legacy of formal demographic methods and techniques. A legacy built upon the historical assumption that indeed nature is separated from culture, and that based on this it is still possible for the demographer to "model" this reality as to predict the relative importance of bounded concepts and their relationships. To an anthropologist, this is interesting.

What is it that the "formal-social" demographers do when they ask the question if the world will be overpopulated or not? The first assumption which remains hidden has already been addressed: they take it for granted that nature is indeed separated from culture. After all, that is what we "see". Consequently, the imaginary objective facts measured by the instruments are used to create a simple order where populations--as expressed in numbers of people or events are usually seen as separated from their environment--expressed as number of resources--and this is used as basis for the understanding of why radically differing populations migrate, die or give birth. According to the anthropologist Bruno Latour (1993), such an act suggest that in the chaos of unseen nature-culture hybrids, the (western) dualist perceptual model extracts the nature-culture

division and based on this quantifies the relationship and ignores the qualitative, chaotic and political underlying perceptions that link science to society.

Secondly, the empirical observations made about populations and their environments are put in an historically situated framework of science (Kuhn). Philosophers, historians, anthropologists and sociologists have all traced the development of population-environment explanatory models in various forms. Frameworks in which to relate population-environment relationships has seen a rapid and significant development in the past fifty years, moving from environmental determinism--where environment determines genes and behaviors--to an adjusted cultural ecology where "cultural core" are constraint by ecological contexts, to ecosystemic cybernetics where feedback loops self-regulate homeostasis, and finally to an historical understanding of complexity in system behavior. Of these perspective, it is usually the homeostatic one that reigns dominant in formal social demographic models, and within this explanatory framework, history is seen as linear and self-regulating.

Finally, the formal-social demographer creates an integrated model of reality based on "simple" but elegant models of markets, fertility transitions, population projections, mortality events, emigration movements, and power relations, and this quantitative model is used to explain the relationship studied. Whatever the models do not explain is labeled as some sort of theoretical residue, sometimes labeled culture (Davis, 1990), sometimes labeled technology (Bound & Johnson, 1992). Together, these three steps create a demographic method in which the social demographer seems compelled to move.

I believe this situation is unfortunate. Population-environmental interactions are embedded in social relationships that are ecological, biophysical, historical and anthropological, but fundamental interdisciplinary nature of social demography remains hidden and theoretically dominated by an economic and sociological, formal method. In line with this, McNicoll's (1995) points at five neglected issues--1) scale, 2) discontinuity, 3) politics, 4) international spillovers of population growth, and 5) history--and suggests that the difficulty encountered in economic theory in finding empirical answers to the question posed is mainly due to the limiting assumptions that are needed to built a formal

model. Social demographers can make ample use of critical theories and the plurality of alternative interpretative frameworks to better contextualize and inform such models. Examples are the flexible complexity of environmental history, the political ecology of landscape and land-use, post-structural thought and cultural studies, the phenomenological understanding of human experience, feminist ecological theory, philosophy of science, non-linear history, etc. A general argument common to all these theories is that it is not the answer itself that matters, but also the person who asks the question and the language used to find the answers.

In recent decades, the dominant homeostatic model of cybernetic feedback loops and evolutionary progression has come under attack. This move to me has promising implications for the understanding of population-environment interactions. The natural sciences have slowly been moving away from treating nature as in an energetic equilibrium and linear in causality and have re-injected their topic with historical concerns. It was indeed a physicist--Arthur Iberall--who was the first to visualize the major transitions in early human history not as a linear advance but as the crossing of non-linear critical thresholds, or "bifurcations" (De Landa, 1997). In line with Livi-Bacci (1997) and Boserup (1968), Iberall suggest that the transitions from hunter-gathering to agriculture, or to industrialization, can be seen as transitions in non-linear systemic states instead of linear phases towards progression. What is meant is that population and environments interact to change their state of affairs in a self-organizing manner when certain thresholds are exceeded. From this perspective, I believe the current high growth, technological, and ecologically intense (global warming) situation can be anticipated to be undergoing a radical phase transition. The state of this transition is unknown, but the non-linear historical regulation of population-environmental interactions is nothing new. In evolutionary ecology such transformative moment is simply called adaptation, and this has been the cornerstone quality of the human species in the past 300,000 years.

