SPONTANEOUS ORDER ANALYSIS AND ANTHROPOLOGY*

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ABSTRACT

Spontaneous order analysis is applicable to patterned social phenomena that are the results of human action but not of human design. For example, the spontaneous, unplanned social orders of the market and common law codes contrast with their planned counterparts, i.e. central economic plans and statutory legal codes. The tradition of spontaneous order analysis can be traced through Mandeville, Hume, Ferguson, Smith, Menger, Hayek, and others. Invisible-hand explanation is the method of spontaneous order analysis. Convincing invisible-hand explanations must be methodologically individualistic and must not rely upon the supposition of any unusual abilities of the participants or unusual events in the process. All steps in an invisible-hand explanation must be plausible accounts of the normal course of events in the society in question. Menger's (1892, 1981, 1985) explanation of the origins of money is the paradigmatic example of an invisible-hand explanation of a spontaneously ordered social phenomenon. Anthropologists may be able to apply spontaneous order analysis to many areas of interest, including economic anthropology, the study of kinship systems, and legal anthropology.

I. *Introduction*

The frequent "blurring of genres" (Geertz 1983) that occurs both within anthropology and between it and the other social sciences has given it a certain hybrid vigor of which anthropologists can be proud. The purpose of this paper is to introduce to anthropologists yet another school of thought from outside the discipline in the hope that they might find it useful.

The school of thought in question has come to be known as spontaneous order analysis. It is concerned with those regularities in social behavior that are neither the products of deliberate planning, such as a statutory law code or a national economic plan, nor the results of purely natural phenomena that exist outside the realm of human_ intervention, but that are instead the largely unintended results of the actions of individuals (Hayek 1973; Barry 1982: 8). Spontaneous order analysis is thus concerned with the unplanned processes whereby the interactions among individuals within aggregations come to display the regularities and predictabilities that justify our calling such aggregations "societies."

In an abstract sense, "order" is defined as *"a state of affairs in which a multiplicity of elements of various kinds are so related to each other that we may learn from our acquaintance with some spatial or temporal part of the whole to form correct expectations concerning the rest, or at least expectations which have a good chance of proving correct"* (Hayek 1973: 11; emphasis in original). From the point of view of an individual, the society in which he is resident is ordered to the degree to which he can successfully make plans based on his expectations of the future behaviors of his fellows (Hayek 1960: 160). This makes intuitive sense if we think of a newcomer to a society. At first all may be chaos to him, but after a time he learns to expect certain behaviors from the natives and to make plans for his own behavior on that basis.

This definition of social order, with its emphasis on expectations and the coordination of plans, is closely akin to Evans-Pritchard's (1951: 19-20) description of social structure as the

> "uniformities and regularities of social life It is only because people know the kind of behaviour expected of them, and what kind of behaviour to expect from others, in the various situations of social life that each and all are able to go about their affairs. They can make predictions and anticipate events, and lead their lives in harmony with their fellows because every society has a form or pattern which allows us to speak of it as a system, or structure, within which, and in accordance with which, its members live their lives."

All societies consist of many such spontaneous orders, often in combination with planned and partially planned orders. The study of spontaneous social orders seems particularly central to anthropology since it is the only social science that deals regularly with stateless societies, which typically have no apparatus capable of making or enforcing centralized plans or deliberate social conventions.

II. *The Tradition of Spontaneous Order Analysis*

Glimmerings of the concept of spontaneous social order can be seen at least as far back as Luis Molina (1535-1600) and the Spanish Schoolmen of the sixteenth century. They emphasized the unplanned .nature of market coordination (Hayek 19676: 98; 1973: 21). Over a century later, Dr. Bernard Mandeville (1670-1733) foreshadowed many aspects of spontaneous order analysis in arguing that private vices could become public benefits. Mandeville based his argument on an appreciation of the importance of the unintended consequences of human action. He

presented his ideas in the form of a poem entitled *The Fable of the Bees* (Mandeville 1924 [1732]).[1]

The spontaneous order concept gained much wider acceptance thanks to the work of four Scottish Enlightenment figures, Josiah Tucker[2] (1712-1799), David Hume[3] (1711-1776), Adam Ferguson (1723-1816), and Adam Smith (1723-1790). For anthropologists, Adam Ferguson is in many ways the most interesting figure of this period. He was alone among the Edinburgh intelligentsia in having been born in the Highlands, where the clan system was.,still active, Gaelic was the dominant language and the economy was not yet fully commercialized (Forbes 1966: xiii). He thus was more than an armchair anthropologist; he had done his fieldwork while growing up. He was also an avid reader of travelers' accounts of America and other non-Western lands, as were many of his Scottish contemporaries (Myres 1916; Whitney 1934: 145-54; Gay 1969: 319; Rendall 1978: 124). To Ferguson, "savages" were neither noble nor ignoble. They were simply people, and their societies had both virtues and vices, like his own (Ferguson 1767: 105; Harris 1968: 30; Meek 1976: 154-5). He emphasized an empirical approach to society and eschewed the frequent assumption of his time that the human " state of nature" wassimply what would be left if European society were stripped of its virtues (Ferguson 1767: 75-76; Evans-Pritchard 1981: 28).

Ferguson's exhaustive study of the human experience led him to the clearest statement to this date of the spontaneous social order concept:

> "Every step and every movement of the multitude, even in what are termed the enlightened ages, are made with equal blindness to the future; and nations stumble upon establishments, which are indeed the result of human action, but not the execution of any human design" (Ferguson 1767: 122).[4]

Ferguson applied the idea that many social institutions are "the result of human action, but not the execution of any human design" to a variety of phenomena. His discussion of language is a particularly nice example of the use of the spontaneous order concept (1792: 42-3):

> " ... although no single genius, however vast, is equal to the invention of a language, ... we may yet conceive that a talent for the use of arbitrary signs, such as the ordinary race of men possess, operating in the detail of occasions, struggling to express a meaning in such signals as occurred, or were nearest at hand, has enabled the parties mutually to understand, and be understood, so as to give to the vernacular dialect of every society, in the result of their efforts, its degree of enlargement and use."

