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Putting Social Structure in Its Place, Schematically

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Abstract: I apply the schema I developed in a recent *Issues in Integrative Studies* (*IIS*) paper (consisting of a hierarchically organized list of the phenomena of interest to human scientists, and the causal links or influences among these) to the case of social structure, which is defined in terms of the subgroups into which societies are divided. I discuss causal links in both directions between elements of social structure and phenomena in each of the nine other categories in my schema. This illustrates the validity of my schema, by showing that diverse causal links can be placed within it. I also illustrate the value of the schema as an organizing device for the study of social structure (or other phenomena). I draw several lessons for the future study of social structure.

IN A RECENT *IIS* PAPER (Szostak, 2000), I outlined a schema for unifying human science, consisting of a hierarchically organized list of the phenomena of interest to human scientists, and the causal links (influences) among these. I derived a list of hundreds of phenomena; discussed the five types of causation (influence); defined *phenomena, influence, causal link,* and *human science*; related my efforts to previous attempts to unify human science whether schematically or theoretically; and provided philosophical justification. I argued that the schema could encourage a more balanced scholarly effort; protect against certain types of discovery since being forgotten; encourage scholars and students to "see" the big picture (instead of imagining that the links they study *are* the big picture); encourage more nuanced public policy advice; advise scholars from different disciplines when they are speaking of the same (or different) links; give students and scholars a map to guide them in integrating diverse materials; provide coherence to Liberal Arts curricula; and help students cope with complexity, appreciate diverse viewpoints, and be skeptical of authority (see Szostak, 2002).

In this paper, I will survey the links to and from one of the ten broad categories in my schema, viz., *social structure* (which I define in terms of the subgroups into which societies are divided). I have two broad goals. The first is to demonstrate the *validity* of my schema by showing that a vast array of scholarly insight can be conveniently placed within it.[1] The second goal is to illustrate the *value* of the schema for the study of social structure (and by implication, the other categories as well). I will survey a wide array of influences both on, and of, social structure in what follows. Without some easy means of organizing (and thus distinguishing) these diverse influences, scholars will face grave difficulties in reaching a comprehensive understanding of the role of social structure in human affairs. Moreover, a scholar using the schema as a guide to the possible links from and to a particular phenomenon, such as social structure, is forced to ask questions about links that they might otherwise ignore. Indeed every link can be thought of as a question: How does A affect B?

Some scholars may hope for an unattainable simplicity whereby one theory or method can illuminate every relevant link. They may thus recoil at the complexity inherent in the schema. I, however, embrace a key insight of postmodern thought—that the world is a complex place—without following those postmodernists who abandon hope of advancing our understanding. The schema allows us to embrace complexity, and employ a diversity of theory and methods, yet it also gives us a structure on which to hang diverse "bits" of insight. I will not survey relevant grand theories at the outset, but draw on these, as well as mid-range theories and more narrow theories, when these seem to shed light on individual links. I hope to show that all grand theories have more to say about some links than others do. Rather than falsely organizing diverse material around one theory or method—a practice that *must* impose a huge arbitrary constraint on the pursuit and transference of understanding, and give a false sense of completeness by excluding all that does not fit—I will rely on the schema alone. Nor will the style of presentation be arbitrarily constrained: With an open mind, I strive to review competing theories for links that have been the subject of much debate, reprise the dominant view for links that have received less attention, and suggest avenues for research where a link has been largely ignored.

While I strive for open mindedness, I inevitably will not discuss every nuance of every relevant scholarly debate, due to limitations of both space and expertise. I would emphasize that my purpose in this paper is to illustrate the value and validity of the schema. I would hope that a reader who disagrees with my "take" on a particular causal link would nevertheless appre-

ciate the importance of the link itself. That is, whether one accepts my rendition of particular links or not, the important point to be realized is that ignoring these links (in teaching or research) is costly, and must generate an incomplete picture.

The choice of social structure as the focus of this paper has one key advantage. Gaff (1991) has noted the unfortunate *ideological* overtone to recent debates concerning the Liberal Arts. To those on the "right," who bemoan the lack of a coherent unity, I argued in my previous paper that the schema can provide a unifying structure for Liberal Arts curricula (I would also urge a comprehensive survey of methods, types of theory, and philosophical perspectives). To those on the "left" who urge the incorporation of issues of gender, race, and/or class into the core of the curriculum, I will show how such social divisions are causally related—in each direction—to *all* other categories. One or two required courses on gender or race may have little impact if students cannot readily see how the material is related to their other coursework; the schema leaves no doubt as to how matters of race or gender or class affect and are affected by other phenomena. I can think of no better way to show that matters of race and gender both should and can infuse the curriculum. The schema can thus form the basis of a curriculum that simultaneously responds to criticisms from both "left" and "right." It is also, notably, a powerful illustration of the necessity of interdisciplinarity, for the schema cries out the fact that we need to tie together diverse bits of specialized knowledge in order to understand any substantive problem.[2]

There is, however, one key disadvantage to focusing on social structure. This category receives less disaggregation in my schema than almost any other of our major categories. This means that this paper cannot fully illustrate one of the key insights of the schematic approach: the central importance of disaggregation. Much muddled thinking in human science results from vague references to broad categories, such as culture, rather than relevant subsidiary phenomena. I will strive in what follows to refer to the appropriate level of phenomena. That is, there will be occasion to see the importance of disaggregation when discussing phenomena from other categories. With respect to social structure itself, there will be an opportunity to observe how different sorts of social division at times operate in a similar fashion and at times quite differently.

I would hope that the material that follows would also illustrate the following points:

- Causal connections are ubiquitous.

- While there are some commonalities across links, each link is unique.
- The schema helps us to identify linkages that have received little attention (and provides a mechanism by which research on topics which are not "sexy" would not be forgotten).
- The schema can easily cope with the multiple causation, feedback effects, and indirect linkages which characterize the modern world.
- The schema leaves scientific inquiry unconstrained yet provides a structure for integration.
- The schema potentially allows us to share common definitions of phenomena.

I would note that the format of the paper is somewhat unusual. It does not build gradually to a set of conclusions. Rather, it sets out several objectives in this introductory section, and strives to illustrate all of these points simultaneously with a large block of material which is devoted to a discussion of different links.

I will not, of necessity, survey every link. Given the fact that virtually every pair of the hundreds of phenomena in my schema is causally related in some way, such a task is beyond the scope of a single article (but should be a goal of the human science enterprise).[3] I will tend to focus on links that seem to be of the greatest importance, at least to the academic community. But I will also survey some links of lesser importance to highlight the fact that we cannot ignore these if we aspire to a comprehensive understanding. And I will indicate some links that deserve more attention. I will be brief throughout: while the vast bulk of scholarly work emphasizes depth over breadth, this one chooses breadth. Given space limitations, I will often discuss related links together.

There is no objective criterion by which to determine how much space to devote to any particular link. The coverage here reflects my own interest and expertise. Some links undoubtedly *deserve* more space than others, though any two scholars might disagree on which to emphasize. Recall that my purpose here is to give a sense of the possibilities (and generally to provide references for further reading), while leaving scholars free to emphasize the links of their choice. Given this goal, and space constraints, I discuss some links in some detail, but give just a brief taste of others that may be equally as deserving.

It is often useful when discussing one link to refer to another. To facilitate this, I use a simple notation whereby each category is represented by the first letter in the category's name. Thus, C→S signifies a link from Culture to

Social Structure:

- A represents Art,
- E-Economy,
- G-Genetic Predisposition,
- H-Health and Population,
- I-Individual Differences,
- N-Non-Human Environment,
- P-Politics, and
- T-Technology and Science.

Ideally, each element of culture and social structure involved would be indicated, but this would impose a huge cost in terms of notational complexity. Generally, the particular phenomena involved are clear in context.

Identifying Societal Subgroups

There is one final task to perform before proceeding to an examination of causal links. I noted above the importance of *disaggregating* phenomena into their constituent parts in order that causal analysis can be performed at the correct level of aggregation. While scholars of race, gender, and class have come to note many similarities in how these social divisions affect and are affected by other phenomena, differences also exist, and most analysis is performed in terms of particular types of social division. First, I must identify the sorts of social division that collectively comprise *social structure*. All societies are divided in at least two ways: by gender and family.[4] Virtually all are also divided by occupation, and groups of occupations can often be usefully aggregated into classes. Ethnic/racial divisions also characterize most large societies. These four types of subgroup will be our focus here (though strong cases can be made for inclusion of divisions by sexual orientation, religion, age, and even height or weight; see Szostak, 2002).

I note that it can often be difficult in practice to identify to which class, gender, ethnic group, or family type particular individuals belong. Following Books and Prysby (1991), we can speak of three broad ways of identifying group membership: we can identify certain characteristics of a group (such as physiology for gender), we can identify certain shared attitudes of group members (including the simple belief that they, or others, are different), or we can look at interactions among individuals and identify groups when there is much internal and little external interaction. The three methods will often yield conflicting results, as when a man thinks of himself as a woman, a member of the working class strives to behave like a member of the middle

class, or an Italian marries into a Greek family. Even on their own, our three methods can yield ambiguous results: if we identify the upper class with ownership of the means of production, what do we do with workers who own mutual funds or highly paid athletes? But the inevitable blurring of group boundaries does not render meaningless the analysis of social divisions. We can still usefully examine links to and from different types of social division in what follows, while recognizing that in practice group boundaries are fuzzy. We are reminded, though, that simultaneously we are each individuals, members of diverse subgroups, and constituents of a common humanity.

Social divisions need not imply social stratification: one can be proud of one's heritage without assuming ethnic superiority. Humans, though, like to feel proud of their (individual or collective) characteristics, and may be genetically predisposed to be competitive; these characteristics guide us to denigrate other groups (though we may consciously choose not to). Moreover, it may be that human societies have always been hierarchical in nature, and therefore we are genetically *programmed* to respect authority, and thus have a capacity to elevate other groups into a superior position (G→S). When, as is often the case, group divisions are reflected in differences in wealth or power, this reinforces the idea that some groups have more status than others (S→E, P→S). As with differences in power or wealth, attempts are inevitably made to provide a justification—a social ideology—for these differences in status. Thus, *social ideology* also deserves treatment as a constituent phenomenon of *social structure*.

G→S: Genes→Social Structure

I could start with any set of linkages, but will follow the order in which categories were introduced in my previous paper, beginning with our common genetic inheritance. While many fear that exploration of the genetic bases of societal divisions will encourage racism and sexism, I argue both that we should abandon no research agenda out of fear, and that the results of such research are likely to be benign. In what follows, I will sketch some of the key relevant arguments and discuss how benign conclusions can be drawn.

