

IS SOCIAL SCIENCE SCIENTIFIC?

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ABSTRACT: Social Science can be scientific. Natural selection theory provides a way to explain past social events and to predict their future development that is independent of any teleologically oriented social ideology. However, to so regard social institutions would disrupt arrangements for allocating selective value within modern societies. Hence, for many people it is not selective to use natural selection theory to analyze societies. Mainstream social science is therefore not scientific. But unless rapidly evolving modern societies are understood on the basis of some standard that is not self-referent, those societies may evolve into a state of irreversible disequilibrium that would be non-selective for most humans.

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Most practitioners of the social sciences would answer the question which is the title of this essay in the negative. As explanation, they would say "Social science is scientific to the extent that it is a logical, organized effort to gain knowledge; but it isn't really scientific because it deals with human behavior, which can't be reduced to scientific laws." On further thought, a respondent might add: "There is in addition a basic problem of self-reference. Humans are part of society. Thus we can't study it like we study a physical or biological system, from an outside perspective. Even in the case of an anthropologist studying an alien culture, the social observer's own role constantly obscures his or her observations of social issues."

The purpose of this essay is to challenge this conventional response. I begin by asking two questions. Can social science be scientific? If it can, then why isn't it? These questions are followed by an inquiry into the effect of the failure to consider social questions scientifically.

Question One
 Natural Selection and Culture
 Can Social Science be Scientific?

In his chapter "Galileo's experimental discourse" in The Uses of Experiment (edited by David Gooding, et al, Cambridge University Press, Cambridge, 1989), R. H. Naylor makes a useful distinction between Galilean empiricism and the contemporary

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Aristotelian teleology. By separating the study of nature from final causes, Galileo freed investigators to concentrate on the phenomena themselves. Given the large and rapidly growing capacity for observation associated with global travel and the development of telescopes, microscopes, and other instruments in the seventeenth century, such separation seems to have been a key element in the "knowledge explosion" associated with modernity in Europe. Metaphysics gradually lost the power to limit physics, as the study of those systems became what we now call "scientific". The focus of attention was on perceptions of the phenomena and the associated observable regularities. Theories based on those regularities were constructed without consideration of either their cosmic purpose or their effect on morality and law. Instead, the validity of a theory was determined by how well it fitted facts generated through systematic, replicatable experiments and field work.

The Galilean decoupling of what is from what ought to be was confined to studies of non-living phenomena. It entailed only the divorce of cosmology from theology or, more generally, social ideology. It was left to Darwin to separate biology from theology through the concept of natural selection by the differential survival and reproduction of organisms. And as Alfred Russel Wallace's post-1859 writings make clear, "biology" in that context excluded human society.

What Spencer and Comte attempted was to separate theology or any form of social ideology from the academic consideration of human societies and human individuals. They sought to make the study of social issues social science. It is in the course of this third step that the Galilean scientific program has stumbled.

The immediate problem is that humans are teleological. It is false to state that we act without conscious consideration of the consequences, a characteristic of all abiotic and almost all (non-human) biological processes. Moreover, human motives and behavior are often strongly affected by ideological considerations. It would thus appear that social ideology and human behavior can not be separated; hence positivism, scientific realism, methodological pragmatism or any other approach which organizes observed regularities within frameworks that are independent of social ideology are too limited to be meaningful analytical tools in the study of social issues.

The rejoinder is that while humans can and do act in accord with all sorts of different motives, some of which are teleological, the relevance of individual humans to the ongoing meta-process of terrestrial life is governed by their selectivity. That relevance operates at two levels. First, without direct or collateral descendants, the genetic information unique to an

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individual will disappear. Second, to the degree the cultural information created and/or carried by an individual is inconsistent with human survival and reproduction, that information is less likely to be expressed as a cultural trait. An ideological position inconsistent with survival would be the practice of drinking a deadly poison to prove one's religious faith. The demise of the Shaker cult is an example of what happens to a social ideology that is wholly inconsistent with reproduction.