Like Ferguson, Adam Smith both was influenced by the anthropological writings of his day (Meek 1976: 115) and made impor-

tant contributions to the spontaneous order tradition. Chief among these is his "invisible-hand" explanation of market phenomena. Although the market participant "intends only to his own gain, ... he is in this, as in many other cases, led by an invisible hand to promote an end which was no party of his intention" (Smith 1776: 423). Equally interesting but less well known is Smith's (1759: 184-5) invisible-hand explanation of the origins of moral sentiments. More will be said below on the usefulness of invisible-hand explanations.

Elements of spontaneous order analysis can be seen in the writings of Marx and Engels (Popper 1963: 323; Sowell 1980: 103). Marx, for instance, rejected the conspiracy theory approach to history when he refused to lay the responsibility for a system of social relations upon any of the individuals involved (Marx 1906: 15; see also Sowell 1980: 99). In so doing, however, he veered very close to the notion of the superorganic and away from the methodological individualism of spontaneous order analysis. Engels, on the other hand, showed some appreciation of the importance of the individual human will and of the unintended consequences of action when he wrote that

> "history is made in such a way that the final result always arises from conflicts between many individual wills....what each individual wills is obstructed by everyone else, and what emerges is something that no one willed" (Marx and Engels 1959: 399).

The nineteenth century's greatest contributions to spontaneous order analysis were made by the Viennese economist Carl Menger. Menger is best known as a leader of the marginalist revolution. Menger distinguished between social phenomena that are of "pragmatic" origin, i.e.; those that are deliberately created either through an overt agreement or through legislation, and those that are "organic," i.e., "the unintended result of individual efforts of members of society, i.e., of efforts in pursuit of individual interests" (Menger 1985: 158). He included in the "organic" category such disparate phenomena as language, law, morals, religion, settlement patterns, the origins of pristine states, and especially " numerous institutions of the economy," including market prices, wages, interest rates, and money (Menger 1985: 157). He saw the explanation of organic institutions as "the most noteworthy problem of the social sciences: *How can it be that institutions which serve the common welfare and are extremely significant for its development come into being without a* common will *directed toward establishing them?"* (Menger 1985: 146, emphasis in original). Menger was insistent that such phenomena must

be explained in a methodological individualist way, i.e. as "the unintended result of innumerable efforts of economic subjects pursuing *individual* interests" (Menger 1985: 158). Menger did not, however, feel that organically produced social institutions are necessarily superior to pragmatically produced ones. For example he felt that the common law "has also proved harmful to the common good often enough, and on the contrary, legislation has just as often changed common laws in a way benefiting the common good" (Menger 1985: 233).

The twentieth century's main exponents of spontaneous order analysis have been Michael Polanyi, Karl Popper, and F.A. Hayek. Polanyi (1941, 1951) applied the idea to the social process of science, and appears to have been the first to use the term spontaneous order (1941). Popper noted that "the vast majority of social institutions have just 'grown,' as the undesigned results of human actions," (Popper 1944: 122) "just as a road may be formed without any special intention by people who find it convenient to use a track already existing" (Popper 1944: 122n; see also Popper 1963: 93 and 323-4).

Nobel laureate F.A. Hayek has far and away been the most prolific spontaneous order analyst of this century (see Hayek 1948a, 1948b, 1960, 1967a, 1967b, 1973, 1977, 1979).[5] One of his main emphases has been on the role of knowledge in spontaneous ordering processes. Hayek (1948a: 54) considers the "central question of all social sciences" to be " How can the combination of fragments of knowledge existing in different minds bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess?" For Hayek the generation of market prices is the paradigmatic case of spontaneous social order. Although it involves dispersed individuals using only the knowledge they possess of their specific circumstances, it tends toward equilibrium through the gradual coordination of individual plans and expectations. Like Menger, Hayek is a methodological individualist (at least in his earlier writings, but see Vanberg 1985). For him "there is no other way toward an understanding of social phenomena but through our understanding of individual actions directed toward other people and guided by their expected behavior" (Hayek 1948b: 6). Furthermore, the existence of spontaneous orders can be empirically verified by this method, for it is "by tracing the combined effects of individual actions [that] we discover that many of the institutions on which human achievements rest have arisen and are functioning without a designing and directing mind" (Hayek 1948b: 6-7).

Although anthropologists have rarely made explicit use of ideas from the spontaneous order tradition, [6] they have occasionally hit upon aspects of the approach. Evans-Pritchard's description of social structure, quoted above, is just one example. Barth's (1966: 2) methodological individualism and his emphasis on explanation of social forms "by exhibiting what *makes* the pattern, i.e. certain processes" is in harmony with the spontaneous order approach. Bailey's (1969: 9) view that "we are seeking a level of understanding of how the game works which may not be known to those who play it" is reminiscent of some aspei:ts of spontaneous order analysis, as is P.M. Blau's (1985) effort to add the concept of emergence to Homans' social exchange approach. Mary Douglas (1967a: 144-5) gave a spontaneous order explanation of a complex multiple exchange rate system among the Lele: "In such transactions there is an appearance of centrally imposed control, but it is deceptive. No central governing body imposes the rates of exchange. The exchange control emerges by the decisions of individuals striving to hold to their position of advantage in a particular social structure." And finally Turner's (1974: 60) approach to symbols, in which he regards "system as mainly the result of concrete interests and interacting wills rather than existing 'out there' in a world of beliefs, norms, and values", is akin to the spontaneous order approach. No doubt there are many more such examples in the literature.

III. *Invisible-Hand Explanation: The Method of Spontaneous Order Ana(ysis*

Following Adam Smith's famous metaphor, the methodology of spontaneous order analysis has come to be known as invisible-hand explanation. [7] Any social phenomena which are suspected to be, in Ferguson's words, the results of human action but not of human design, are eligible for this approach (Ullman-Margalit 1978: 263). Invisible-hand explanations often are alternatives to explanations by design, replacing them with hypothetical scenarios in which the social phenomenon " is brought about through a process involving the separate actions of many individuals who are supposed to be minding their own business unaware of and a fortiori not intending to produce the ultimate overall outcome" (Ullman-Margalit 1978: 267).