I should emphasize that genetic predispositions are generally embodied in more than one gene (and thus it is a mistake to speak, for example, of a gene for altruism). As well, we have the ability to think about who we are, and thus are not necessarily doomed to follow our genetic predispositions. Note, though, that this ability is itself embodied in our genes.

A common (though debated) assumption in genetic analysis is that our genetic makeup would have evolved over the millennia in which all humans

operated as hunter/gatherers. We might expect, then, that (some of) our genetic predispositions would have been "selected" by the hunter-gatherer environment. If so, it is likely that we are programmed to identify with small groups. Moreover, hunter/gatherers needed to cope with hierarchical societies (G→P). Jackendoff (1992, pp. 77-78) refers to an inherent human understanding of social dominance. In our efforts to simplify our interaction with others, we place other people within convenient social categories (Wenegrat, 1990). Since humans must cooperate, we naturally seek allies. Experiments show that when people are divided randomly into groups, but their individual success is tied to group success, they come to develop negative stereotypes of other groups (Rothbart and Lewis, 1994; Hamilton, Stroessner, and Driscoll, 1994). Clinical psychology tells us of the distress suffered by those who feel that they do not belong, or have been explicitly excluded from group membership; this suggests a strong genetic impulse to seek group membership and conform to group behavior (Wenegrat 1990). Since similar results are found across societies, we can conclude that they are more likely due to our genes than culture. Barkow (1989) goes further and suggests that we were likely selected to exaggerate the prestige of our groups (or seek entry to prestigious groups), in part because prestige enhances mate-selection opportunities. Note that we would thus not want other groups to succeed, even if their success will not directly hurt us.[5]

I should point out that cultural anthropologists long operated from the assumption that our genes placed few limits on human behavior, and that culture thus operated on a *tabula rasa* in affecting individual behavior. While some arguments in this vein are now widely discredited (including Margaret Mead's famous analyses of sexual jealousy – see Wenegrat 1990), and most anthropologists are thus open to a more nuanced understanding of the interaction of genes and culture, arguments for particular genetic predispositions are usually greeted with skepticism.

1. Genes and Race

Since there is no necessary order in which the four types of social division need be discussed, I will privilege no particular type but instead change the order of discussion to suit the flow of my presentation. I start here with ethnicity. Since skin pigmentation is largely determined genetically, and individuals can be distinguished on the basis of skin pigmentation, the question has arisen of whether humanity can be divided into a handful of distinct *races*, and whether these differ from each other genetically in ways other than pigmentation (the alternative being that the idea of *race* is a compo-

nent of *social ideology*, but lacks a scientific basis). But the blacks of New Guinea and Micronesia likely have no greater genetic relation to the blacks of sub-Saharan Africa than to non-black groups. Residents of southern India are very dark, but have largely Caucasian facial features. Everywhere that groups with different pigmentation have been in contact, there has been some mating between the groups. The world is thus characterized by a continuum of skin pigmentation, rather than sharp boundaries.

Still, genes that affect pigmentation may influence other characteristics. But note that only four to ten of the 100,000 genes an individual possesses are thought to determine pigmentation. It could also be that the frequency with which certain non-pigment-related genes appear differs between, say, blacks and Caucasians; in this case racial differences would not be caused by differences in *race* (pigmentation), but would reflect correlated differences in evolutionary experience across groups. There may be slight racial differences in average height and certain (average) athletic abilities (although these are swamped by within-group differences; and we must always worry that such differences reflect differences in, say, diet, or certain cultural attitudes, rather than genes). And there are certainly differences in the prevalence of particular genetic diseases, such as sickle-cell anemia (see below).

What about intelligence? Herrnstein and Murray (1994) have noted that Asians score slightly better than whites on IQ tests, and blacks well below (they note that within-group differences are even greater). Most scholars have been highly critical of this work, arguing that IQ is an imperfect measure of intelligence. The fact that IQ scores among both blacks and whites have been increasing by about one point per decade suggests that better education, or nutrition (for both mother and baby), or test administration can affect test scores. Since blacks in the United States receive on the average poorer quality schooling and nutrition than whites (and are more likely to come from broken homes), and since IQ tests may refer to objects/events with which white children are more familiar, black IQ scores likely underestimate black inherent intelligence. Moreover, black children may be less motivated to perform well on tests they view as alien or oppressive (Cohen, 1998). Critics note that in their early days, IQ test scores were used to argue that immigrants from eastern and southern Europe were inferior (Bem, 1993). A final point: the fact that within-group differences swamp between-group differences means that we would be misguided to judge individuals in terms of their race, *even if between-group differences exist.*

Scientists have not identified particular genes associated with intelli-

gence (yet) and thus we cannot establish whether the frequency of such genes (and there are likely many) differs by group. Evolutionary psychology provides no reason to suspect large differences. All races spent millennia as hunter/gatherers in challenging environments (perhaps different challenges favored selection for different types of intelligence, but races as commonly conceived would each have faced a diversity of environments). There has likely been enough contact across groups that fitness-enhancing genes would have had a chance to spread. The genetic differences we are aware of can generally be attributed to differences in environment. Differences in skin pigmentation largely (albeit imperfectly) reflect differences in climate. The shape of human ears, and thus their ability to absorb/dispel heat, may also vary with climate. The sickle-cell gene provides protection against malaria, and thus would have been selected *for* in the sub-Saharan environment. Groups that have lived at high altitudes for a very long time develop larger lungs.

It is my judgment of the scholarly literature that while our genes are an important determinant of *individual* behavior, they play virtually no role in generating group differences. Ironically, if our genes *do* encourage us to disparage other groups, they may encourage the development of racist ideas with no scientific basis. But my main point here is that these arguments can and should be part of courses on social structure.

2. Genes and Class

Classes do not exhibit the same obvious physiological differences that races seem to (though in societies in which the poor are undernourished, their short and frail stature may be falsely attributed to genes; S→H→S). Nevertheless, since people tend to mate with others from the same class, on average, genetic differences across classes might emerge, especially if it is thought that classes are/were sorted in terms of certain abilities. While much of the reaction to Herrnstein and Murray (1994) focused on the racial aspect of their argument, their arguments on the basis of class are perhaps even more troubling. Their analysis suggests that whites with an IQ in the bottom five percent are fifteen times more likely to be poor than whites in the top five percent. They argue that class differences primarily reflect genetic differences, and these are inherited due to within-class marriage. If true, the political implications are profound—attempts to help the poor to better themselves must fail. Concern about mobility would be misplaced—the poor would be poor because of limited ability, not societal barriers. One might even argue that income differentials based on genes are fairer

than differences based on environment or opportunity. However, the same arguments we recounted in the last section can be used with respect to class differences in IQ score. That is, IQ tests simply cannot distinguish genetic factors from cultural or dietary influences. In terms of heritability, the fact that various sorts of ability contribute to success in our complex world, and that our genetic inheritance from our parents depends on a complex interaction of gene pairs, should serve to lessen our fears. The offspring of *unable* parents may betray abilities which neither possessed (G→I).

3. Genes and Gender

To what extent, if any, can observed gender differences—beyond the obvious physiological differences—be attributed to genes? Feminist scholars are divided on whether men and women are essentially the same or different.[6] Some people feel that research on genetic differences is misguided, or even morally corrupt. Others suggest that we will not know the true nature of either men or women until we have completely erased the power imbalance that exists between genders. One oft-discussed difference is the fact that girls on average do less well than boys in advanced math classes. We cannot know at this point whether this reflects genetic differences, whether many girls are discouraged from displays of mathematical ability, or both. More generally any observed difference in male versus female performance might be attributed to genes, environment, or both.[7] Surveys show that both men and women on average view men as more aggressive, independent, competent, and ambitious, while women are more thoughtful, tactful, sensitive, and emotional. It is noteworthy that surveys of how people see themselves show insignificant gender differences, except in a few areas: aggression, spatial, mathematical, and verbal ability.[8] One can sketch plausible arguments for why these latter gender differences might have been selected in environments where men tended to specialize in hunting and women in gathering.

4. Genes and Family

In what ways might our genes encourage or constrain the types of families observed in human societies? Humans have a far longer childhood in which they are dependent on the care of others than any other species. Our continuation as a species thus depends on adult care of the young. Virtually all societies expect a parental pair to play the primary role in childrearing. This may well reflect parental programming to care for their children. Since only children who are cared for can survive, we could expect selection for genes that predisposed individuals to care for *their* young (where "care for" means not

only ensuring their survival as children, but also preparing them to support their own children as adults). Note that there is no genetic transmission, and thus selection, when individuals care for unrelated children. The exceptions—the matrilineal societies of the West Indies where men play a limited role in childrearing, the Highlands New Guinea societies in which men live apart from women and children, and various polygamous societies—may reflect male concerns over paternity (which might also have been selected: the Nayar of India in the eighteenth century, for example, expected men to care for their sister's children).

A point to emphasize here is that humans have diverse drives, of which caring for children is only (at best) one. For some individuals, the search for food or sex or status may overwhelm any urge to care for children. Such exceptions do not prove that there is no genetic predisposition toward caring for one's children, but rather that we are each guided by a complex set of genetic and social influences.

Some societies expect more of aunts, uncles, and grandparents than others. Note that we could expect selection for genes that disposed us to care for nephews, nieces, and cousins. Extended family systems may thus also build on genetic programming. Remember, though, that aunts, uncles, and grandparents have lesser genetic similarity to a child than parents; this may explain, at least in part, why parents tend to carry the greatest responsibility for their children even in extended families.

Biologists have long been comfortable with arguments for selection at the level of individuals or kin groups, as above. A minority has long argued for selection at the level of the group: since groups compete, we might expect selection for qualities which enhanced group survival. There may be a genetic base for a general predisposition to care for all children in one's group (a predisposition which some groups build upon culturally more than others). The problem with group selection is that we would expect selection against such genes at the individual level (as those who care for others' children are less likely to pass on their genes). As with most arguments for altruistic genetic predispositions, one must argue that the gene could spread through the group despite some negative individual-level selection.

I→S: Individual Differences→Social Structure

Along with our common genetic inheritance, we each possess a unique set of personality characteristics and beliefs, determined in turn by both our environment and our differential inheritance from a common gene pool. Though little appreciated, the simple fact that individuals differ from each other has

profound implications for group divisions.