Cultural traits (i.e. expressions of cultural information) that are inconsistent with individual survival and reproduction will be preserved, if at all, only at a low frequency of expression. A example is homosexuality. People whose behavior is strongly characterized by that trait tend to leave fewer descendants than people who are not so characterized. Many people whose primary sexual orientation is homosexual also have sexual relations with members of the opposite sex. Homosexuality can therefore be expected to persist, regardless of whether its main cause is genetic or cultural. However, under circumstances similar to those prevailing in contemporary Western nations, homosexuality as the primary or exclusive mode of sexual expression can be expected to persist at a low level relative to exclusive or nearly exclusive heterosexuality.

The concept of natural selection gives social science the potential to be scientific. In studying the members of a social group, traits and the ideas which lie behind them can be observed, those traits can be assessed for their selectivity (i.e. to what extent do they promote or hinder the survival and reproduction of their carriers), and theories can be constructed based on any observed regularities. If consistent with systematic and replicatable observations, those theories can be used to explain past events in human societies and to predict future events, without recourse to any teleologically oriented social ideology.

Two caveats are in order. First, since social ideologies are features of human culture, they can not be ignored by a scientific theory of culture. The distinction is that such a theory explains the role of social ideologies in culture; it does not use social ideologies to explain culture.

Second, natural selection no more answers all social questions than it answers all biological questions, since there will always be individuals who act in a counter-selective manner. Its explanatory and predictive power is limited by our ability to organize the immense amount of individual human diversity. But natural selection does provide a framework external to culture on which a meaningful theory of culture can be logically organized. Given the widespread dissatisfaction with other general theories of human society, the scientific option, based on the principle

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of natural selection, would seem entitled at least to respectful consideration.

Question Two
The Non-selectivity of Natural Selection
Why Social Science is not Scientific

Why then have the vast majority of social scientists rejected the scientific option? Why have advocates of a natural selection based analysis of social issues, such as Richard D. Alexander, been relegated to the fringes of social science? Why has Napoleon A. Chagnon been subjected to personal denunciation for his natural selection analysis of the Yanomamo? Why do mainstream academics accept the natural selection perspective on social issues only when its proponents hold that the social group not the individual person is the unit of selection, as in the cases of Richard N. Adams and Glendon Schubert?

The answer lies in the selective effect of such an analysis on society itself. To claim (1) that natural selection is the ultimate factor which determines cultural evolution and (2) that the individual human is the unit of selection is to attack the foundation of that cluster of cultural traits called morality. Morality is conventionally based on the proposition that its tenets represent the collective good. Individuals are claimed to advance their own interests by advancing the general interests of the group to which they belong and to which the moral system in question applies. (Morality so defined is to be distinguished from moral systems founded on individual rights, which are compatible with natural selection.)

Behavior in accord with the collectivist definition of morality benefits the members of a group in a general sense. But such moral behavior can also impair the selectivity of some individuals who have imposed upon them duties that are disproportionately heavy in relation to the benefits they receive. Extreme examples would be soldiers ordered to advance across a mine field, or young women forced to give up marriage so that they can tend to elderly relatives. More common examples would be a young white male who is denied a job in favor of a minority applicant, in order to remedy the effects of racist employment policies that were abolished before he was born; or a childless woman who is forced to work harder for the same pay because a co-worker is often absent to tend to her sick child. As a result, the young man may not be able to earn enough to start a family, and the childless woman may be under such pressure at work that she can not get pregnant. In all these cases, the answer supplied by the collectivist morality is "Too bad; the greater good prevails."

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These disproportionate results stem from the fact that in traditional and modern societies customs and laws (the formal rules that operationalize morality) can not be selectively neutral. The complexity of those societies combined with human variety have made it impossible to allocate selective costs and benefits to each person in strict accord with his or her contribution to the overall social process. In communities that are large enough to have a state-type organization, laws are either of general application or they are arbitrary. Laws of general application put people into categories. As members of those categories they are individually charged with duties and granted benefits regardless of purely personal circumstances. For example, American Social Security disability benefits are available in equal amount whether your problem results from a congenital medical condition or an auto accident caused by your own carelessness. Were such benefits to be allocated on a strictly individual basis, the myriad moral credits and debits inherent in each disability applicant's prior life history would have to be examined and weighed. That task would be too complex for any institution. Decisions regarding disability entitlement made in the absence of categorical guidelines of general applicability will be based in large part on the personal prejudices of the hearing officer; i.e., they will be arbitrary.