Invisible-hand explanations have a number of characteristics that make them aesthetically satisfying and persuasive. One such characteristic is their fundamental nature. " Fundamental explanations of a realm are explanations of the realm in other terms; they make no

use of any of the notions of the realm. Only via such explanations can we explain and hence understand everything about a realm; the less our explanations use notions constituting what is to be explained, the more *(ceteris paribus)* we understand" (Nozick 1974: 18-19). Invisible-hand explanations are fundamental or reductive in this sense because they do not require the actors to have any pre-existing knowledge of the resulting social pattern. They thus explain the social pattern in question in terms outside itself.

Another pleasing characteristic of invisible-hand explanations is that they are often surprising. Indeed, often their most surprising aspect is their very existence, i.e. that an apparently designed phenomenon is simply the unintended by-product of simple human action (Ullman-Margalit 1978: 271-72). In addition, the more complex and highly ordered the phenomenon to be explained, the more surprising and powerful is an invisible-hand explanation of it.

Invisible-hand explanations contrast with other possible explanations. One alternative might be c·alled "visible-hand" explanations, wherein the social pattern is explained as the result of an overt designer, as in the case of a centrally planned economy. Another alternative might be called "hidden-hand" explanations (Nozick 1974: 19), wherein there is a designer's hand involved, but it is kept covert. Conspiracy theories are of this variety. Both of these types of explanation are appropriate to some social phenomena, but not to those phenomena that are most plausibly seen as the results of human action but not of human design.

Elster (1979, 1983) has proposed four conditions for invisible-hand explanations. He feels that an explanation is of the invisible-hand variety if, for an institution or behavioral pattern X, with a function Y for group **Z,**

"(1) Y is an *effect* of X;
"(2) **Y** is *beneficial* for Z;
"(3) **Y** is *unintended* by the actors producing X;
" (4) **Y** (or at least the causal relationship between X and **Y)** is *unrecognized* by the actors in Z;" (Elster 1979: 28, emphases in original).

While conditions 1 and 3 are clearly necessary for an explanation to fall in the invisible-hand category, 2 and 4 are problematic. It is obviously possible to offer an invisible-hand explanation for a social pattern widely seen as bad for the group.[8] Schelling's (1969) individual-choice model of the emergence of racial segregation is a possible example (see Ullman-Margalit 1978). It is also possible for an explanation to remain in the invisible-hand category even if the actors recognize the

relationship between their behaviors and the resultant pattern, so long as they are not motivated chiefly by a desire for that pattern (Langlois 1986).[9]

Ullman-Margalit has proposed two more constraints on invisible-hand explanations that may be added to Elster's first and third conditions. Her first condition is that "the description of the initial stage from which the process is supposed to take off is to consist of nothing but the private intentions, beliefs, goals, and actions of the participating individuals, in a specified setup of circumstances" (Ullman-Margalit 1978: 271). Because the exact nature of such "intentions, beliefs, goals, and actions" is not specified by spontaneous order analysis itself, it may be necessary to refer to a particular theory of individual behavior, to empirical observations about how people tend to behave, or simply to common sense in order to provide a convincing description of the initial state of affairs.

Her second condition is one of "normalcy." Despite the fact that the very existence of an invisible-hand explanation of a phenomenon may be surprising, the exp_lanation itself must "sound like a description of the ordinary and normal course of events" and " cannot hinge on the extraordinary and the freaky, or on strokes of luck or genius even if these are logically, physically and humanly *possible"* (Ullman-Margalit 1978: 271, emphasis in original). Reliance on such mechanisms would not only destroy an explanation's surprise element, it would also undermine its power.

The condition of' 'normalcy" is very similar to Fritz Machlup's notion of "understandability." To Machlup, the actions of the actors in the model must be "'understandable' to most ofus in the sense that we could conceive of sensible men acting (sometimes at least) in the way postulated by the ideal type in question" (Machlup 1955: 16-17). This idea is mainly derived from Schutz (1953: 38) and Weber (1949: 40-41; see Langlois and Koppl 1984). These ideas are also similar to the idea that anthropological understanding is "from the native' s point of view," properly understood as not requiring "more-than-normal capacities for ego effacement and fellow feeling" (Geertz 1983: 70).

Ullman-Margalit also proposes as a third constraint that the actors must not "have the overall pattern that is ultimately produced in mind, neither oh the level of intentions nor even on the level of foresight or awareness" (Ullman-Margalit 1978: 271). This is analogous to Elster's fourth condition, and the same criticism made above applies here.

The following five-stage schema summarizes the general features of the invisible-hand method (derived primarily from Menger (1981, 1985) by

Koppl (1988: 21-22); Vanberg (1988: 9) has provided a similar list of steps).

> (1) A description of the "initial institutional regime." Depending on the particular phenomenon to be explained, this may consist of the action patterns of the actors, their roles, their goals, their knowledge, and/or the constraints they face.
> (2) Identification of' 'unexploited profit opportunities." In less economistic language, these are simply the previously untried ways available to the actors to achieve their goals more efficiently given the conditions described in step 1.
> (3) "Innovation." Within the bounds of the condition of normalcy, the analyst supposes that some of the actors will notice the opportunities described in step 2.
> (4) "Reaction and imitation." As some actors notice the opportunities identified in step 2, others modify their behavior both in response to and in imitation of the innovators. This is the heart of any invisible-hand explanation and its character will vary widely depending on the phenomenon to be explained.
> (5) "New institutional regime." The sequence of reactions and adjustments is followed until the social pattern that was the goal of the explanation is achieved.