As long as social structure is associated with real or perceived differences in status, we can expect at least some individuals to rebel (Merton, 1996). These will usually be those of low status, but a significant number of high status individuals are historically observed to chafe at status differentials. For the low status, rebellion could involve attempts to *rise* into a different group or efforts to reduce or eliminate status differentials. Merton feels that the latter sort of action provides a constant pressure for change in social structure. Societal change only occurs due to the actions of such change agents (I→C). Yet, common (often implicit) assumptions that groups move in unison leave no place for change agents.

What characteristics will encourage an individual to seek change, and in what direction? In the case of gender, changing groups has historically been virtually precluded. Different personality attributes will encourage some men and women to challenge accepted gender roles. Along with the various attributes associated with leadership and creativity (I→P,C), we might expect that men with (supposedly) female personality characteristics and women with (supposedly) male characteristics would be most likely to agitate against existing gender roles in their society.

In terms of family, we can note that various personality attributes will contribute to the probability of one-parent families, childless families, and parents living with adult children. The choices made will of course be severely constrained by the cultural, economic, and political milieu in which one operates (C,E,P→S).

In the case of class and occupation, individual characteristics influence group membership as well as attitudes toward groups. If there is mobility, those with heightened ambition or ability may rise above their parents' status (while others fall). Even in North America, though, the vast majority of children end up in the class of their parents. While some would attribute this to inherited differences in ability, most scholars would point to differences in attitudes or opportunities.

In the case of ethnicity, we are not free to choose our identity. What does one do if one is emotional, but finds oneself a member of an ethnic group that prides itself on self-control? One cannot simply join a more emotional group (except perhaps through marriage). That leaves two unpalatable options: suppressing one's innate personality or being viewed as a bit of an outcast. Such individuals, unless they come to disdain the attribute(s) they struggle to repress, are more likely to engage in cross-group contact and try to minimize the importance of ethnic boundaries.

While most I→S links have received little scholarly attention, there has been much effort devoted to the psychological bases of racism. I suggested above that we all possess genetic programming to identify with small groups. It is likely that we also strive to develop schema systems which simplify the world in which we live (I→S; see Szostak, 2002). In addition to these genetic factors, certain individual characteristics encourage racism. Authoritarian personalities, not surprisingly, have been shown to be more prone to racist views. So also are those with low self-efficacy: by blaming the misfortunes they suffer in life on black immigrants or a worldwide Jewish conspiracy, they imagine that there is a way for them to overcome misfortune. In general, those who are most frustrated with their own lives are the most likely to develop negative attitudes toward other groups (Monteith, Zuwerink, and Devine, 1994).

E→S: Economy→Social Structure

It will come as no surprise to most observers that the economic circumstances of a society exert an important influence on its societal divisions. However, the diverse ways in which the economy affects the strength of, and attitudes toward, social divisions is often not fully appreciated.

1. Gender

In all human societies, men and women perform different economic functions. Women inevitably specialize in childbearing and breastfeeding; a tendency to perform other home-oriented tasks may follow from this. Men's greater physical strength predisposes them to certain tasks—hunting, carrying. Yet even in hunter-gatherer societies, a vast range of tasks could be performed by either gender; different societies allocated planting, house building, and small game hunting to men or women, but rarely both. In the modern world, very few jobs have physical requirements that dictate performance by one gender (though genetic differences may give slight gender advantages, on average, for various tasks). Nevertheless, occupational segregation survives, though its source must now be seen as primarily cultural (C→S). Still, economic developments can have important effects on gender relations. The invention of the typewriter was gender neutral—men and women have very similar typing speeds on average—but the demand for clerical staff that followed in its wake was much greater than the available supply of male, low-wage labor. It thus encouraged a trend toward increased female labor-force participation (this tendency might have been held in check by culture or politics). The enhanced role of women in postwar societies

reflects both economic and cultural changes; new opportunities and feminism likely reinforced each other. As women gain a sizeable degree of economic independence, though, both the power relations and cultural attitudes inevitably change. Such a process need not always move in the direction of enhancing women's role; since gathering contributed more to the diet of hunter-gatherers than hunting, women may well have had a higher status in those societies than they would play in most agricultural societies (C,T,P→S).

2. Class and Occupation

As the labor historian E. P. Thompson well knew, class is not just an economic phenomenon, but starts there (Blau, 1993). If not for differences in income and/or occupation, classes could not exist. The potential for class divisions in a society, and the form those can take, will then depend on occupational structure and income distribution. The occupational structure of a society will in turn reflect (and influence; S→E) the mix of goods and services being produced. But classes must be defined socially: people must have a sense of class identity that exerts some influence on their behavior (see Blau, 1992).

The blurring of class boundaries in the modern Western world impresses many scholars. While agricultural societies were more stratified than hunter-gatherers, and Marx prophesied a new set of class relations for industrial economies, in fact, industrialization and the rise of a service economy have lessened class distinctions (Sanderson, 1995). There is a certain irony here. Division of labor in society—landlords and peasants, merchants and workers—is essential to the existence of classes. In societies in which hundreds of distinct occupations can be identified, and where the relative status to be accorded many pairs of these would be disputed,[9] we not only end up with a typology of several classes, but the boundaries between these become blurred. Clear-cut classes have thus given way to continuous and overlapping occupational strata.

Sociologists have long speculated that division of labor also encouraged a modern cultural emphasis on individuality. We tend to value the unique contributions we each make, rather than viewing individuals as relatively homogenous elements of some collective. Naturally, this further weakens the importance of class. Still, as long as we define individuals primarily by occupation, some sense of class may survive. This will be exacerbated to the extent that the less well off feel jealousy toward the consumption opportunities of the well off (C→S).[10]

Occupational mobility, both of individuals and across generations, further

reduces class identity. If we eliminate both cultural and institutional (especially educational) barriers to mobility (C, P→S), we will lessen the importance of class. There are also economic causes of increased mobility. The pace of economic transformation is the most obvious of these. The creation of new occupations naturally reduces the tendency of one generation to inherit their parents' position. So also does the shifting importance of various occupations. In particular, the increased role of skilled labor over the past century ensured that many workers experienced upward mobility (Blau, 1992).

Over the last few years, income inequality has been increasing in most Western countries (E→E). Unskilled workers especially have suffered. If this trend continues, we could expect an increased sense of class identity and perhaps class struggle (Berberoglu, 1994). If the upward mobility of past decades, in which most new jobs required skills, is replaced by downward mobility associated with unskilled jobs (and I emphasize the 'if'), class divisions could harden (Blau, 1992).

3. Families

The family has historically been the central locus of both production and consumption in society.[11] It is thus not surprising that the economic circumstances of a society will affect the form of families within it. If nuclear families faced great fluctuations in output from year to year (generally through harvest failure), we will likely see the extended family form, so that the unfortunate in any year can rely on distant kin for support. Societies in which income is distributed unequally are prone to polygamy: wealthy males take more than one mate (though monogamy may be favored if the elite fear the anger of *mateless* males; Wright 1994). Closer to home, we can expect to observe more one-parent families in societies in which unskilled men have difficulty finding long-term employment.

4. Economic Bases of Racism

Ethnic stereotypes have existed as long as different groups have been in contact. The historical record is virtually silent before the modern era, however, with respect to ideas of racial superiority. For many scholars, the key transition was the development by European traders of a plantation economy dependent upon slaves. Although slaves were used in many previous societies, there was rarely/never as clear a racial distinction between slaveholder and slave. Though slavery has virtually vanished in Western nations, the existence of both income inequality and economic uncertainty are highly conducive to racist thought. Unskilled white workers (especially) have a powerful

financial incentive to encourage discrimination against blacks.[12] If they have less reason to fear losing or not getting a good job, they are likely to be less virulent in their racial attitudes. While some scholars (Leiman, 1993) argue that capitalism is the primary cause of racism, it is clear that the socialist countries of Eastern Europe only managed, at best, to suppress ethnic hostility. To the extent that socialist countries succeeded in lessening both income inequality and fear of unemployment, they may well have reduced ethnic conflict. The declining incomes and great uncertainty that characterized political transition brought ethnic hostility forward.

A competitive environment in which incomes are unequal also encourages jealousy toward successful groups. While anti-Semitism was primarily religiously motivated in the medieval period, and received a powerful boost from ethnic nationalism in recent centuries, much modern antipathy toward Jews can be traced to the relative economic success of group members. Hostility to successful mercantile minorities is observed in many places in the world: Armenians in the Middle East and Chinese and Indians in Southeast Asia have suffered in this way.

A→S: Art→Social Structure

The major contention of this paper is that a full understanding of social structure (and by extension, any other category) comes only from the study of links to and from all other categories. The influence which art exerts on social structure provides powerful support for this contention.

1. Class and Status

The possession of artworks is one of the most important symbols of high status in virtually all societies (Layton, 1991). Moreover, art can legitimize the social order. Portraits of the aristocracy generally imbue them with qualities of judgment, thoughtfulness, and honor appropriate to a ruling class. Feldman (1992) hails the democratizing influence of film. All classes can afford to watch, and there are no expensive seats or boxes in cinemas (nor can actors play to the boxes). The fact that all classes get to observe other classes both on film and in the cinema serves to decrease the differences between classes and the barriers to mobility.

2. Ethnicity

Ethnic groups often include famous works of art as a key element in defining what makes them special. These works will generally contain cultural elements

that speak directly to that group; the aesthetic appeal of the works serves to increase their power. Groups often also develop preferences for certain art styles. This is especially noteworthy in music and dance.

3. Gender

Historically, most art has been produced by men. Moreover, the vast majority of art buyers have been men. Simone de Beauvoir complained that women were therefore portrayed in a limited number of roles: virgin, whore, witch (Bem 1993). This limited view of women was not only harmful to women but also interfered with males' ability to appreciate women as complex beings (see Denby, 1996). Duncan (1993) notes that in paintings of female nudes, the focus is always on the bodies rather than on faces or personality. Male authors have been as guilty as male painters of giving women only a supporting and submissive role. While historically, this may have been a reflection of the world they lived in, it is nevertheless true that painting and literature have served to perpetuate a very narrow definition of women's role.

P→S: Politics→Social Structure

The ubiquity of social divisions may blind us to their dependence on unique characteristics of different societies. The forms of governance and institutional structure of a society shape both the form and strength of societal divisions.

