

Can we learn anything about the function and value to human societies of multi-cultural diversity from biodiversity in "natural" systems ? Does multi-cultural diversity mirror biodiversity ?

What is biodiversity, its function in natural communities, and why are there so many species ?

What is an environment-oriented society?

What are the relevant feature of Culture in society to make it an environment-oriented one ?

Does the assertion that "Multi-cultural diversity mirrors biodiversity" have any real meaning or resonances for the whole issue of diversity as a resource ?

Can we help the process of sustaining multi-culture and the movement towards a more environment-oriented society along in any practical way (LEAD) ?

This is not the only area people seek, and claim to find, parallels between a human society, that needs to be re-adjusted (to become more environment oriented) and so-called "natural Systems" functioning. For example:

Wagner - writing about waste generation and disposal in human societies says:

"most currently used materials will have to be recycled, just as living organisms have recycled water, oxygen, and carbon dioxide for the past billion years. In following suit with our man made refuse, we will finally be returning to that steady state environmental balance known to all other organisms of our planet (Wagner, 1974).

Unfortunately such broad generalizations and parallels, seem less convincing than those who actually worked on natural systems to which reference is being made and who know that they exhibit:

shortage of supply, the build-up of inaccessible reservoirs, leakages from the system, catastrophic mechanisms for the release of substances and the restoration of both material availability and the re-instatement of diversity such as natural forest fires in both America and Africa (and probably elsewhere).

Diversity or Biodiversity

There is a story of J.B.S.Haldane - a famous British geneticist and biologist and a life-long Marxist - who was in discussion with some Christian theologians. They asked him if his long study of the Creation gave him any clues to the kind of being the Creator was. What kind of person is God ? They asked. Haldane replied: Someone with an inordinate proudness of beetles !

It is indeed true that of the 2 million or more animal species, over 75 % are insects and of those a very large proportion are Coleoptera or beetles. And this Diversity in the animal (and also the Plant and other kingdoms) has for many decades fascinated and occupied the researches of biologists and ecologists.

Why are there so many species ? What can be done with 2 million animal species which cannot be done with 200,000 ? Or alternatively, why are there so few ? Why not 20 million or 200 million animals species ?

Nearly 40 years ago the eminent American ecologist and evolutionary biologist G.E.Hutchinson wrote a classic paper Homage to Santa Rosalia - Why are there so many kinds of animals ?

Ecologists have been fascinated by Diversity in natural living systems and communities.

Diversity is one of the central concepts of ecology.

But first I must explain the ecologists concept of Diversity is not exactly the same as the word, taken over by conservationists and the environmental movement in policy and advocacy writings, as Biodiversity - number of species.

In scientific ecology - Diversity - has reference not only to number of species, but also number of individuals in each species and area. The significance of this is as follows:

A species is a genetically or geographically isolated group of individuals that INTERBREED. To do this - in higher organisms - they have as a first step, to locate a partner. The more sparsely distributed the more difficult this is - and density or sparseness is an attribute of both number and area. Hence in any long-term interest in diversity, or biodiversity, ecologists measure it to take this into account - often with some quite complicated indices. But this, outside the convention meeting rooms, is how natural communities work !

Bearing this in mind then, why are there so many species ?

The answer lies in food - natural communities are about Eating or Being Eaten !

This phenomenon is called a Food Chain. Feeding needs to be efficient (not any rise spending more energy catching your food than the energy content of what has been caught) but not too efficient - or the predator extinguishes his prey altogether. The chance of exterminating your source of food becomes less if there are a number of alternative foods (or prey). Thus not a food chain, but a food web.

Thus, it is argued (and I have simplified greatly) a greater diversity of organisms allows the community to persist better.

Diversity = Stability

So why not more and more ?

The limit seems to be determined by the physical environment - limit to biomass production by length of growing season, temperature, water, nutrients (essential)

There is evidence for this in that the warm humid tropics are far more diverse than dry desert communities, or cold, Arctic ones, which, species-wise are often very simple.

Thus to summarize:

complexity (or diversity) dampens out oscillations, and increased food web complexity gives increased stability and resilience to perturbation. Thus the doctrine according to Hutchinson (and many others). But there are many qualifications to this simple diversity = stability doctrine.

I - if you have a species with large individuals particularly a large brain, it can adapt much more by plastic rather than genetic adaptation. It adapts behaviourally - then there is no longer an adaptive advantage to more new species. Thus it is usual to have a much greater diversity of small than large animals.

II - Increase in stability with greater diversity is highly non-linear. It does not just go on increasing, adding more and more species tends to increase the chance that one may be in an unstable relationship with others, making the whole Web-community unstable. In fact some very simple, species-poor communities have been shown to be highly resilient.

III - But even if more leads to greater instability it often leads to a more thorough exploitation of the resources of the environment also.