I think what is bothering most of us about the expected phase transition--or adaptation if you like--is the problem of quality of life, and this links dominantly to the role technology plays in it. As Commoner (1991) concluded, it is the nature of the technologies of production that are mostly influential in determining environmental

quality, not population pressure itself. This observation is interesting because it positions technology as of central importance to us. And here I believe we made full circle: it is only in a dualist western society that technology is perceived as outside of us, or as an "object" capable of destruction by "illegally"--or without asking--entering our "subjective" world. We fear technology because we have alienated ourselves from it by maintaining the idea that reality is composed out of an objective nature and subjective culture. A dualism which allows ethics that links both to escape and powers that be to exploit what is essentially our own "body," the blood and life of the Gaia which allows us to live. Not recognizing the boundaries of planetary health in this detached mode of observation, the possibilities of increasing inequality have become embedded in the management of technological adaptation to the Malthusian condition of poverty, degradation, and starvation. Perhaps if technology ceases to be an artificial solution to the original beauty of nature and the ideal of harmony, but instead becomes perceived as part of this web of elements itself, then the boundaries between populations and environments might become blurred as well. In this way, Gaia would become part of us, to protect and nurture instead of exploit and abuse. I think this reconnection will happen because such adaptation is systemically needed and will be forced upon us as an automatic, "emergent" property of the non-linear, self-organizing, process of Gaia itself. It is like Crenshaw et al (1997) struggling to make sense of the apparent chaos that underlies the laws they want to find, forced to retreat to a "one-time windfall effect" and the possibility of a "demographic ratchet effect" (982) but without framing their move in a non-linear explanatory model.

Within this context, social demography can be fruitfully redefined as trying to understand the relationship populations have with technologies, and to understand how technology affects reproduction, mortality, and movement in the context of its shifting meaning to westerns, humans of flesh and blood. One way of dealing with technology has been suggested by the feminist and anthropologist of science Donna Harraway:

By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs. The cyborg is our ontology; it gives us our politics. The cyborg is a condensed image of both

imagination and material reality, the two joined centers structuring any possibility of historical transformation. In the traditions of 'western' science and politics--the tradition of racists, male-dominant capitalism; the traditions of progress; the traditions of the appropriation of nature as resource for the productions of culture; the tradition of reproduction of the self from the reflections of the other--the relation between organism and machine has been a border was. The stakes at the border was have been the territories of production, reproduction, and imagination. This essay in an argument for pleasure in confusion of boundaries and for responsibility in their construction. (1985; p.66)

Cyborgs as we are, our imaginary world still deceives us in posing an environment separate from human populations. In the end it is thus us who are in a crisis of perception. If this is so, then the task for the social demographer might be to help figure out how populations adapt to this perceptual challenge in the generations to come.

#### **References:**

- Boserup, Economic and Demographic Relationships in Development, p. 11-76, 116-121.
- Commoner, B. (1991) Rapid growth and environmental stress. In: Consequences of Rapid Population Growth in Developing Countries (Proceedings of the United Nations). Taylor & Francis: New York.
- Crenshaw, E.M. A.Z. Ameen, M. Christenson. 1997. Population Dynamics and Economic Development: Age-Specific Population Growth in Developing Countries, 1965 to 1990. American Sociological Review, 62: 974-984.
- Davis, Kingsley. 1990. "Population and Resources: Fact and Interpretation." PDR. 16:1-21.
- Durand, John. 1977. "Historical Estimates of World Population: An Evaluation" PDR. 3:253-296.
- McNicoll, Geoffrey. 1995. "On Population Growth and Revisionism: Further Questions." PDR 21:307-340.
- De Landa, M. (1997) A thousand years of non-linear history. Swerve.
- Latour, B. (1991) We Have Never Been Modern. Van Gennep
- Livi-Bacci, M. (1997) A Concise History of World Population