1. Institutions

Political leaders can shape institutions that benefit some groups over others.[13] If political leaders hand out favors to members of their group, it increases the incentive of group members to identify with the group (Goldscheider, 1995). If blacks are banned from various jobs or neighborhoods, then their chances for economic advancement are crippled. The mere absence of laws that would prevent these sorts of discrimination can be seen as a political impediment to racial equality. And if the police and/or courts discriminate in the application of criminal law, minorities will suffer injustice and come to view themselves as outsiders, while simultaneously the rest of society views them as unwilling to respect the rules of society. Although few modern societies have official class or occupation-based laws, it was historically common to restrict certain occupations to members of particular classes. In the area of gender, women's rights to own property, vote, and pursue advanced education have only been widely recognized in the last century.

Institutions encompass much more than a set of laws, however. Western

nations, infused with an ideal of equality of opportunity, have established public education systems. As education has come to screen people for desirable occupations, equal access has increased in importance. Frequent media commentary on a crisis in American inner-city schools suggests that this ideal is being less than perfectly achieved. Welfare systems, which play a valuable role in aiding the least fortunate, can inadvertently serve to exacerbate class, racial, and gender divisions by encouraging the breakup of families (if single mothers get preferred access to welfare), requiring liquidation of assets (if wealth holdings limit access to welfare) that might otherwise be applied to education or home ownership (see Oliver and Shapiro, 1995), or discouraging job search.[14]

2. Democracy

How does democracy in particular affect social divisions? Democracy has the egalitarian virtue of providing each adult with one vote. This should serve to limit class-based discrimination relative to autocracies in which the rulers maintain the position of their class. We must worry, though, about the degree to which economic elites, through lobbying, donations, and outright bribes, might skew political decision making toward serving their interests (E→P). Moreover, since most democracies follow a strict ideal of majority rule (some strive for consensus), minority groups must inevitably worry that a political majority will pursue policies not in their interest. Countries often enshrine minority protection in their constitutions to alleviate such fears.

The degree to which political parties are associated with particular groups differs across country and time. In recent decades, British politics has come to resemble North American variants in the sense that class-based voting differences are small. The Democratic Party in the United States and the Liberal Party of Canada have long had a great appeal among ethnic minorities, though this connection appears to be waning. In countries where group-based political affiliations remain strong, the democratic process can serve to exacerbate group tensions. Few would doubt, for example, that democracy has inflamed both caste and ethnic hostility in India.

Women are generally a majority of voters in world democracies, but comprise a small minority of elected officials. Some would question whether female suffrage has played a major role in enhancing legal protection for women (it is, at least, an important symbol). Often, women and men vote much the same way, in part, as families tend to vote in unison (with suspicions that wives often follow their husband's advice). In recent American elections, though, women's preferences have differed from men's by as much as ten

percent. While it is likely that this does lead to some women-oriented policies, we must remember that women often support policies that limit women's opportunities. Mothers in sub-Saharan Africa often favor circumcision for their daughters (Barkow, 1989).

3. Institutions→Family

The shape of families is greatly influenced by a society's institutional structure. Is polygamy legal? Virtually all societies have some form of marriage, so how easy is divorce? In the case of divorce, who gets custody of any children? Do grandparents have any rights? Does inheritance occur through fathers, mothers, or brothers, or is it discretionary? Can women inherit? Are there social security systems, or are children legally responsible for their aging parents? As the example of social security suggests, institutions that are designed with other policy goals in mind can have a huge impact on the family. Tax rules in some countries provide significant deductions for spouses. Institutions (P→S1) that serve to enhance the economic autonomy of women may encourage an increase in divorce rates. Welfare aid to single parents can encourage parental separation. Alternatively, enforcement of mandated child-support payments can encourage fathers to stay with their families.

C→S: Culture→Social Structure

For many sociologists, the unit of social structure is the *role*. The question they ask is how our gender, ethnicity, class, and occupation constrain both our behavior and the way others view us. While cognizant that genes play a part in at least gender differences, the natural focus of such scholars is on how cultural attitudes define roles. In Szostak (2002), I devote an entire chapter to links between culture and social structure (with a particularly detailed discussion of the cultural bases of racism). Given space limitations, I will not reproduce that discussion here.

T→S: Technology and Science→Social Structure

One advantage of a link-by-link approach is that we can identify causal linkages that are clearly important but have received little or no systematic scholarly attention. While social scientists have analysed science and technology in some depth, they have rarely explored links between these and social structure.

1. Innovation

There is no general literature on technology's effects upon social structure. There are, however, numerous examples in the literature where such links have been drawn. The birth control pill is credited with causing a revolution in attitudes toward sex in the 1960s (Smith, 1994). Mechanization of agricultural labor may have caused a decreased acceptance of slavery in classical Greece and Rome (Lemonnier, 1992). Labor-saving household appliances contributed to a more favorable attitude toward women working outside the home in the post-war era (Blau, 1993). While these examples are likely more complicated than described here, we can readily see how technology could affect social structure. Technology can create opportunities for change: Greeks who viewed slavery as unavoidable changed their attitudes as an alternative emerged. Technology also creates pressure for social change: the birth control pill not only allowed some to practice a different lifestyle but by so doing forced others to question long-accepted values.

Science can also have an effect on social structure. The existing evidence suggests that genetic differences between races, and between genders—except for the obvious physiological differences—are small relative to the differences within race and gender. If these results are strengthened by further research, we could expect a weakening of racist and sexist attitudes in society at large. And a greater understanding of the effects of different family forms on children should shape societal attitudes in this regard as well.

2. Technology as Group Identity

If there are ethnic or gender or class differences in ways of doing certain things (that is, technology), these will become group identifiers ("that's the way we do things around here") and barriers to group interaction. One ethnic group may build barns differently from another, and the upper class may pour tea differently. The most harmful barriers occur when groups deliberately try to keep their practices secret. The best way to keep women from entering male occupations is to bar them from medical school or engineering school (see Franklin, 1990).

H→S: Health and Population→Social Structure

The links between health and population and social structure are almost as under-appreciated as those between technology and science. Yet, differential population growth rates in particular have often served to exacerbate social tensions.

Differential population growth rates affect the size and thus, the relationship between societal groups. In terms of gender, biology bequeaths us only the slightest imbalance. In terms of class, whereas in many historical societies the rich had more children (this is still the case for rich men where polygamy is practised), and despite modern Western fears (e.g., in Herrnstein and Murray, 1994) that the poor "over breed," there is in fact very little difference in crude birthrates across income groups (E→H). It is thus with respect to ethnic groups that differential rates of population growth are most important (Goldscheider, 1995). Often, these differences have political consequences (H→P). Civil strife in Lebanon was in part caused by faster growth in the Muslim population, and a resulting desire for a recalibration of political power. In any society, but most obviously a democracy, the relative size of a group will be an important determinant of its power.

Size will also affect how others perceive a group. A small group may be viewed as a curiosity, a large group as a threat. Conversely, a society may be able to ignore mistreatment of a small minority, but will fear the wrath of a large group. Large groups may be able to gain special schools and/or hospitals, while smaller groups must seek a niche within institutions with a wider appeal. The size of a group—both in relative and absolute senses—also has a major impact on how quickly it becomes integrated into a wider society (Goldscheider, 1995). In particular, rates of marriage "out of group" vary inversely with the size of groups.

N→S: Non-Human Environment→Social Structure

I close our discussion of links to social structure, with my tenth category, the non-human environment. These links have also received scant attention in the literature. I emphasize one element of this category, urbanization.

It was once thought that urbanization would induce individuals to join large organizations while foregoing smaller group ties. The human need for affection has ensured that individuals strive to belong to smaller groupings (Burk, 1991). Still there can be little doubt that urbanization facilitates class action, and very likely a stronger sense of class identity. The division of urban space into neighborhoods based on income (because houses are all in the same price range) must serve to enhance this sense of identity. North American cities were characterized by ethnic neighborhoods. Yet, the borders of these have proven very porous over the generations. In the case of black groups, and to a lesser extent various Hispanic groups, for whom a combination of poverty and discrimination have encouraged a concentration in particular neighborhoods, a much greater sense of identity and *differentness* has

developed.

Women tend to be distributed much as men across the urban landscape (except to the extent that single mothers form new urban ghettoes). Yet women can still suffer to the extent they find it difficult or impossible to enter certain places. In the extreme, women in certain societies are barred from activity outside the home. To the extent that important decisions or conversations happen in exclusively male clubs, saunas, or washrooms, women will be at a disadvantage. The presence of many urban locales frequented exclusively by one gender must serve to enhance gender identity. The fact that women have greater cause to fear urban spaces, especially at night, drives further wedges between male and female experience (Rose, 1993).

S→S: Social Structure→Social Structure

As I emphasized in my previous paper, the ten categories themselves are rarely the subject of causal analysis; causal links usually occur at lower levels of aggregation. My use of these ten categories as an organizing device in this paper may have the unfortunate side effect of diverting attention both from the importance of disaggregation and of within-category linkages. The present section is valuable both for illustrating the importance of the particular linkages among the different types of social division, and by extension, of within-category links more broadly.

Membership in one type of social group often has implications for one's membership in others. Women are more likely to enter certain occupations. Blacks are more likely to be working class. Marriages everywhere tend to occur within class and ethnicity. And group membership influences attitudes toward other groups: women are less racist, but more conscious of class-based status differentials, while attitudes toward gender differ markedly by ethnicity (see Blau 1992).

1. Race and Class

I discuss below (S→P) the importance of class-consciousness. If workers are divided by ethnic loyalties, the working class may be less united and effective. Gilroy (1991) notes, though, that if visible minorities dominate the underclass, they may well be able to mount a greater attack on the status quo (see also Dogan and Pelassy, 1990). Once opposition is mounted, other members of the class may join in; Gilroy argues that many British riots viewed as racial were in fact motivated more based on class and that most rioters were non-black. There is a feedback effect from class to ethnicity. The fact that most

American blacks are members of the working class or *underclass* means that all blacks suffer in terms of status relative to whites.

2. Networks

One's occupational success depends on both ability and opportunity. While economists have tended to emphasize the first, economic sociologists have paid more attention to the latter. An individual needs to be aware of (employment or business) opportunities, and know how to take advantage of them. These will depend crucially on "who you know," and how well. And people will be more likely to hire you, do business with you, or loan you money if some mutual acquaintance recommends you. Within-firm networks allow individuals to protect their jobs and angle for promotion. Firms learn cost-reducing strategies from other firms through personal contacts (S→E). In this way, they also establish reputations. Contacts with politicians and government bureaucrats shape regulations (see Powell and Smith-Doerr, 1994; E→P).