ENVIRONMENT - ORIENTED SOCIETY

Thus as I hinted at the beginning of my discourse, messages from nature, natural communities, are not always clear cut recipes for the ordering of human societies. I am not sure that it would be either feasible or desirable to insist that a human society followed a course seem to be a feature of a natural community if reasoning, logic, experience, and the like suggested otherwise !

However, one might expect to see an environment-oriented society:

- live off interest not capital - another central ecological concept of maximum sustainable yield (MSY)
- - adapt this in the light of whether or not a human society was subsistence or relied on commerce, trade and the like
- adapt to this depending on whether the resource is
- renewable or not - recycling - substitution (non-renewable), recognizing that even recycling of non-renewable materials is a leaky process and also requires an input of energy; thus we need to encourage dematerialization

- recognize that there is no Khmer Rouge solution for human societies but only one where we can move in a certain direction - not prohibit practices over night

Culture and society

there are some intriguing parallels and differences in the conceptual role of Diversity in Ecology and its adoption (as Biodiversity) by conservationists and the environmental movement and the significance that Culture was seen to have by Anthropologists as a Product of a society and now the social relevance and intrinsic significance, as an independent variable, by sociologists

Multi-culture		Biodiversity
Anthropology	Product	Ecology
Social Science	Determinant (of value)	Environmental Movement

For several decades it has appeared as if society had outgrown the need to concern itself with Culture - progress had taken us beyond this.

But now the part played by culture in Determining

- social structure and relationships
- individual and collective action
- attitudinal changes

is once again, far more prominent on the agenda of social science. Does it lead to any critical lessons for the environment-oriented society ? Does multi-cultural diversity mirror biodiversity, as some claim ?

Diversity as a Cultural Resource

in looking at multiculturalism it is necessary to look for empirical evidence of its role and function at an aggregate level and only after this seek to verify indicators from a micro-perspective

need to decide what constitutes a social group before we can come to firm conclusions about the possibility of the co-existence of many culturally distinct ones. Are they linguistically based (at least 500) ? One would be tempted to ask if multiculturalism is all about colour or if it goes deeper and addresses our characters, customs and eccentricities ? Can people of different cultures and ways of life truly coexist and get along in one country ? Is it possible to cherish these differences, or should society actively strive towards cultural hegemony and assimilation of newly immigrant groups to the extent that native cultures more than skin-deep are questionable ? On a superficial level, multiculturalism concerns colour and language, but on a more profound level, cultural diversity means much more than differences in colour and in language.

And so does biodiversity concern more than diversity of species. At first, I would like to look at the challenges of looking beyond colour and language.

In some countries where the colonialists have established their independence, the U.S., Canada and Australia, multiculturalism is a central political arena. The Department of Immigration and Multicultural Affairs in Australia has identified three dimensions of multicultural policy: cultural identity, social justice and economic efficiency, and also maintains that all Australians have to accept the basic structures and principles of Australian society. In other countries where the colonialists have gained sovereignty such as Brazil and Mexico, multiculturalism is at best an intellectual concern. Strikingly, Nahuatl or Quechua cannot be declared official languages without threatening political stability. In the U.S., a sacked employee can sue for racial discrimination, and this is an indicator of a different sort of discrimination responsible for the racial inequities, more through economic differentiation in the U.S.. By comparison one only has to remember the recent events in Chiapas to see what form of discrimination are at work in Mexico. It seems that the possibility of multiculturalism rests with democratic participation. Comparing these two fates of multiculturalism allows to learn some lessons from differences between colour and language and the linkages between the ways human beings at the end of this century construct their identities, as individuals and as members of society. Possibly, multiculturalism is politically possible in the U.S. and Australia due to how individuals in these societies interpret racial differences, to the extent that they can represent to themselves stronger differences in the way of life and the means of explaining the world around them. In Mexico and in Brazil, multiculturalism is not possible because Mexicans and Brazilians can not represent differences in the way of life and therefore social identity in these countries seems more exclusive.

Anthropologists have observed and analyzed the "colonial encounter" and currently envisage the "development encounter". The insights of this discipline of the humanities provide one key link of the present social conditions to explain these differences in the possibility of multiculturalism: the constitution of identity contains two contingent conditions, the social Other and the individual Other. In the French tradition, anthropology has been defined as the science of alterity (alterité) where the Anglo-Saxon literature talks about "Othering". The individual Other also refers to the Alter Ego in psychology. One has to handle this with care and as little jargon as possible. Expressed in other words, the individual constitutes its self-representation within one society, me, a male researcher of a certain age, head of a household, etc.; but also in relation to the outside of that society, what all the members of this society are not. Individual identity and social identity are not separable. Expressed in historic terms, a member of the American, Canadian and Australian society inherits references of Not

being a Red-Indian and Not being an Aborigine, which are necessary complements of his or her position within society.