This schema is intended as a list of guidelines for the construction of an invisible-hand explanation, not as a rigid list of requirements. Generally speaking, any explanation of a largely unplanned social pattern is of the invisible-hand variety if it is a methodologically individualist account that does not involve the resultant pattern as a goal for the actors and that does not require unusual luck or feats of brilliance on any of the actors' parts.

IV. *Some Brief Examples*

I have chosen the following short examples of invisible-hand explanations of spontaneously ordered social phenomena both for their importance to all of sociocultural anthropology and for the variety of anthropological interests they represent. There are many other possible examples in the literature, but these three should suffice to demonstrate the usefulness of the spontaneous order approach to anthropological mqmry.

A. The Origins qf Money

The nature and origins of money have long been central concerns for both anthropologists and economists. Carl Menger's invisible-hand

account of the origins of money is widely considered paradigmatic to spontaneous social order analysis. Prior to Menger it was common to believe that money originated either as an invention of the state or as a product of deliberate social convention (see Menger 1981: 315-320). Menger (1981: 318) traces the roots of his explanation back to John Law (1720: 4; 1706-07: 167). The "initial institutional arrangement" in Menger' s explanation is that of a pure barter economy. In order for any one individual to exchange his goods for ones he values more highly, he must first find someone who not only has the desired goods but who is also willing to exchange them for precisely those goods which the first individual has to trade. Individuals initially exchange their goods only for those that they immediately need, ignoring those they do not need (Menger 1985: 153).

At this point some-perhaps many-individuals are liable to notice that some goods are more saleable than others (Menger 1892). In other words, possession of some goods is more advantageous in terms of finding a trading partner than possession of others. Such individuals are likely to respond to this situation by being ready to accept the most saleable items in exchange for their own goods, even if they do not actually need the goods themselves for any purpose other than exchange. Individuals may even seek out opportunities · for such triangular exchanges. The goods that are the most suitable to this sort of mediated exchange are precisely those that have the qualities typical of money, such as ease of transport, durability, and divisibility (Menger 1985: 154). The saleability of the good in--q_uestion begins to increase beyond its original level precisely because more and more people are willing to accept it rather than only the goods for which they have an immediate need. As this positive feedback continues, the good's saleability and the advantages of indirect exchange are likely to become increasingly obvious to all concerned, not just the few observant individuals who started the process. Since an unusually high level of saleability is money's chief distinguishing characteristic from other goods, once a particular good reaches some threshold level of saleability we can say that money has been created. Thus it is not at all necessary to invoke either state action or deliberate social convention to explain the origin of money. It can instead be understood "as the spontaneous outcome, the unpremeditated resultant, of particular, individual efforts of the members of a society, who have little by little worked their way to a discrimination of the different degrees of saleableness in commodities" (Menger 1892: 250).[10]

Although the synchronic nature of most anthropological fieldwork makes it is difficult to find clear examples of the Mengerian process, the example of shell money on the island of Bougainville in the Solomon Islands is intriguing. In about 1908-09, Thurnwald (1912: 38) found that among the Buin at the southern end of the island, shell "money" (Thurnwald placed the word in quotes) was used only to obtain wives and allies and to pay restitution for murders, but not often for trade purposes. When it came to trade, limited barter of like goods for like goods, i.e. perishables for perishables and tools for tools, was the order of the day (Thurnwald 1912: 36). Thurnwald returned to Buin in 1934 to find that a great variety of goods were now routinely exchanged for shell money. In 1930, at the north end of the island Blackwood (1935) found an economy in which shells and tobacco were approaching but had not yet reached universal currency, and in which barter was still common. Finally, in 1938 Oliver (1955: 341) found that among the Siuai, neighboring the Buin area on the southern end of the island, shell money was preferred for almost all transactions, although his informants said that barter had once been common. Although this picture is incomplete, it does indicate that it is plausible that people will realize the advantages of indirect exchange and that suc.h realizations will quickly lead to the development of a true money where none previously existed.

B. Kinship and Marriage Systems

Kinship and marriage systems are good subjects for spontaneous order analysis because they consist of interlocking systems of rules and expectations that add order to individuals' social worlds and because they are not deliberately planned. Furthermore, convincing invisible-hand explanations of such systems would be both surprising and intellectually satisfying because such systems are often quite elaborate and complex. Invisible-hand explanations of kinship and marriage systems must follow all of the rules and procedures outlined above. Above all they must not invoke any causal factors beyond the initial institutional regime and the specific motivations and limited kr:iowledge of the actors involved.

Invisible-hand explanations could, in principle, be given for many different aspects of kinship and marriage systems, including descent rules, marriage transaction practices (bridewealth, brideservice, dowry, etc.), and the various types of kinship terminologies. The specific example here will be the origins of a rule of lineage exogamy, i.e., a situation in which people are organized into social units that trace their descent back to a

common ancestor (lineages) and in which one may not marry an individual in one's own lineage. Such rules are common in the ethnographic record. Because spontaneous order analysis itself provides only the guidelines for the construction of invisible-hand explanations and not specific predictions of the relevant motivations and abilities of the individuals involved, we must look to theories of behavior and to empirical research for those sorts of details. William Irons' (1981) behavioral ecological explanation of how a rule of lineage exogamy might be maintained in a society provides such a basis- for this discussion. Using a combination of Tylor's (1889) ideas on marriage rules, Darwin's (1871) theory of sexual selection, and Chagnon's (1983) description of Yanomamo society, Irons outlined in game theoretical terms the sorts of conditions that would help maintain a rule of lineage exogamy. His theoretical motivation was to look at how such a rule could be the outcome of individuals' strategies aimed (either consciously or unconsciously) at enhancing their inclusive fitness (Hamilton 1964), i.e., tl:eir genetic representation in future generations. Although Irons was more concerned with describing the conditions that would maintain a rule of lineage exogamy than with those that would give rise to such a rule, he left the door open for an invisible-hand explanation of this process:

> " ... individuals are born into ongoing social systems with social compacts inherited from the past. people either attempt to change or to circumvent inherited social compacts that are not congruent with their interests This bending and changing of social rules in pursuit of perceived self interest leads to gradual renegotiations of inherited social compacts" (Irons 1981: 480).