Why would someone who has a very good network wish to associate with someone who has few useful contacts? As Foa's (1993) "resource theory" would lead us to expect, most network ties are reciprocal. Some exceptions occur, where information is traded for love or money or groveling, but most contacts occur between those who can benefit each other in the same way ($G,I \rightarrow I_R$). This tendency to forge contacts with others who are equally well connected can serve to reinforce social divisions, while ensuring that economic success (and thus class) is distributed unevenly by ethnicity and gender. A child of the upper class will be unlikely to see much advantage in networking with a child of the working class (were they to come in contact). Likewise, as long as women are less well connected than men, they will find it difficult to get access to key male networks. And if some ethnic groups are economically dominant, it may be hard for outsiders to gain access to their networks. Note, though, that diversity is a key characteristic of successful networks. The greatest business opportunities come from putting diverse tidbits of information together. If all of your contacts are involved in the same line of business, you will hear the same tidbit over and over. Moreover, if all of your contacts are tightly linked to each other, other members of your network will seize any good ideas that do emerge. White upper-class males may thus find it advantageous to have some contacts that are women, minorities, and/or poor.

A special note may be made of what are called "ethnic economies." Light and Karageorgis (1994) argue that employers are much more likely to hire

employees of similar ethnicity. Some of the hostility toward successful ethnic groups—Jews, Armenians, and Korean storeowners in American inner cities—reflects a perception of ethnic hiring preferences. Ethnic-based employment was of greater importance in the past when firm owners had less legal recourse against dishonest employees; it is easier to trust those from the same background, especially if personal ties are involved. To the extent that ethnic firms are important, then the success of ethnic minorities will depend crucially on ethnic entrepreneurship. If potential black entrepreneurs face difficulty, say, in getting bank loans, then higher black unemployment rates will result.[15] There are hopeful signs in some American inner cities that black (and other) employers are starting to set up businesses that will take advantage of the large labor pool. Blacks with contacts both locally and in the wider business community can seize opportunities here (S→E1).

S→G: Social Structure→Genes

I follow the same order as above in reviewing the influence of social structure on other categories. With respect to genes, we should note that the sluggish pace of genetic evolution means that causal links to genes from other phenomena are often weak or non-existent at the human scale. For the purposes of the schema, this is the major exception to a general rule that every phenomenon exerts some influence on every other.

There is too much social mobility for class divisions themselves to have induced large class-based genetic differences (the arguments discussed in G→S2 argued for the most part for classes being determined by genetic differences rather than the reverse). Nevertheless, there may be hormonal differences. To the extent that physical strength and violence are more important in the working class, this could induce an earlier peak in testosterone production among males. This would in turn reinforce aggressive tendencies, encourage young men to focus on sex rather than education and career planning, and affect attitudes toward sexuality. The size and indeed existence of any of these links is far from established. We have also argued (G→S1) that there appear to be only minute genetic differences across ethnic groups. An exception to this rule can occur in very small societies where inbreeding encourages the matching of recessive genes with deleterious consequences.

S→I: Social Structure→Individual Differences

On meeting a stranger, we are first likely to notice their gender. Occupation, family ties, and ethnicity are likely to be among the next of their characteristics we learn. It should hardly be surprising, then, that our membership in various

social groups forms a key element in our sense of personal identity (see Smith and Bond, 1993, chap. 5). A problem arises if our personalities differ from the expectations that we share with the rest of society as to how members of our groups should behave. Much of the trauma associated with adolescence likely stems from the need to establish one's identity in social terms. Finding an occupation is an obvious source of stress (and failing to do so can destroy self-esteem). So too is gaining mastery of gender relations. One must also come to grips with the family and ethnicity one was born to, and set the stage for future family formation.

Expectations of some groups may present particular difficulties. Simone de Beauvoir coined the concept of *the other* to reflect the fact that groups with power and status naturally define their behavior as normal, and thus implicitly or explicitly render others abnormal (Bem 1993). All other groups face a choice between mimicking the high-status group and stressing the value of their distinctiveness, and all tend to do some of each. In areas in which genetic differences matter, such as breastfeeding, women have no choice but to argue for the normalcy of their behavior.

If there is a strong correlation in membership across social groups—e.g., if all Italian males become barbers, get married, and have ten children—then the chances of people being able to find a social niche in which they can "be themselves" is small. On the other hand,crosscutting group loyalties in modern society may enhance the pursuit of individualism. Yet, there are dangers. One is societal: social cohesion might suffer if individualism is pushed too far. The other is personal: many would be unable to achieve a satisfactory definition of self in the absence of clear social guidelines.

Those with status (and power) have greater self-esteem. Those who rise from one class to another may be especially confident and proud. Those who abuse their position may feel guilty. Decreases in status can trigger fear, anger, or shame (see Kemper, 1993). Plutchik (1993) argues that dealing with hierarchy is one of our fundamental psychological challenges; success yields dominance, self-confidence, and assertiveness, while failure yields submissiveness. He argues that much psychopathology reflects the hierarchical nature of families. Maintenance of self-esteem may be difficult among those of low status: they can complain about the inequities of the system, but their identity is often tied up with their place in the system. From a psychological standpoint, a society which appreciated each individual for the unique contribution they could make would be superior to one which tends to attach status to success in a very few areas.

1. Gender Roles

Relationships between men and women must inevitably suffer if both are forced into uncomfortable roles. Sexual intercourse is one obvious area in which cultural expectations of men as seducers and women as passive decrease everyone's pleasure and psychological fulfillment (not to mention encouraging sub-optimal choices of partners).[16] It is important that both men and women not feel culturally constrained from discussing their problems and that they not just turn to advice from members of their own gender (see Duck, 1993). Note, though, that if there are significant gender differences—if, say, men and women have different views of intimacy—knowledge of these differences would aid relationships. Note also that such differences would only be on average, and thus gender roles that reflected genetic differences across genders would still create difficulties for non-average men and women.

2. Occupational Diversity and Personality

The first question asked when strangers meet is usually about occupation. What better guide can there be to how a person is likely to behave? The diversity of occupations in modern society is a boon to the extent that it allows people to choose a life congruent with their personality. Nevertheless, if occupations require a very narrow behavior pattern such that individuals are forced to suppress some parts of their personality, then this must inevitably detract from personal happiness and mental health. Hothschild (1983) has detailed how flight attendants are trained to repress anger and bill collectors to repress sympathy. Such occupational traits are often carried into our non-work lives. Sadly, this is one of those causal links that appears obvious but has been little studied.

Our work experience changes us, sometimes for the better. Shy people overcome their shyness when faced with class or courtroom. Performance of a complex task instills confidence. Alternatively, boring jobs encourage a lack of confidence and perhaps a compulsive focus on details. Jobs with authority encourage the development of authoritarian personalities, while an authoritarian boss reduces one's sense of self-efficacy. Our jobs are the main venue in which most of us seek self-worth and recognition; our experience at work thus shapes our view of self (Fukuyama, 1995). We must be wary of assuming that the best people get the best jobs if the job in fact shapes the occupant.

What of the unemployed? Many studies have shown that lengthy periods of unemployment lower self-esteem, cause depression and anxiety, destroy personal relationships, induce a feeling of helplessness, and cause decreases

in basic skills). The unemployed are also robbed of various psychological benefits associated with work: a time structure to the day, contacts outside the family, occupational identity, and activity.

3. Families

What effect does the presence of grandparents, aunts, and uncles in extended families have on children? Intuitively, we might expect that children would benefit from a diversity of role models and sources of affection. However, children's (and their parents') power relations with related adults who have a lesser genetic investment in them may have deleterious effects.

What exactly is the impact on children of the absence of a father from the home? As noted (G→S4), virtually all human societies expect both parents to participate in childrearing. Some would argue that often men served a primarily economic role, and that with rising incomes, women may be less reliant on such financial support. Others would argue that a male role model is invaluable in helping children—especially boys—come to grips with gender roles (however misguided these may be). Moreover, single mothers will generally not be able to spend as much time with children as could two parents. Certainly, empirical studies suggest that children of one-parent families do less well in school, are more likely to have trouble with police, are more prone to teenage pregnancy or drug addiction, and suffer more emotional and health problems (see McLanahan and Sandefur, 1994). These problems appear to be most severe when parents continue fighting, the father ceases to play an active role, or there is severe financial hardship. We must emphasize, as always, that these statistics deal with averages. Some single-parent children prosper, just as some children of fractious two-parent families suffer. Many would argue that better financial support of single mothers would close the gap in children's success (though others would worry that this encourages more single motherhood). Others note that up to a third of divorced couples regret their decision, with concern over childcare a major cause for regret, and urge more counseling of those considering divorce. Recently, many have urged that divorced fathers be both encouraged and facilitated in frequent interaction with children.

It has become increasingly common for both parents to work outside the home. Again, there are concerns that children suffer from decreased time with parents (and a skepticism that nannies or daycare workers, with no genetic investment in the child, will fully compensate). The child will benefit, though, from increased financial resources. They may also benefit from a broader perspective on female gender roles (Golombok and Fivush, 1984; Blau, 1993).

Women working outside the home also lessen the degree of financial pain suffered by children in the case of divorce (though it likely also increases the probability of divorce). It may also encourage men to be less authoritarian (and abusive) and more nurturing (Wenegrat, 1990).

S→E: Social Structure→Economy

While the economic influences on social structure are widely appreciated, the influences of social structure on the economy have only been appreciated by isolated groups of scholars. We can thus easily underestimate the role of social structure in human society more broadly.

1. Institutions

Economists generally focus on the economy-wide effects of institutions. Knight (1992) suggests that it is better to view institutions as the attempt of one group to constrain the actions of others. Sociologists have tended to assume that institutions reflect the interests of only the powerful: international trade rules must serve the rich countries, financial market regulations must cater to the big banks, and labor markets will be inherently discriminatory; disadvantaged groups must have recourse to unions and political activism (Smith, 1992). But once we recognize that there is conflict in society, we must at least be open to the possibility that the powerful are forced to compromise on the form institutions take.

Mancur Olson (e.g., 1982) has long pushed the idea that societies characterized by institutions that serve the national interest will fare better economically than those where they serve only the upper class. Over time, though, Olson is pessimistic that encompassing institutions will survive against the constant temptation of those who can exert power to have things their way. He argued that post-war Germany and Japan prospered precisely because the war destroyed elite institutions. Their success, too, he argues, cannot last forever (see also Powelson, 1994).