Categorization is an ideological construct. Inherent within that construct is the view that individual people are just parts of a greater and more important social whole. In modern democratic societies, collectivist morality leads to egalitarianism. Social justice demands as equal a distribution of resources as possible. The general interest of the group is held to be advanced by enhancing the standard of living of the least prosperous. Institutions redistribute resources from those who produce more economic value than they consume to those whose consumption demands exceed their capacity to produce economic value. While satisfying both collectivist and democratic moral standards, policies based on substantive equality are counter-selective for those whose production is taken away to be redistributed.

As an alternative to collectivist morality, one can base a modern social system on procedural equality. That option implies a pure market economy where laws are restricted to enforcing private bargains and suppressing non-consensual acts such as robbery or assault. Each citizen is granted equal opportunity to use the institutions of the society to benefit himself or herself. But different people have different capabilities. In a world of limited resources, some people are going to be more successful at controlling the economic value required for survival and reproduction. That result is in turn counter-selective

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for those lacking such capabilities.

Following the collapse of Soviet style state socialism, the current consensus solution to the problem of social justice is a compromise. Economic value is generated through a market system based on procedural equality. A portion of that wealth is then redistributed via state institutions in accord with principles of substantive equality. The redistribution of economic value is justified on the grounds of a morally mandated social solidarity, which is in turn derived from the general principle of altruism. But except in cases of significant society-wide genetic kinship, (e.g. French Canadians, Zulus, Afrikaners), such purported solidarity has little basis in terms of individual selective interest; hence the moral basis of the consensus solution is specifically compromised by a natural selection analysis. As long as individual humans are recognized as the unit of selection in our species (and how many people have children in order to benefit society?), there seems no way to resolve this conflict between natural selection and collectivist morality.

To criticize existing laws because they vary from the selective neutrality standard invites challenges to the redistributive arm of the conventional social order. Since there is probably no order acceptable to all interests, such criticism could lead to a breakdown in the present order without providing a basis for any replacement other than procedural equality. That result, for many people, would be less selective than the existing, albeit imperfect, arrangement.

It thus appears that the problem with separating social ideology from social science is not based on teleology but rather on the facts of human social organization. The credibility of collectivist morality and the laws derived therefrom is diminished by application of a natural selection analysis to human culture. Why? It is because that analysis characterizes basic moral principles like altruism as mutable functions of economic and social conditions rather than immutable truths. To characterize the propositions that undergird a moral system in relative terms compromises people's selectivity, to the extent their selectivity depends on the existing system of collectivist morality and its attendant rules of law. Separation of the study of social issues from social ideology thus has met and will meet fierce resistance on grounds readily explainable in terms of natural selection.

From the foregoing it appears that natural selection is a valid basis for analysis of human culture. A social science based on natural selection can be scientific. Natural selection is a positive organizing principle which is (1) founded on observed regularities and (2) independent of any ideology entailing moral judgments about possible outcomes. The real problem is

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that a natural selection analysis of human culture is inherently disruptive of the conventional social order based on that culture. It raises questions about the allocation of selective value and costs which social institutions, faced with practically infinite complexity on the individual level, can not resolve to the satisfaction of individual people. No such disruption occurred within physics, chemistry, and biology when they were liberated from social ideology and thus became sciences. But here, the disruption caused by scientification occurs inside the subject of study itself. And since social science is a social activity, social scientists are under heavy pressure not to apply to human culture the type of analysis that can make their study scientific, one based on natural selection.

Question Three The Effect of Secular Social Ideology Society as God

The next step is to examine the implications of this reluctance to make scientific the study of culture.

The accompanying diagram illustrates how the individual human relates to his or her environment. It employs a natural selection perspective that separates social ideology from social analysis. It conceives of social change as being determined less by the internal development of cultural information and more by the interrelation of people with an independently existing environment.

As Kenneth E. Boulding observed in Ecodynamics (Sage Publications, Beverly Hills, 1978), the individual is selected against three major aspects of reality, or "world orders". The first (A) is abiotic. It includes atoms and molecules (the domain of physics), molecular combinations (the domain of chemistry), and large scale processes involving non-living systems (the domains of geology, meteorology, etc.). This first world order operates not in accord with information but rather in accord with natural laws. Subject to a deeper understanding of cosmology, we do not know the origin of such laws. In our present state of knowledge, they simply are.