Philosophers such as Rorty, Taylor and Habermas approach the constitution of modern identity in response to the postmodern challenges by McLuhan, Lyotard and Baudrillard, tracing fundamental aspects all the way back to Descartes and Kant. It seems possible that they might clarify whether the driving force for today's identity politics lie in the economic sphere (neo-liberalism) or in the cultural sphere (the explosion of information sources). Whatever the outcome, the atomization of the individual in modern society reinforces the importance of identity. Choices about work, consumption and family become more complex and require more and more effort. With a weakening of traditional forms of life, an individual has more responsibilities to choose between different forms of life available to him or her. This contains necessarily a renewed balance between social and individual identity, where an individual would have been content to fill in a predefined set of work, consumption and family life, today one attempts to construct original sets. These sets can be elaborate ensembles taking care of even the most meaningless details, what Mike Featherstone has called the aestheticization of everyday life.

Without going into the complexities of anthropology and philosophy, I would like to conclude that the different fate of multiculturalism between the U.S. or Australia and Brazil or Mexico could be a reflection of the differences in basic social conditions such as average income, industrial development and participation in democracy. While it is not clear how to provide a workable definition of multiculturalism, or how to integrate it into basic and higher education, it is possible to use the empirical evidence of such a comparison. Going beyond colour and language, other structural characteristics of society point to important factors of identity politics and the fate of social differences. Ethnicity, race, class, and education (kindergarten through higher education) interact to integrate populations, while also serving vested interests and enhancing group identity and status. Multiculturalism is a political and social phenomena that affects and interacts with education and its institutions.

When individual identities are the result of explicit and prolonged efforts, social identity becomes a more dependent variable. From a macro perspective, the increase in regional independence in Spain or in England is the result of large numbers of individuals choosing to refer to Catalan, Andalucian, Welsh and Scottish cultural traits. Regional autonomy will be maintained only when these individuals have the cultural means to maintain the social identity connected this regional sphere. Social identity is stabilized when cultural traits for the construction of individual identities are available. Otherwise, it can break down in even smaller regions or refer to a regional autonomy within a larger body, such as the European Community. Multiculturalism could be a state of relative

autonomy, where social identities are in flux. It seems to me fair to assume that there is no evidence at present that social identities can itself become multiple out of themselves. Former Yugoslavia, urban decay in metropolitan cities and recent rises in racism in some European countries are powerful evidence against the possibility of multiple social identity.

The possible approach to multiculturalism seems to be that individuals use a diverse range of cultural traits available to the individual, with the **possibility** of that diversity remaining in the social identity appearing amongst many such individuals, even so there must be some degree of unity within that social identity. This is a similar formulation as the Open Society as it was conceived by Karl Popper. Governments can provide institutions capable of offering a range of cultural traits, especially through education and the media. The power of governments to do so is fundamental. The only media form presently escaping governmental control is the Internet (observe the efforts of Singapore's government to limit Internet access). Beyond the institutional pre-conditions for a range of cultural traits and their availability, governmental means to foster multiculturalism are on the other hand rather limited. If multiculturalism and intercultural dialogue reflect first of all the increased complexity of individual identity formation, it is a cultural process, beyond political control. Only at the fringes of the middle class, governments can act on individual identity formation, for example by stigmatizing single parents.

When one looks at the difference between Brazil and Mexico on the one hand and say, the U.S. on the other - in terms of the co-existence of different cultures - it is difficult not to associate the differences with: average income levels, industrial development stage, effective participatory democracy, access to basic & higher education
How far should the aim be to what Popper called The Open Society ? where individuals have the possibility of remaining within a social identity but Not the Obligation ? And where they are not threatened or coerced, one way or another, by forms of secular fundamentalism that brooks no significant social divergence.

And finally, how do we confront, in trying to bring lessons from the Natural World to Human Society, the view that "Culture is that which is transformed or created by the human mind (one of 180 definitions) Nature is that which is not so transformed or created". Obviously, we must address this basic dichotomy.

Leadership for Environment and Development

I work for a multicultural institution LEAD. It is concerned with the unsustainable nature of present day development and life-style aspirations. Of course, much of this concern arises from the present day life-styles in developed countries

I have to say that the experience here re-enforces the DILEMMA I have been trying to expose. I find myself more at ease, at home, mentally attuned to, those I meet there who rather than being Christian, English, Internationalist are say Moslem, Urdu speaking, Nationalist but seem to share with me (or with them) common interests, Worldview, Code of behaviour, Instinctive understanding, professional commitment than I ever share with the majority of those I suppose, would normally be judged who belong to the other cultural grouping, as myself. Culture, language, Class, background experience and education, ideals, belief, seems to be transcended in a common interest and respect. Quite a dilemma when advocating a positive attitude to multiculturalism.