2. Families and Saving

As the location of most consumption and many production activities, families necessarily exert a great influence on the economy. One of the most obvious and powerful influences is on savings rates. In extended family systems, adults can count on their families to care for them in old age. In a nuclear-family world, people either must save or rely on government saving on their behalf to support themselves in old age. There are important feedback effects,

however. The availability of factory jobs or land on the frontier was a powerful inducement for nineteenth-century children to leave home. Moreover, changing economic circumstances creates other incentives to save, such as to finance children's education.

3. Class and Consumption

Different occupational and income groups display diverse consumption patterns. That is, they spend different proportions of their income on various goods and services. Some have therefore suggested that classes be defined in terms of consumption, along with or instead of income and occupation (Crompton, 1993) (C→E).

4. Discrimination

Note that since discrimination stands in the way of the best person getting the job, it will have a negative impact on economic efficiency and thus income. It will also likely increase the degree of income inequality (S→E).

S→A: Social Structure→Art

In the case of art, I have found the opposite result to that for the economy: links from social structure to art have been much more widely appreciated than those in the opposite direction. Indeed, some scholars (e.g., Hadjinicalaou, 1978) have ignored the ubiquity of causal links in proclaiming that art is *only* the expression of social structure.

1. Class and Art

Art has almost everywhere been associated with predominantly elite groups. These were the people with the economic and/or political wherewithal to possess works of art. Yet, art responds to a universal yearning, and thus even the poor have always had figurines, songs, and dances. Elite groups have striven to distinguish their art from the more common sort. These efforts are especially notable in the West since the nineteenth century (Di Maggio, 1994) as incomes rose, and the middle class expanded their artistic horizons. One important mechanism by which the elite did so was to stress that *fine* art could only be appreciated properly by those who had the time and money for proper artistic education. There was thus a distinction between the simple pleasures of mass culture and the more cultivated aesthetic appeal of high art. Those who controlled educational establishments naturally cooperated in this worldview. And art dealers also encouraged an elite view of art which

supported high prices on the one hand and a respect for expert opinion on the other (Gillowy, 1993).[17]

I naturally join Sporre (1992) in wishing to move past an elitist definition of (good) art. Yet, I also share Gillowy's (1993) concern that we not abandon the idea of aesthetic standards. I have defined art as that which appeals to universal human nature, and argued that there is good reason to believe that art appreciation is a result of certain specific genetic drives. Inevitably, some artworks must satisfy us more than others. While individuals and groups will have different tastes, we should expect to see works of art that are widely hailed.

To what extent do artists strive to please elites (E→A2)? If little, then we could hope to find a number of great works of the past that were shunned due to bias in their day. If much, we would have to recognize that all works would be tainted by upper-class values (see Hadjinicalaou, 1978). And certainly, we could not expect the artistic community to completely ignore the incentives to please those with money and power. On the other hand, artists generally try, at least consciously, not to create for an audience (Sporre, 1992). And there is a longstanding tradition within the artistic community that artists are an avant-garde group fighting against the establishment. While Hadjinicalaou (1978) felt that art could be reduced entirely to the relations between social groups, Gillowy (1993) notes that the mere fact that artworks contain social biases does not necessarily mean that they do not also have a more universal aesthetic appeal (E→A).

2. Gender and Art

In the West, both economic and political power has generally resided in the hands of white males. It is thus likely that the views of women and ethnic minorities will be under-represented in the world of art. Many modern scholars have attempted to rehabilitate the reputation of previously obscure female artists. Others have argued that the art in question does not meet the standards of the existing canon, not because women are inherently inferior as artists (though some may believe this) but because they had so much less opportunity to exercise their talent. Chadwick (1990) adds a new element to the debate. She argues that many masterpieces are wrongly attributed to men. Chadwick identifies Tintoretto, Hals, and David as male artists who took credit for works now recognized as having come from women in their employ. It was standard at the time for master artists to have workshops with many assistants; the master took credit for all work no matter how little he may have touched it.

As women gradually gain prominence in various fields of art, it will become

clearer as to whether there are inherent differences between the art of men and women. Certainly, male works are often hailed for their virility and female works for their sweetness. Note, though, that the works that Chadwick (1990) attributes to women have also been hailed for their masculine values. If there are genetic differences across genders in genetic drive, perceptual apparatus, and spatial or linguistic appreciation, these will likely be reflected in their art. Moreover, as long as women are socially disadvantaged, they may be able to display a greater appreciation of the oppressed (but this raises the possibility that any observed differences in art across genders may reflect environment rather than genes). Still, we could expect there to be more variation within than across genders.

S→P: Social Structure→Politics

How does social structure influence politics? Mann (1986) notes that many theories of the state have a large social structure component. Marxian theory emphasizes class divisions. Pluralist theory argues that all social groups play a role, though they differ significantly in the power they wield. Mann is critical of both for ignoring the autonomous role of the state. His preferred "statist theory" has room for an appreciation of the social influences on politics, while also recognizing that institutions matter, and that a political elite has its own agenda (an approach I naturally applaud).

In order for groups to be political actors, there must either be such a strong commonality of interest that individuals acting on their own naturally further group interests, or, more likely, there is some institutional structure which allows the group to act collectively. In acting collectively, the group must overcome the "free-rider" problem, the tendency of group members to let others do all the work. We must be concerned, then, not just with relations between groups, but with the internal organization of groups. Other things equal, groups in which members are strongly linked to each other but weakly to outsiders will be more effective. Members must also share a strong interest in policy changes, and an ability to devote time and effort to the cause. Even this will often not be enough. Olson (1982) has long argued that the most effective way to overcome the free-rider problem is for organizations to provide private benefits to their members. Unions can serve working-class interests by providing individuals with job security. Ethnic leaders must be able to provide their followers with status or self-esteem or economic advantage. The importance of individual rewards means that organizations pursuing collective action usually start small.

1. Class-Based Political Action

In Marx's analysis of history, class conflict loomed very large.[18] The rise of the bourgeoisie to power signaled the move from feudalism to capitalism. Eventually, the working class would rise and institute socialism. In the modern world, many scholars doubt that classes have either the organization or sense of common purpose to exercise significant political power (though class rivalry is widely viewed as an essential feature of the state; Lewellen, 1992). Maier (1987) worries that class-based battles over the distribution of power and income have been replaced, but by what? Pessimists point to the importance of superficialities in modern elections, while optimists suggest that debates that range across social divisions are more conducive to social stability. If the lack of class-consciousness prevents important social grievances from being addressed, this stability may serve the interests of some more than others.

2. Gender and Politics

We are unaware of any society in which women were more powerful than men (some commentators speculate on the existence of prehistoric female-governed goddess-worshiping civilizations). Various hypotheses have been put forward to explain this. The male advantage in physical strength may often have been the essential determinant of power relations. Moreover, the requirements of childbirth and breastfeeding have generally kept women more socially isolated than men; men were thus better placed to engage in political activity. At the same time, men encouraged the development of cultural ideas favorable to a limited role for women (Bem, 1993; C→S1). Economic success can lead to political influence (E→P); the tendency of men everywhere to dominate the "best" occupations (in turn a reflection of G,C,P→S) further enhanced their political power.

Why are women under-represented in democratically elected legislatures? Cultural attitudes that induced both men and women to favor male candidates have faded over the last decades, but not vanished. Some argue that women are less aggressive and more home-oriented. Yet, women are equally active on political campaigns, and dominate many volunteer organizations and school boards. The key may still be differing cultural expectations of what particular genders are supposed to do. In the past, both the temperance and suffrage movements mobilized great numbers of women. (Women's groups have only occasionally seemed politically influential since that time.) Peterson (1990) suggests that abuse and fear of abuse may have a similar effect today in motivating more women to seek political leadership.

Finally, why do women and men vote differently? Most obviously, they have different concerns. Women, who still tend to do most of the childrearing, could be more responsive to issues of child poverty as a result. Personality differences (whether based in genetics or environment) could also be important: if women are more compassionate and nurturing, as is sometimes claimed, they will be more supportive of various social programs (Bem, 1993). Finally, men and women may differ in how they evaluate political leaders, with men tending to separately evaluate policy, behavior, and status, but women developing a more holistic image (Ellis, 1993).

3. Ethnicity and Politics

All modern states have ethnic minorities. Indeed only a very few fit the nationalist ideal of having a sizable majority of the population come from one ethnic group (C→P). Managing ethnic conflicts is thus a key challenge facing every modern state. Twentieth-century history is sadly replete with horrific examples of failures to control ethnic tensions. How then can ethnic conflict be managed? Hegemony is one possibility. If one group is all-powerful, others may see rebellion as too costly. However, this will only work if the dominant group respects the needs of minorities. Given that power corrupts and that misunderstandings are inevitable when some groups are excluded from power, a better strategy may be power sharing. Various countries have developed a host of institutions that include constitutional guarantees of various rights and explicit divisions of power. If ethnic groups cannot work together, appeals to some third party arbitrator may be necessary. This could be another state or some neutral insider. Tito, in Yugoslavia, was respected enough by the varying ethnic groups that he was able to play the role of honest broker between them. Yet his Yugoslavia also pursued the fourth strategy for managing ethnic conflict: federalism. In this way, most ethnic groups are given regional governments in which they can be dominant (McGarry and O'Leary, 1993).[19] One fundamental problem with all of these approaches is that explicit recognition of ethnic divisions serves to solidify them. A group with its own assembly, or its own laws, or a guaranteed position for its own leader, must inevitably be less likely to identify with the state as a whole. Yet, we have seen (C→P) that states depend on a sense of shared purpose among the inhabitants. Thus, state systems must walk a tightrope, providing groups with protection but also with strong reasons to feel connected to the state as a whole.

4. Mobility

One might suspect that people experiencing either upward or downward mobility would be different from others in their political attitudes. Those moving up, for example, might be expected to believe that society is just, people get what they deserve, and thus social assistance is misguided. Since achievement motivation is associated with conservatism (I→P), some link is probable. However, in an extensive survey spanning six continents, Turner (1992) found no consistent relationship between mobility and political attitudes (though upwardly-mobile Japanese tend to be conservative). Rather, the mobile tended to adopt the political attitudes of their destination class (tempered slightly by the attitudes of their originating class).

While mobility appears to have little impact on individual political attitudes, Turner is confident that the existence of mobility supports societal stability. It encourages a belief that the society is fair, and provides the ambitious with non-revolutionary routes to success. Fortunately, substantial mobility appears to be a characteristic of all the societies Turner studied (he notes that economic growth is very conducive to mobility: E→S). Still, Turner suspects that the greater degree of mobility observed in North America is associated with greater political stability.