The second world order (B) is biological. It operates in accord with information, which is in the first instance genetic. The biological order includes the physical construction of organisms, the somatic, and, in the special case of animals, their genetic or endocrine determined behavior.

The second order is the domain of the biological sciences, including ethology. The third (C) order is cultural. Culture is divided horizontally, first into the individual's family (or

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family substitute) and then into increasingly larger social units such as clans, economic institutions, ethnic or religious groupings, and nations. Academics also divide culture vertically into the strictly social, the political, and the economic. The cultural order is determined by cultural information, usually expressed in symbolic language. It is the domain of the humanities and social sciences.

Besides being elements of reality against which the individual human is selected, the three orders also encompass the individual. We are all simultaneously collections of atoms and molecules, biological entities, and members of social groups. The distinction between the three categories is real, based on their differing principles of order. But the categories are also fully integrated with the relevant human units of selection.

The traditional, pre-modern religions provided a complete explanation of all three orders and of the individual's place therein. In the Judaic-Christian-Islamic tradition circa 1500, cosmological and biological explanations of the perceptible world were bounded by the Biblical description of Creation. Enlargements and elaborations on that description, Ptolemaic astronomy for example, had to be consistent with scriptural givens such as the location of the Earth at the center of the Universe. The great strength of the traditional religions was that they fully integrated the behavioral precepts of their social ideology with the operation of the other two world orders.

Their weakness lay in their incompatibility with increasingly precise empirical observations of reality. In Western Civilization, a succession of intellectual breakthroughs associated with men such as Galileo, Newton, Lavoisier, Lyell, and Darwin separated both teleology and its associated ideologies from study of the first two orders. Physics, chemistry, geology, and biology left the realm of natural philosophy and became sciences.

For a brief time in the late nineteenth and early twentieth centuries, it appeared that academic studies of human culture and its social expressions might follow suit. However, as noted above, there was a formidable barrier to general acceptance of a value neutral, scientific analysis of culture. The obvious organizing principle for such an analysis was natural selection. But explicit recognition of the role of natural selection in the evolution of human culture was socially destabilizing.

The central problem of both traditional and modern societies is organization of large groups of people too numerous and scattered to relate personally to one another. The only practical solution advanced to date is the traditional one: a set of prescriptive rules enforced by powerful social institutions and justified by an ethic that places the good of the social unit ahead of the interests of the individual. Since under natural

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selection analysis the interests of individual people come before the interests of cultural expressions such as society, such analysis was in direct opposition to those rules.

By the late twentieth century, two general formulations of the modern social order have developed in the West. One remains explicitly religious. It holds that mankind has been granted by God sufficient intellectual capacity to understand how God's universe works. God has further charged individual people with the responsibility to use that capacity to further the interests of society. Those who question the scriptural basis of that assertion are assured that it can be found in the relevant texts by examination of their allegorical meaning.

The other formulation is explicitly secular. It holds that the behavior of individual humans is determined almost entirely by their social environment. Their behavior, being a creation of culture, is not really their own, in an individual sense. Every person is simply a particular temporary expression of a greater, continuing entity, human culture. Since people are the creations of culture (except in the biological sense of being physically born), culture, through its own physical manifestation society, has the authority to direct individuals how to use that which it has granted them. Not surprisingly, the charge is the same as that of the religious formulation: use your cultural capacity to further the interests of society.

Both modern Western formulations attempt to integrate the three world orders while fully acknowledging the scientific findings which destroyed the traditional system. The religious version holds that God created the abiotic and biological orders and the ordering principles which science has discovered. Unless and until the source of physical laws is uncovered by science, the religious explanation can use that mystery as a claim to credibility independent of its sometimes strained scriptural interpretations.

For those unwilling or unable to commit the act of faith which lies at the heart of the religious version, there is the secular version. It holds that since your understanding of your perceptions is solely a function of acculturation, then you as an individual have no way of comprehending the unity of your environment other than as you have been socialized. In that sense, the entire physical universe is reduced, for the individual human, to whatever the social consensus says it is. One corollary is that the physical laws themselves are functions of culture, and hence have no reality independent of it, since our understanding of the world around us is entirely mediated by culture. Hence, human culture is the measure of all things.