Irons' argument is that under certain environmental conditions lineages are preferable to nuclear families as units of marriage partner exchange. He lists the following eight environmental conditions that are necessary for his model to be relevant to a particular society. In the terminology of invisible-hand models, these form part of the initial institutional regime.

> (1) "Primary [i.e., nuclear family] Incest Avoidance Decreases Inbreeding Depression." Avoidance of primary incest is nearly a universal in human as well as in most animal societies and is best explained as a way of avoiding the hazards of inbreeding depression.
> (2) "Marriage is Superior to Extramarital Sex as a Reproductive Strategy." This, too, is a nearly universal condition among humans.
> (3) "Polygyny Makes Females a Limited Resource for Which Males Compete." In this context, polygyny includes both synchronous polygyny and serial monogamy.
> (4) "Warre Makes Violence, or the Threat of Violence, an Important Ele-

ment in Mate Competition." The term "warre" (Sahlins 1968) "refers to a condition in which each individual is in a position to use violence in pursuit of his own interests" (Irons 1981: 481). This contrasts with the usual condition within state societies in which only a minority of individuals are able to use violence. A condition of warre seems also to have been what Tylor had in mind when he wrote (1889: 267) "Again and again in the world's history, savage tribes must have had plainly before their minds the simple practical alternative between marrying-out and being killed out."

(5) " Individual Mate Choices are Limited by the Need for Kin Aid in Mate Competition." It is common in the ethnographic record for individuals to lack full control over their own mate choices because of the importance of assistance from kin.

(6) "The Mate Pool Is Not so Small as to Make Exogamy Impractical." "If the actual number of individuals of the opposite sex that one encounters in a lifetime is very small, it may be necessary to consider as potential mates all members of the opposite sex other than nuclear family members" (Irons 1981: 481).

(7) "Wives Are Most Easily Obtained by Exchanging Women for Women." A common condition in the ethnographic literature is for males to exchange sisters or for parents to exchange daughters as sons' wives. If, instead, goods or services are exchanged for women in a particular society, then Irons' model would not necessarily apply.

(8) "Competition for Other Resources Does Not Dictate the Formation of Other Social Compacts." Irons' model may not apply if competition is greatest over resources other than mates. Such competition may make other social formations more likely to occur than lineage exogamy.

Irons considers conditions one through six to be very widespread, but seven and eight are less universal. When these environmental conditions do exist, the lineage will be preferable to the nuclear family as the unit of marriage partner exchange for three principal reasons. First, different nuclear families are unlikely to be good matches for one another in terms of age and sex of offspring. Second, individual nuclear families are small and therefore subject to stochastic variation in the sex ratio of offspring, making it likely that many families will have an ample supply of sons but not of daughters with whom to obtain wives for those sons. And third, even if a nuclear family has many daughters relative to sons, the prevalence of violence as a tool in mating strategy may mitigate the apparent advantage. A nuclear family would need both a good number of males for defensive purposes and a similar number of females for mate exchange purposes. A rule of lineage exogamy makes a much larger group the unit of marriage partner exchange. This makes defense of one's females much more feasible, and it makes it more likely that a female will be available to offer in exchange whenever a male is in a posi-

tion to acquire a wife. Thus, paradoxically, prohibiting marriage with certain kin actually enhances a.lineage's members' abilities to find mates.

Because Irons' argument was inspired largely by the example of the Yanomamo Indians of South America, I will also focus on that society. The Yanomamo have patrilineages, i.e., they trace descent through male links to common male ancestors, and they use a type of kinship terminology called Iroquois-Dravidian. The most important aspect of this system for this discussion is that marriageable individuals are distinguished terminologically from non-marriageable individuals. Cross-cousins (the children of different-sex siblings) in particular are terminologically designated as marriageable. For example, a man calls his mother's brother's daughter and his father's sister's daughter by a term that means both "wife" and "female cross-cousin." All other relatives are considered unmarriageable. This includes a man's parallel cousins (the children of same-sex siblings), who, if the marriage rules are followed consistently, all ought to be members of the man's patrilineage. The Yanomamo use sibling kin terms for both true siblings and for parallel cousins. This expresses their unmarriageable status, since it would be "incestuous" to marry a person one calls "sister" or "brother." Hence the Yanomamo kinship terminology itself expresses the rule of lineage exogamy, and an explanation of the origins of such a rule must also be an explanation of the origins of this terminology.

Although we cannot say what sort of kinship terminology system the Yanomamo or their forebears may have had before the development of their current system, it is logically necessary to make the assumption that it was one that does not include any expression of a rule of lineage exogamy. My own American or "Eskimo" kinship terminology system, for example, has no way of expressing such a rule. It simply distinguishes nuclear-family kin from non-nuclear-family kin. Given the starting point of such a non-lineal and non-exogamous system, how could the terminology be altered to express a rule of lineage exogamy?

It is common in the ethnographic record for individuals to extend particular kin terms to individuals to whom the terms do not strictly apply. The goal often seems to be manipulation of that person's behavior. One of the simplest ways for individuals to manipulate non-nuclear family members would be to extend nuclear-family kin terms to them. Thus a man who is in need of a woman to exchange in marriage might take to calling his brother's daughter "daughter" and a man in need of males to aid in defense might call his brother's son "son." This would be the "innovation" step in this invisible-hand explanation. While such an act

would exclude the female in question from the original man's possible mates and daughters-in-law, it also extends some claim by that man to her as an exchange item (the same can be said if a man starts to call his female cousin "sister"). Naturally the original man's brother is likely either to protest or to reciprocate and make similar claims on his brother's offspring, if this strategy is advantageous to him, and this would be the "reaction and imitation" part of the invisible-hand explanation.[11] If such a pair of brothers sets up a marriage partner exchange relationship with another group, and if the relationship lasts for more than one generation, a pattern of cross-cousin marriage is thereby created, the general features of the Yanomamo's Iroquois-Dravidian system are in place, including a rule of lineage exogamy that is expressed by the kinship terminology, and the "new institutional regime" has been explained.