Note that we think of mobility in terms of class. If class and ethnic divisiveness are the two greatest threats to social stability, would increased mobility between ethnic groups also be stabilizing? The very idea of ethnic mobility seems nonsensical when we think of ethnicity as an inherited characteristic, but ceases to be if groups are instead defined by cultural attributes.

S→C: Social Structure→Culture

Social structure influences culture in two broad ways. First, culture at the societal level must reflect and indeed justify social divisions. Second, social divisions usually generate subcultures that influence broader societal attitudes and practices. Some of the ways in which these effects occur are more widely appreciated than others. Given space limitations, I will again refer readers to Szostak (2002) for more detail on these linkages.

S→T: Social Structure→Technology and Science

In recent decades, students of both technology and science have come to appreciate (at least some of) the influences which social structure exerts on their domains. Indeed, as with art, some scholars have argued that only social

structure influences the evolution of science and technology. While we should appreciate the biases which social structure introduces into the innovative process, one should not lose sight of the fact that scientific and (especially) technological insights must be tested, albeit imperfectly, against an external reality.

1. Gender

Though the proportion of women as scientists, engineers, and inventors is rising, it is still true that these fields are predominantly male. While this appears to have been the case throughout recorded history, Stanley (1995) shows that there has always been a significant minority of women innovators; she notes that women still only provided eight percent of American patents in the late 1980s. Some would suggest that genetic differences are at least partly responsible. Men are more rational, while women are intuitive. Men like argument and competition, while women stress community and stability. Men want to master nature while women wish to live in harmony with it. Some feminists have pursued this line of argument: they argue that society should not put rational scientific thought on a pedestal, but should give equal weight to more feminine modes of inquiry which emphasize intuition and emotion. Most scholars, though, would likely argue that non-genetic factors have been primarily if not entirely responsible for the gender imbalance in science and technology (see Fox, 1995, on discrimination). They can thus accept that science is a worthy endeavor, while worrying that gender biases may nevertheless have crept into it.

Gender roles in society at large can also influence the direction of scientific and technological advance. Cowan (1983) and others have shown that developments in household technology were designed (and served) to transform, but not reduce, the workload of housewives. We must remember, though, that technology has unforeseen consequences. The telephone, designed by men to serve the interests of male-dominated business, was soon captured by housebound women for social interaction.

2. Class

Innovations deemed offensive to the dominant class may be blocked politically (P→T). The upper class may exert more subtle influences as well. Pacey (1990), for example, feels that the use of gunpowder spread so slowly in the Islamic world because it would have enhanced the role of lower-class infantry at the expense of upper-class cavalry. If the upper class can hinder innovations it does not like, can it also foster innovations that maintain its social position?

There is a longstanding minority tradition in the history of technology (e.g., Noble, 1984) that argues that key innovations were pursued in order to keep workers in their place. Mechanization has often served to replace skilled artisans with unskilled machine tenders. It is not clear, however, that this motive, as opposed to simple cost savings, drove the innovators. Moreover, much technology developed over the last couple of centuries has increased the demand for highly skilled workers.

3. Intellectuals

Do intellectuals deserve to be thought of as a class? Eyerman (1994) feels that intellectuals are really a group outside the class system. The answer, of course, depends on how one defines class. Intellectuals certainly differ markedly in terms of income. There are, however, a relatively small number of occupations that contain the vast majority of those people society would classify as intellectuals. And in terms of status, the group by definition qualifies for a rather specific role in society (though status varies across societies).

Most people believe that e equals mc^2 because the community of physicists displays confidence in the equation, not because they could independently justify the result (Sperber, 1990). Some scientists may be more respected than others: many are willing to take the laws of thermodynamics on faith but think evolutionary biologists to be godless and misguided. Yet we can also think of a general cultural attitude toward science, and indeed intellectuals in general. The more respected these are, the more likely it is that scientific insight will be influential in public debate and that the society as a whole will support an intellectual *class*.

The relative status accorded to intellectuals will also influence the number and quality of those willing to pursue such a career. Societies in which generals or bureaucrats or merchants get the lion's share of prestige will not likely be known for the strength of their science or philosophy.

4. Prestige Goods

We do not know why some aspects of the material world become symbols of prestige, but we observe social distinctions of a material nature in all societies (Lemmonier, 1992). Often, then, innovators will be driven to make improvements that have little practical utility. In the modern West, cars are designed to go faster than anyone ever drives. Developments, which at first aid only the wealthy, may later be applied to goods for mass consumption; prestige goods may, then, play an important role in technological advance.

S→H: Social Structure→Health and Population

Empirical studies usually find differences along ethnic, gender, marital status, and class lines in terms of health, mortality, and migration, while all except gender differ in terms of fertility as well. The causal links involved are generally indirect, and thus often unappreciated.

1. Class and Fertility

While the rich have more children in many historical societies, in developed countries this is not true (E→H). The rich apparently concentrate on, for example, providing a couple of children with quality educations. Some of the poor may choose a different trade-off: if pessimistic about any one child's chances of success, they may decide to have several.

2. Race and Fertility

Black Americans have long had higher birth rates than white Americans. Yet, the trends in birth rates have been remarkably similar, indicating that members of both groups respond to similar forces. In recent years, the major source of fertility differences has been the high rate of teen pregnancy in the black community (Daugherty and Kammeyer, 1995). Teenage pregnancy is likely more common when teenagers are pessimistic about their future (I→H).

3. Gender Relations and Fertility

Since women bear most of the costs of childbearing, an increased power of women within families tends to result in a decline in fertility. Increases in female educational attainment are associated with declining birth rates (P→H), though this correlation reflects learning about contraception as well as increased self esteem and earning potential (Daugherty and Kammeyer, 1995).

4. Health

Within developed countries, ethnic differences in health generally reflect class divisions. Poorer ethnic groups are the least healthy, due in large part to inferior access to food, clothing, shelter, water, education, and health care, as well as increased likelihood of criminal activity and hazardous occupations (the poor are also observed to snack more and eat more junk food).[20] Not all ethnic differences in health can be attributed to economic factors. Some may be genetic; certainly some groups are more susceptible to certain diseases (G→H). African countries are often healthier than South Asian countries, despite being poorer. Less dense African populations may have greater access

to food. Disease incidence is also greater in densely populated South Asia. And the lower status of women in South Asian society appears to promote undernourished foetuses and babies.

In the developed world, women live longer. At least part of this difference is genetic. For example, testosterone weakens the body's immune system, and thus men are more prone to disease than women. In the less developed world, there are fewer women than men; this difference relative to developed countries may be due in large part to infanticide or substandard care of female babies.

5. Drug Abuse

The incidence of drug abuse varies considerably across ethnic groups. Much but not all of this can be attributed to income/status differentials. The poor are much more likely to turn to drugs (or, some would argue, just more likely to be arrested for doing so). Cultural differences in acceptance of particular substances and/or behavior are also important.

6. Families and Migration

Members of nuclear families are more likely to migrate than members of extended families. Single men are the most likely to migrate, though young couples are also common migrants. A family in which one child inherits everything encourages that family's younger children to move. In all of these cases, family structure influences both the economic situation and emotional ties which individuals have to their family, and through them to their locality.

S→N: Social Structure→Non-Human Environment

We tend to take for granted the existence of class-based neighborhoods. The arrival of commuter railroads and the automobile allowed a greater degree of urban segregation than before. The upper and middle classes moved to the suburbs and built their homes on larger lots than existed in working-class, inner-city neighborhoods. In their new suburbs, they could ensure homogeneity through building codes and zoning regulations.

Ethnic segregation is a more complex phenomenon. It reflects discrimination in housing markets on the one hand, and the desire of people to interact with those from a similar cultural background on the other. While there are advantages in terms of mutual defense and support, as well as political representation, there are costs in terms of children being exposed to only one set of cultural influences and lacking a diverse set of role models and potential

contacts (N→E).

Concluding Remarks

I will not rehash the introduction here, and certainly not reprise the diverse discussions of causal links above, but briefly draw a handful of lessons for the study of social structure. First, I hope to have shown that a full understanding of the role of social structure in human society requires us to deal with hundreds of causal links (not all of which could be discussed here). Readers may disagree with some of the arguments I have related, but will hopefully recognize that all these links have a place in the understanding of social structure. Second, it is sheer folly to think that any one theory or method will tell us all that we would wish to know about all of these links. Third, we must be willing to accept complexity, but need not abandon hope of understanding. The schema provides a structure for organizing the diverse linkages that should be discussed. In doing so, it hopefully serves to diminish the siren song of grand theory (or method), which claims to organize diverse linkages, but at the cost of ignoring links that do not fit. Fourth, we must appreciate that social structure is influenced by, and in turn influences, phenomena across all other categories. It would be a serious mistake to view social structure as exclusively cause or effect. Fifth, the schema allows us to simultaneously examine causes of both societal stability and societal change; neither should be the exclusive focus of scientific inquiry. Finally, I have shown both important similarities and differences in the roles of different types of social division.

The schema may seem overwhelming at first, but I am striving for a change in *gestalt*. Academic specialization allows us to mislead ourselves about how complex the world is. This material should awaken people accustomed to disciplinary thinking into recognizing complexity, and then show them a way to cope. Once individuals become accustomed to the schema, it becomes easy to hang all bits of human scientific understanding on that structure. This will help in the study not just of social structure, but all subjects or problems.

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Notes

1. Admittedly, the reader has to take one aspect of this demonstration on faith: I might have (but did not) ignored scholarly insights that I could not fit comfortably into the schema. But the reader can readily observe the range of material that is included (and note that the schema can be revised in the face of new information).
2. Interdisciplinarians can and should stress that we provide integration, and that this more than compensates for the fact that we may lecture on subjects on which we lack specialist expertise. The schema highlights the need for both specialists and interdisciplinarians, and allows us to paint the "big picture" much better than before. The fact that it makes the tradeoff with specialization more explicit is healthy.
3. Szostak (2002) serves a complementary purpose with respect to the *culture* category. I survey a large number of links between cultural phenomena and phenomena in all other categories (which I am able to disaggregate in detail). I also surveyed diverse links for Szostak (2000a) and (2000b). And in deriving the schema, I read widely across all human science disciplines. The only cases of which I am aware for which causal links do not exist between pairs of phenomena involve links toward genetic predispositions, as genetic evolution occurs slowly relative to changes in other phenomena.
4. Feminist scholars often distinguish sex, by which they mean the physiological differences between men and women (which we would largely capture under G→S), and gender, by which they mean the cultural attitudes associated with these (which we would largely capture under C→S). Note that group membership is the same in both cases. I follow Brody and Hall (1993) in using gender; they note that to do otherwise prejudges the relative importance of genetic and cultural influences.
5. de Swaan (1990) argues that individuals have a natural tendency to jealousy, and that this is easily transferred to the group level. Groups, like individuals, will not admit their jealous motives, but will instead argue that others are undeserving. Barkow (1989) feels that while our tendency to jealousy makes the achievement of a truly egalitarian society difficult, therein lies the only hope of achieving social stability. The very complexity of modern society may make it possible for each individual to be valued for unique abilities/contributions.
6. Indeed, while feminist scholarship is often portrayed as monolithic by commentators, feminists disagree on many things. Tong (1989) identifies seven main strains of feminist thought: liberal, Marxist, radical, psychoanalytic, socialistic, existentialist, and postmodern.
7. Hormones may play a greater role in gender difference than genes per se. We are all exposed to the same hormones, but girl fetuses receive more estrogen and other female hormones, while boy fetuses receive more testosterone. One female fetus in a thousand gets a large dose of androgen; such girls are observed to behave more like boys.
8. If one-year-old children are separated from their mothers, girls are more likely to cry while boys are more likely to get aggressive. Even at this early age, however, we have to worry that mothers may already have communicated to their children that crying is a more rewarded strategy for girls and aggression for boys (S→I).