While ingenious, this secular argument is not very convincing to people who are constantly being jostled by intractable

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reality in the course of their everyday lives. For those who reject both the religious and secular versions, science provides an alternative: detach social ideology from the study of culture. Stripped of its self-justifying religious and secular belief systems, human culture is seen as an adaptation which enhances the selectivity of individual humans by enabling them to pool their efforts. But, as recognized at the beginning of this century, to so regard culture is to strike a blow at the heart of the modern Western religious and secular social formulations. God and society, their ultimate sources of authority, become epiphenomena. Worse yet, the social order becomes relative. It has differing selective value to each individual, making consensus as to its terms very difficult if not impossible to achieve. To assert the truth, that human culture is an adaptation, may be counter-selective for most people!

On the other hand, under present circumstances of rapid change, an overall understanding of our situation is a selective necessity. Unlike our hunter-gatherer ancestors, we today live in a physical and social environment that evolves significantly within the span of a human lifetime. Children in primitive societies never had to wonder what they would do when they grew up. They had no choice but to follow the lifeway of their parents. But in the modern world, the cultural patterns of the parents must be modified by the next generation to fit changed circumstances. Reliance on social ideology is insufficient. Analysis must replace dogma.

A non-ideological scientific methodology is necessary for such analysis, because it provides an empirical check on cultural hypotheses which is independent of self-validating cultural precepts. Except in the unusual situation where a culture suffers from irresolvable internal logical inconsistency, any culture is going to be able to explain anything, within its own terms. Cargo cults may seem bizarre to modern Americans, but, given the internal logic of mid-twentieth century Papuan culture, they made perfect sense. For all we know, fears of global warming or drug abuse may be just as unrealistic. The only way to find out is to subject the relevant hypotheses to experimental test, as opposed to ideological analysis.

The Real Problem The Conflict between Authority and Analysis

We face a conundrum. On the one hand, religious and secular ideologies are consistent with collective order. But, unexamined for their selective effects, those ideologies may also be consistent with our collective demise, albeit in an orderly fashion. On the other hand, there is no way to avoid the conclusion that a

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scientific approach to human culture opens the door to anarchy, itself a counter-selective effect. The more we empirically analyze social issues, the weaker become the principles of social order, which leads to increasing instability, more analysis, less authority, and on downward into an accelerating vicious cycle.

The matter is further confounded by differing individual perspectives. Within a small community, one can find people with very short planning horizons, perhaps an older couple with children well established elsewhere. They may live next door to a young couple with small children, whose horizons are very long. Given this basic difference in perspective, there are many courses of action or rules of behavior relating to their local community that these neighbors simply can not agree upon, even with the greatest possible knowledge and good will. The problem is compounded on a society-wide basis, where the personal ties inherent in proximate living do not exist. Where social authority is seriously weakened, the best we may be able to hope for is political gridlock. At worst there will be the kind of inter-communal violence that characterized Indonesia in 1965-6, Lebanon between 1975 and 1990, and contemporary Somalia, Bosnia, and Afghanistan.

In the United States during the last half of the twentieth century, social peace has been based on political tradeoffs facilitated by a rapidly expanding economy. During periods of high external stress in World War II and in the ensuing initial decades of the Cold War, the American population showed a certain degree of community spirit. But the more normal emphasis on individual interest has asserted itself strongly over the past twenty-five years. That orientation has been reflected in the state of public finances. Since the late 1980's, for example, Congress has purchased political peace by spending about 15-25% more than it takes in as revenue. In the absence of a credible national social ideology that would encourage real self-sacrifice or a serious increase in the coercive powers of government, it is difficult to see how that policy can change.

It appears that the promoters of a secular American society have failed in their attempt to make society God. In the absence of a universally respected secular source of authority, their social ideology lacks credibility among the people who count, those who create more selective value than they consume. Many of these individuals have not been convinced that they have a duty to transfer a substantial part of the value they create to unrelated persons whose socially sanctioned consumption demands for selective value exceed their ability or inclination to create such value.

In America today, these dissenting net producers contend that society is not the arbitrator of individual lives but rather

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is a tool by which individuals enhance their lives. They assert that the proper role of government is to regulate markets, to enforce laws against predation, and to add selective value through useful public works projects; they deny that the proper role of government is resource redistribution. These net producers express their convictions through individually oriented market and democratic institutions. They articulate and justify their convictions through pragmatic philosophies which recognize the individual as the unit of selection in environments which have an empirical reality independent of culture.