How plausible is such a scenario? The description of the initial institutional regime seems to be accurate, at least for the societies that Tylor and Irons had in mind when constructing their arguments, i.e. the Iroquois and the Yanomamo, respectively. In both cases warre is clearly present and females are the crucial scarce resource for males in their efforts to reproduce. Furthermore, it is now well documented that the modern Yanomamo are avid manipulators of their kinship terminology (Chagnon 1982, 1988; Saffirio 1985). For example, Yanomamo men have been found frequently to reassign terminologically technically non-marriageable women into the marriageable category. It seems reasonable to suppose that their ancestors would have been willing and able to reassign kin to categories in the ways described above, creating a new kin terminology and a matching rule of lineage exogamy, and so Ullman-Margalit's condition of normalcy is fulfilled. The invisible-handedness of this explanation lies in the fact that although all any individual involved concerned himself with was his own mating success and that of his close kin, the result was the creation of a widespread rule of lineage exogamy combined with a pattern of cross-cousin marriage and a kinship terminology that reflects these results.[12]

C. Common Law and Customary Legal Codes

The terms "common law" and "customary legal codes" will be used here to refer to those legal traditions that differ from statutory codes in that they are simply the sum of accumulated legal precedents rather than the results of deliberate acts of law creation through either legislation or

mandate. Because it is not planned in any real sense, the common law belongs in Menger' s "organic" category o'f social phenomena; since it serves to increase the reliability of peoples' expectations concerning the behavior of others, the common law also is an appropriate subject for spontaneous order analysis.

Following the procedure given above, a spontaneous order analysis of the development of an area of common law would begin with the "initial institutional regime." This would include relevant aspects of the previous common law in that area, particularly its demarcation of rights, its liability rules, and its procedural norms. When a conflict is created by an action whose legality under the existing code is vague, it is likely that eventually two or more parties will see opportunities for gain in adjudication. Thus an "unexploited profit opportunity" for legal decision making at least potentially exists in whatever subjects the current code is hazy. Individuals contemplating behavior in such areas would not have reliable knowledge of what to expect from their law-abiding fellows-acquiescence or incrimination-in response to their behavior. A hypothetical example might be the unknown responses to a land sale in a society in which such sales are previously unknown. In such a situation the rights and responsibilities of all the parties involved-not just the immediate parties to the sale but possibly also their families and lineage members-have yet to be fully spelled out, and the situation becomes a candidate for adjudication by a court or its functional equivalent.

Such legal gray areas are often cleared up through the extension of precedents. Why this should be so is not entirely obvious, but one answer is that precedents are convenient "focal point solutions" (Schelling 1960; Barkun 1968). A focal point solution to a social coordination problem is one that appears fairly obvious to the parties involved. For instance, two travelers trying to meet one another within New York's Grand Central Station (without having pre-arranged exactly where) are both likely to go to the most obvious spot, the information desk. Although focal point solutions are often very useful coordinating devices, they may very well depend more on "analogy, precedent, accidental arrangement, symmetry, aesthetic or geometric configuration, casuistic reasoning, and who the parties are and what they know about each other" (Schelling 1960: 57) than on a reasoned attempt to find the "best" solution to the problem. This is clearly often the case with legal precedents.[13]

The evolution of rules of territoriality among the Mukogodo of Kenya illustrates how the invisible-hand methodology could be used by legal anthropologists. Before 1925, the Mukogodo lived in caves in the cedar

forest that bears their name, living off wild animals, plants, and honey from both wild and manmade hives. They spoke a unique Eastern Cushitic language (Heine 1974). Their neighbors were mostly pastoralists who spoke Maa, the language of the Maasai and Samburu. In the early part of this century, the Mukogodo began to intermarry with their neighbors, and as they acquired cattle as bridewealth they began to move out of their caves, to build Maasai-style houses, and to speak Maa. By 1936, they had moved out of their caves entirely and had become primarily pastoralists. Today they no longer hunt, and their old language is all but forgotten (see Cronk 1989 for more details on Mukogodo history and society).

The Mukogodo were divided into thirteen (now eleven) exogamous lineages, and during the cave period each lineage had its own territory. In the initial institutional regime, members of a lineage were allowed to hunt, trap, gather plants and honey, place beehives, and use water only within their own territories, unless invited to do so in another territory by a member of the lineage that owned it. Trespassing in another lineage's territory was considered an offense, and honey theft was one of the most serious crimes. Each territory included several caves, and families moved from cave to cave in search of food as the seasons changed. As the Mukogodo began to acquire cattle they moved out of the caves because they were usually located in areas that were awkward for cattle-keeping and inconvenient for pasture. It was unclear whether the old territorial rules included rights to pasture, and many Mukogodo with cattle often settled in areas that were outside their own lineages' territories. In other words, the transition to pastoralism uncovered an unexploited profit opportunity by exposing a hazy area in the existing legal traditions, and many people innovated by moving out of their traditional territories. A colonial government administrator recorded that in the late 1950s one man reacted to the changes by trying to extend his lineage's traditional territorial rights to pasture and to exclude others' cattle from his land, but by that time the new institutional regime of free access to grazing was well established and his attempt failed (Worthy 1959: 1). Nowadays not many people still live in their lineages' territories, and not only grazing but water, wild plants, and wild honey are open to all. Rules about hunting and trapping are now irrelevant because both are illegal and nearly nonexistent, and so the last bastion of the old territorial system is in the placement of beehives. This rule, too, is crumbling. It would be very inconvenient for most Mukogodo to keep bees if they could place them only in their traditional territories, since those areas are

often more than a days' walk from their homes. Many people have responded to this situation by asserting a right to place hives in the trees around their houses, regardless of whether they live in their own lineages' territories. In some cases, these hives are becoming more and more numerous and are being placed farther and farther from the houses. It seems that it is only a matter of time before the rule concerning the placement of beehives is completely abandoned, and the old territorial system is completely transformed. This example is brief and the subject matter simple, but it serves to demonstrate how the methodology might be used.