9. Braverman, in the 1950s, argued that the relative status accorded various occupations differed little across time and space. While his work encouraged the emergence of new areas of sociological research, most of his conclusions were overturned (Buraway, 1998). Burk (1991) notes that income is not perfectly correlated with occupation. Nor is either of these correlated perfectly with another source of status in modern societies, education. Thus, relative status of occupations is often debatable.
10. MacCannell (1992) feels that our society is too willing to attribute status to those of high income rather than to those who serve society. Yet, it is noteworthy that early in this century, the ability of the working class to dress much the same as the middle class (due both to cheap textiles and access to running water) may have served to severely reduce the sense of class identity (Ewen and Ewen, 1982).
11. Until the English Industrial Revolution, even the vast bulk of industrial production took place in the home. And even in the modern West, where work outside the home is the general rule, important acts of production—cooking, cleaning, laundry, maintaining, and improving the home itself—are performed within the family. As for consumption, while internal decision-making structures vary considerably across societies, it is the family which decides on what and how much to consume, and how this will be divided among family members.
12. Economic theory has generally been hostile to the idea that discrimination could play a very important role in economic activity. If some employers were unwilling to hire able blacks or women, an opportunity should exist for another employer to come along, hire these blacks or women, and prosper (either because the employer should be able to gain higher-quality employees on average by not discriminating, or because they may be able to pay slightly lower wages). In the real world, though, this potential employer may suffer at the hands of racist bank managers, business contacts, or unions. Or, the entrepreneur may find that their black employees and white employees (or men and women) are unable to cooperate.
13. Those in power can also use their influence to change public perceptions of particular groups. John Kennedy's presidency served to calm public fears of Catholicism. Carnoy (1994) notes that blacks have fared best in America when political leaders forcefully addressed issues of race.
14. Institutions can also affect racial attitudes simply by causing different groups to interact. Integration of the American Army forced whites and blacks to work together and rely on each other. While there is evidence that forced contact such as this is less likely to reduce racial stereotypes rather than voluntary contact (Rothbart and Lewis, 1994), it does appear that those who serve in the American Army do significantly soften their stereotypes. The integration of women into the armed forces may also affect gender stereotypes, but evidence here is less clear.
15. Entrepreneurship can also be enhanced or limited by the values of an ethnic subculture (C→S,E). A strong group feeling that the "deck is stacked" against them can limit entrepreneurship—even if this has a strong basis in reality (see e.g., Sowell, 1994). Attitudes toward integration are also important. While some sense of identity may encourage ethnic economies (and encourage ambition, if it supports self-esteem),

entrepreneurial success is unlikely without contacts in the wider business community. Attitudes toward family and gender are also salient. Many small entrepreneurs depend on unpaid family labor, especially in startups. In some cases, the business is simply viewed as the extension of the home, and is dominated by the man; in others, the entrepreneurial contribution of women is highly valued.

16. If there are in fact few personality differences based on gender, then exclusive sexual orientation appears illogical (unless we elevate the physical entirely above the psychological in sexual attraction) (see Bem, 1993).

17. It was literature where elite groups faced the greatest difficulty in distinguishing their art from that of the masses. Elites and elite educators arguably developed the idea of a canon of great literature in order to achieve this distinction. The canon, from the beginning, was heavily weighted with works in Greek and Latin that only those educated in the best schools could hope to comprehend. As the middle class came to attain a good education too, they adopted the attitudes of the elite. The rationalist orientation of the bourgeoisie encouraged a search for objective criteria by which great literature could be separated from common. Modern literary theory has instead focused on exposing the social biases in literature in general and the definition of the canon in particular. Some scholars feel that the very idea of a canon of great literature is offensive, while others struggle to ensure that women, ethnic minorities, and the lower classes achieve greater representation (Gillowy, 1993).

18. Mann (1986) argues that the nineteenth century, during which Marx lived, witnessed much greater class conflict than has been true before or since. In the era before industrialization, the dispersed peasantry faced huge obstacles in mobilizing for political action (see Taylor, 1993). Industrial workers based in their own homes felt much stronger ethnic, religious, and regional loyalties than class loyalty. Only as large numbers of workers were gathered in urban factories could class-based political action become common. Worker groups fought for, and won, key rights such as collective bargaining and the vote.

19. One problem with federalism is the difficulty of drawing borders (a problem which afflicts international borders as well). Rare is the case where the bulk of a group desirous of some regional assembly is contained within a region that does not also contain large numbers of members of other groups (McGarry and O'Leary, 1993). A further difficulty involves historical claims: ethnic groups have migrated over the centuries and thus often claim lands by historical right that are now inhabited by others. McGarry and O'Leary conclude that the track record of federalism in managing ethnic conflict is poor, and thus are not disappointed that Asian and African political leaders have remained suspicious of it.

20. The observation that individuals with high status/income fare better than others is no surprise to biologists, who commonly observe this result within non-human species (Ellis, 1993).

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Appendix

Table of Phenomena

Categories	Second-Level Phenomena	Third-Level Phenomena
Genetic Predisposition	Abilities	Consciousness, subconsciousness, vocalization, perception (taste, touch, sight, smell, hearing), toolmaking, learning, decision-making, other physical attributes (locomotion, eating, etc.)
	Motivation	Food, clothing, shelter, safety, sex, betterment, aggression, altruism, fairness, identification with group
	Emotions	Love, anger, fear, jealousy, guilt, empathy, anxiety, fatigue, humor, aesthetic sense, joy, grief, disgust, emotional display
	Time Preference	
Individual Differences	Abilities:	
	Physical Abilities	Speed, strength, endurance
	Physical Appearance	Height, weight, symmetry
	Energy Level	Physical, mental
	Intelligences	Musical, spatial, mathematical, verbal, kinesthetic, interpersonal
	Personality:	
	Sociability (Extro/introversion)	Talkative, assertive, adventurous, and enthusiastic vs. reserved, withdrawn
	Emotionality (Stable/moody)	Contentment, composure, vs. anxiety, self-pity
	Conscientiousness	Thoroughness, precision, foresight, organization, and perseverance vs. carelessness, disorderly, frivolous
	Affection (Selfish/agreeable)	Sympathetic, appreciative, kind, and generous, vs. cruel, quarrelsome, fault finding
	Intellectual Orientation (Holistic/analytical)	Openness, imagination, curiosity, and sensitivity vs. close-mindedness
	Other dimensions?	Dominant/submissive, in/dependent, strong/weak, future/present oriented, humor, aggression, happiness
	Disorders?	Schizophrenia, psychoticism, ...?
	Sexual Orientation	
	Schemas	View-of-self, others, casual relationships
	Interpersonal Relationships	Parent/child, sibling, employee/r, romance, friendship, casual

Continued on next page

Categories	Second-Level Phenomena	Third-Level Phenomena
Economy	Total Output	Price level, unemployment, individual goods and services
	Income Distribution	
	Economic Ideology	
	Economic Institutions	Ownership, production, exchange, trade, finance, labor relations, organizations
Art	Non-reproducible	Painting, sculpture, architecture
	Reproducible	Theater, film, photography, music, dance, prose, poetry
Social Structure	Genders	
	Family types	Nuclear, extended, single parent
	Kinship	
	Classes (various typologies)	Occupations (various)
	Ethnic/Racial Divisions	
	Social Ideology	
Politics	Political Institutions	Decision-making systems, rules, organizations
	Political Ideology	
	Nationalism	
	Public Opinion	Issues (various)
	Crime	Against people, against property
Culture	Languages	By descent?
	Religions	Providence, revelation, salvation, miracles, doctrine
	Stories	Myths, fairy tales, legends, family sagas, fables, jokes, and riddles
	Expressions of culture	Rituals, dance, song, cuisine, attire, ornamentation of buildings, games
	Values (Goals:)	Ambition, optimism, attitudes toward wealth, power, prestige, beauty, honor, recognition, love, friendship, sex, incest, marriage, time preference, physical and psychological well-being
	(Means:)	Honesty, ethics, righteousness, fate?, work valued intrinsically, violence, vengeance, curiosity, innovation, nature
	(Community:)	Identity, family vs. community, openness to outsiders, trust, egalitarianism, attitude to young and old, responsibility, authoritarianism, respect for individuals
	(Everyday Norms:)	Courtesy, manners, proxemics, tidiness, cleanliness, punctuality, conversational rules, locomotion rules, tipping

Categories	Second-Level Phenomena	Third-Level Phenomena
Technology & Science	Fields (various)	Innovations (various)
	Recognizing the Problem	
	Setting the Stage	
	Act of Insight	
	Critical Revision	
	Diffusion/transmission	Communication, adoption
Health	Nutrition	Diverse nutritional needs
	Disease/Injury	Viral, bacterial, environmental
Population	Fertility	Fecundity, deviation from maximum
	Mortality	Causes of death (various)
	Migration	Distance, international?, temporary?
	Age Distribution	
Non-Human Environment	Soil	Soil Types (various)
	Topography	Land forms (various)
	Climate	Climate Patterns (various)
	Flora	Species (various)
	Fauna	Species (various)
	Resource Availability	Various Resources
	Water Availability	
	Natural Disasters	Flood, tornado, hurricane, earthquake, volcano
	Transport Infrastructure	Mode (various)
	Built Environments	Offices, houses, fences, etc.
	Population Density	