As long as the US economy continues to produce a great deal of wealth per capita, and as long as a significant fraction of transfer payment expenses are financed by claims on the earnings of future net producers, this fundamental split in the body politic can be compromised. But when and if the per-capita generation of selective value begins to diminish and the credit of the US government becomes impaired, this ad hoc arrangement may become unglued. To maintain civic order, coercion may have to be substituted. At that point, the political situation could become very unstable.

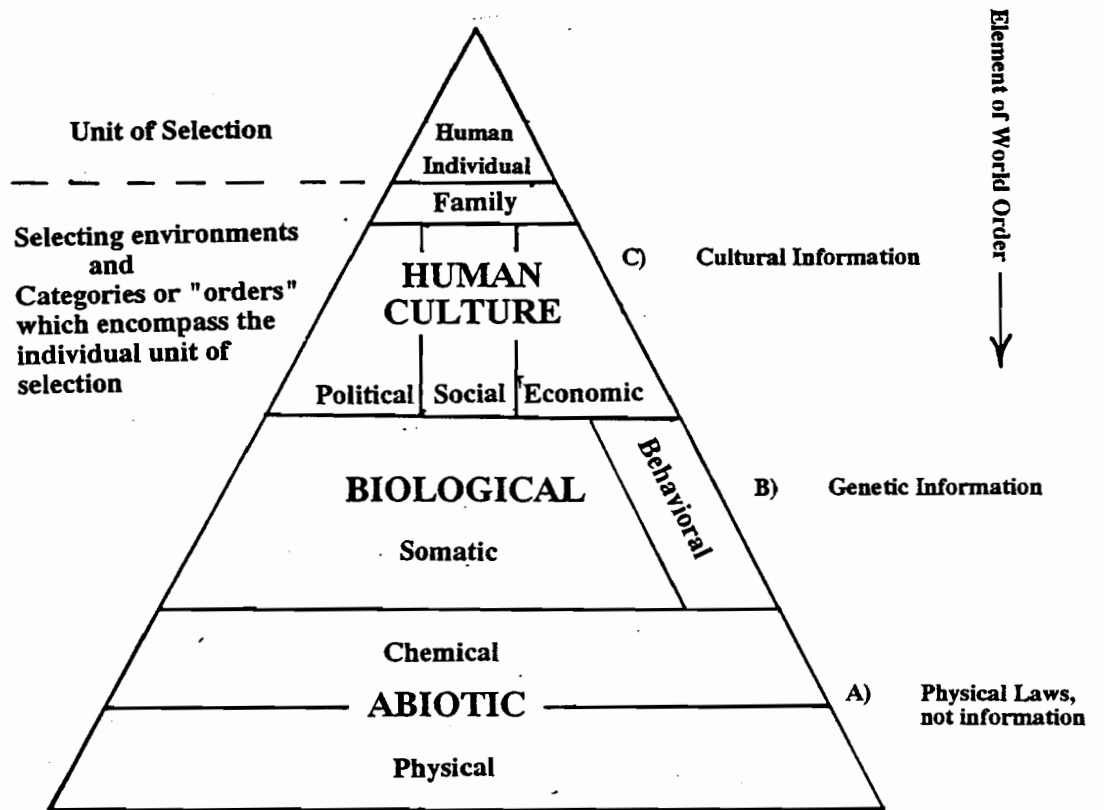
Conclusion

Social science can be scientific. To do so, it has to decouple itself from social ideology and to adopt an organizing principle that is positive, in the sense that it is based on a reality independent of culture itself. Natural selection is such an organizing principle.

But social science has failed to take this step for reasons that relate not to the analytic power of scientific methodology but rather to its effect on culture and society. Social rules based on natural selection tend to atomize societies into their constituent kin groups, an outcome inconsistent with the highly integrative organizational requirements of a modern industrial economy. But to eschew science for social ideology in the study of society is to introduce into politics and economics an element of unreality that, in the case of the United States, may lead to national bankruptcy and, perhaps, even worse consequences.

This essay opened with a pair of questions. It will close with a different pair. How long can Americans avoid an empirical examination of the social reality in which they are embedded? But if they do undertake such a project, can their society survive the examination?

World Orders



A), B) and C) are the means by which each category is ordered