In addition to clarifying the development processes behind particular laws, spontaneous order analysis might also be useful to legal anthropology in more general ways. For example, with its dual emphases on both tradition and process, the spontaneous order approach to legal institutions could help to bridge the gap between the two main paradigms in legal anthropology, the' 'rule-centered" and' 'processual" approaches (Comaroff and Roberts 1981: 5). The rule-centered approach sees social behavior as rule-governed and treats disputes more or less as social pathologies. The processual approach sees humans as self-seeking and focuses less on legal institutions than on legal interactions. A spontaneous order approach would treat a society's current rules and legal institutions as real and important, but as the emergent products of the self-seeking behaviors that form the center of the processual approach. It would also see such rules and institutions as amenable to change through such micro-level processes.

Considerable efforts have already been made to mend the rift between these two approaches. Sally Falk Moore (1977,1978,1986) has been a leader in this area. It is not surprising, therefore, that her work contains some of the clearest statements of spontaneous order ideas to be found in anthropology. Moore (1978: 9) has noted that although "at various times and places, there have been attempts to codify everything once and for all, in the long term all legal 'systems' are built by accretion, not by total systematic planning." Such accretive legal systems are made of "rules that could be said to have evolved 'spontaneously' out of social life" (Moore 1978: 80). One would expect this to be all the more true in stateless societies.

Moore has identified two sorts of processes occurring in societies. The first, called "processes of regulation," is the effort to struggle "against indeterminacy," to "fix social reality, to harden it, to give it form and order and predictability." The second, called "processes of situational

adjustment," is the effort to exploit "the indeterminacies of the situation," using "whatever areas there are of inconsistency, contradiction, conflict, ambiguity, or open areas that are normatively indeterminate" (Moore 1978: 50). These two sorts of processes eventually merge into each other, i.e., "strategies used in situational adjustments ... if repeated sufficiently often, by sufficient numbers of people, may become part of the process of regularization" (Moore 1978: 51). By the same token, if new rules are invented frequently enough, what was an effort to "fix social reality" becomes an effort to adjust to the current situation. The insight that these two processes are really both parts of one larger process is central to spontaneous order analysis. Collier's work on the legal system in Zinacantan, Mexico, has led her to similar conclusions. She notes that although the current pattern of usage of different legal levels may appear stable, "its continued existence depends on the stability of the conditions that produced it" (1973: 254). The process involves feedback between litigants and mediators at various levels that is influenced by changing decision-making patterns, shared knowledge of the participants in the process, and the incentive structure each participant faces. The result is a legal system with the appearance of a certain long-term stability and resilience but that is always subject to a process of alteration.

V. *Conclusion*

Spontaneous order analysis with its method of invisible-hand explanation is potentially useful to anthropologists with a wide range of substantive interests and theoretical approaches. I chose the examples of money, kinship systems, and law to demonstrate this. Although spontaneous order analysis is probably incompatible with some current anthropological paradigms, such as those that deny a connection between the behaviors and motivations of individuals and cultural forms, it is clearly complementary to the vast majority.

It is only through using spontaneous order analysis that anthropologists will discover the precise ways in which it will prove useful. However, it is possible that we can learn in this regard from an analogy with game theory. Anthropologists have found game theory, or at least the metaphor of gaming, quite useful. Bailey's (1969) *Strategems and Spoils* is a classic example. By leading many scientists whose work might previously have been nearly mutually incomprehensible to pattern their explanations in similar ways, game theory has allowed many resear-

chers to realize that many apparently disparate social phenomena have certain important common features-payoffs, strategies, etc. By providing a common set of terms in which to hold <;iiscussions, game theory has also allowed such scientists to converse more effectively and to be better critics of one another's work. It has, in short, become a sort of"focal point solution" for much social scientific discourse and has created greater order, in the sense that word is used here, within and between a wide range of fields. Similarly, spontaneous order analysis can provide a focal point solution for social scientists interested in the origins of unplanned social patterns.[14] By using its mode of explanation and its terminology consciously and explicitly, such scientists can make their work more easily comparable with that of their fellows and can facilitate scientific discussion.

I have written this article because I believe Hayek (1984: 194) is right that anthropology is "the discipline which more than any other has in our day concentrated on what were the central problems of the Mandeville-Hume-Smith-Ferguson tradition." I hope my efforts serve to make anthropologists more aware both of their debt to this tradition and of the extent to which they might benefit from it **in** the future.

NOTES

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[1] Although there is some question as to how much of Mandeville' s work involved the concept of spontaneous order (see Viner 1958; Goldsmith 1976; Horne 1978), it is clear that he did have a significant impact on subsequent social philosophers (Barry 1982; Hayek 1984), and he is recognized as having made contributions to early anthropological theory (Slotkin 1965: 253-68). Among other things, he made the first clear statement of the division of labor concept (Hayek 1984: 176) and emphasized empiricism over moralism in the study of human nature (Slotkin 1965: 253).

[2] Tucker's writings are somewhat ambiguous on the question of spontaneous order. In many ways he seems to form a bridge between the mercantilist and laissez-faire traditions in economic thought. See Barry 1982.

[3] The work of David Hume, too, has often seemed unclear on the matter of the spontaneous growth of social institutions such as morals. Part of the confusion may lie in the way he drew a line between the "natural" and "artificial." All that in which humans have had a hand is deemed "artificial" while the term "natural" in regards to humans is reserved for their unconscious sentiments (Hume 1888: 528-9). At the-same time, he said of moral rules that " 'Tis self-love which is their real origin; and as the self-love of

one person is naturally contrary to that of another, these several interested passions are oblig'd to adjust themselves after such a manner as to concur in some system of conduct and behaviour. This system, therefore, comprehending the interest of each individual, is of course advantageous to the public; tho' it be not intended for that purpose by the inventors" (Hume 18?8: 529).

[4] Harris (1968: 51) interprets this passage as an example of the concept of the superorganic approach to culture. Ip_ fact, Ferguson is quite clear that humans are not merely the agents of cultural transmission.-, Humans create culture through their actions. His point is simply that human actions interrelate in unforeseen ways, and that many of the most important social institutions are in fact the unintended outcomes of human action. Ferguson clearly sees culture as an entity independent of neither human action nor human design.

[5] Hayek's many writings on this subject have earned him a fair number of critics as well as admirers, and a couple of their comments are worth mentioning. First, Hayek's recent writing have tended to emphasize group selection as the mechanism for the evolution of rules (Hayek 1967a: 67; 1973: 18,148, 164; 1979: 155; 1983: 32, 46-47), an evolutionary process now seen as implausible (Williams 1966; Lewontin 1970; Steele 1984; Vanberg 1985). Second, Hayek's "evolutionist optimism" (Vanberg 1983: 77) about the beneficial effects of a spontaneously developed legal tradition has been criticized on the grounds that he "seems to have failed to separate properly the positive and the normative implications" of the process (Buchanan 1977: 31). I might add two comments ofmy own. First, the strict division Hayek draws between spontaneous and planned orders seems untenable. We all try to impose some measure of order on our social environments, although most of us do not have the means to be very successful at this. A continuum between the two sorts of order is a more realistic position. Second, while Hayek tends to use the term "order" singularistically, my own use is pluralistic. I am willing to discuss separate sorts of orders within the same society, whereas Hayek's tendency is to discuss society as one entire social order. This is primarily a semantic and not a theoretical point.

[6] Hayek (1984: 194) asserts that cultural anthropology has been influenced by Menger through the work of Menger's student Richard Thurnwald (1912, 1916, 1932, 1934, 1950), but Thurnwald's major works reveal no particularly Mengerian bent on his part, nor do any of them seem to have had extraordinary influence on subsequent anthropological theory.

[7] Social scientists have frequently misunderstood Smith's metaphor as referring to some metaphysical or conspiratorial process. The confusion is understandable, given the exact meaning of "invisible." Strictly speaking, the "hand" is not "invisible" since in fact it does not exist at all. Smith's point was that the social process simply creates the appearance of a designer's hand in a manner analogous to an optical illusion (see Emmet 1958: 90 and Campbell 1971: 60-61, 73). Perhaps a better name for this type of explanation would be "illusory-hand."

[8] Elster's inclusion of this condition makes sense, however, in the context of his argument, which has to do with the characteristics of functional explanations. While some functional explanations are invisible-hand explanations, not all invisible-hand explanations are functional ones. Some may in fact be "dysfunctional" explanations.

[9] Nozick (1974: 352) has proposed that in some situations some persons involved in a spontaneously ordering process may in fact have the end in mind and that we might therefore consider refining the invisible-hand notion to admit of degrees. This is closely related to the point made above (note 4) concerning the existence of a continuum between spontaneous and planned social orders. Both of these points may be particularly relevant to the small-scale societies with which anthropologists tend to concern themselves.

[10] There has been a tendency in the anthropological literature on '.'primitive money" (Dalton 1965) to identify monies where their existence is dubious (Melitz 1974: 100-103; Douglas 1967a, 19676: 121-22). In many cases the good in question is only marginally

more saleable than other goods. Our analysis is not much helped by calling such goods " special purpose money," which to most economists would seem to be a contradiction in terms. Douglas (1967a) has proposed that many such goods are more closely analogous to ration coupons than to money. Douglas (1967b: 122) also proposes that Menger's approach to money is useful precisely because with it "we can avoid the paradox of money without co11;merce, and the study of primitive money can be confined to its appropriate sphere, the emergence of market economies" (1967b: 122).

[11] As Irons points out, behavioral ecological theory would predict that such brothers are likely to give each other greater leeway in this regard than they would more distant kin and non-kin due to the factor of their genetic relatedness (Hamilton 1964).

[12] Kang (1979a,b) has published results from cross-cultural tests that would appear to throw doubt on Irons' hypothesis. She did not find statistically significant evidence that exogamy leads to peace either within the exogamous unit or between units involved in a marriage partner exchange relationship. Several problems beset her reasoning. First, she classifies exogamy and endogamy as opposites for the purposes of her statistical tests. As Tylor (1889) knew, these rules are compatible as long as the exogamous unit is smaller than the endogamous one, and this pattern is in fact common. Second, it is conceivable that even if violence within endogamous lineages and between allied lineages did not decrease as a result of the institution of a rule of exogamy, the arrangement could still be militarily preferable to the individuals involved. This would be the case if the units in question present a solid front to outside aggressors, regardless of the amount of violence within each unit. Third, her findings could be interpreted as supporting Irons' hypothesis insofar as exogamy was found more often where violence is a problem, and agamy (no rule of either exogamy or endogamy) was more often found where_ violence is not a problem, since nothing in Irons' reasoning suggests that the overall level of violence will necessarily drop, especially as low as "peaceful" levels, due to a rule of exogamy. His suggestion was rather that where violence is a problem, an exogamous lineage would be more successful in dealing with it (and in dishing it out) than would a nuclear family.

[13] As Llewellyn and Hoebel (1941: 61) have pointed out, it is also often important to pay attention to those instances in which precedents are not followed. Such cases may provide insight both into efforts to arrive at the "best" solution, rather than just the most obvious one, and into the influence of differentially distributed power on legal proceedings.

[14] This discussion is not meant to imply that game theory and spontaneous order analysis are in any way competing modes of discourse. Indeed, because game theory is used chiefly to deal with the maintenance of a social pattern in which the patterns are already known while spontaneous order analysis is used mainly to deal with the origins of such patterns from initial conditions in which all relevant parameters are not known, they are not only compatible but complementary. In many if not most cases their applicability may actually overlap to some extent. The relationship between game theory and spontaneous order analysis is an important field for future inquiry (see Axelrod 1984, Sugden 1986, and Witt 1986 for insightful works that are relevant to this topic).

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