EDWARD O. WILSON'S SOCIOBIOLOGY: THE NEW SYNTHESIS: WHAT IT MEANS FOR SOCIOLOGY

THESIS

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The implications of sociobiology as presented in Wilson's Sociobiology: The New Synthesis are examined to determine to what extent 1) sociobiology can subsume sociology; 2) sociobiology is antithetical to sociology; 3) sociobiology reflects a movement within sociology. Basic assumptions of sociobiology pertinent to sociology--degree of determinism, existence of human universals, and definitions of society, culture, and human nature--are scrutinized alongside Wilson's view of sociology as a scientific discipline. The thesis explores weaknesses of both sociology and sociobiology and concludes that sociobiology, in ignoring culture as a source of behavioral motivation, is limited in reducing the sociological perspective to a biological one. Although the two disciplines have antithetical foundations, sociology has already begun to incorporate selected aspects of the sociobiological perspective.

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CHAPTER I

INTRODUCTION

> The social realm is a natural realm which differs from others only by greater complexity. Now it is impossible that nature should differ radically from itself in one case and the other in regard to that which is most essential. The fundamental relations that exist between things cannot be essentially dissimilar in the different realms.
>
> Emile Durkheim (19, p. 18)

The Advent of Sociobiology

There can be no doubt that sociology's untiring quest for scientific status has, from its inception, invited biological, or "natural," explanation, whether of a direct or an analogous nature. For more than a century this Spencerian proclivity has yielded a multitude of biology-induced hypotheses and theories, each designed to relate more cogently the natural and social worlds. These ideas have ranged from the radical, "man-is-only-an-animal" theories to the ideas that society is little more than a great super-organism.

For the most part, these theories have fallen into disuse, and during the past fifty years sociologists have

tended to reject, and often wholly ignore, biological interpretations of social behavior (38, p. 73; 63, p. 731; 71, p. 34). There is, in fact, a pervasive provincialism within the universities of the present (46), each discipline being content to carve out its own piece of the Great Pie of Phenomena while making sure that no one's slice is too large. The dialogue between sociologists and biologists seems to have been reduced to the agreement that the former will not try to synthesize proteins and the latter will not attempt analyses of the division of labor. According to one observer, science seems to have divided itself into "hermetically sealed compartments" (49, p. 1196).

In recent years, however, these partitions have been shaken by a theory which has undertaken the Herculean task of linking perhaps the two most disparate phenomena of the entire world of science: the gene and the society. This is the theory of sociobiology, which maintains that the explanation of all social behavior lies in the analysis of the reproductive success of each individual gene. Hence, the "basic life force" is tantamount to the tendency of each gene to maximize its numbers in future generations, in light of which society becomes merely the gene's "outermost phenotype." Analyzed from this viewpoint, culture,

personality, values, consciousness, and other social and psychological variables are relegated to the position of genetic mechanisms, techniques by which the genes adapt to their environment (70, p. 3).

As radical as this may seem at first glance, many behavioral scientists agree that the sociobiological viewpoint cannot be taken lightly: its arguments are compelling and its scientific bases are well founded (38). It has attracted both a devoted following among reputable scholars and a vociferous opposition within the same ranks. Unfortunately, the opposition, especially among social scientists, has been of a rather emotional nature, keying upon the idea that sociobiology strips away human autonomy while ignoring the scientific issues (13). This unwillingness to confront sociobiological theory may be, at least initially, unavoidable, since there are few social scientists who feel competent in cutting across all the disciplines concerned, such as ethology, anthropology, population genetics, and evolutionary biology, in order to mount a proper, scientifically based counterattack.

In the place of such a counterattack many sociologists, as well as anthropologists, psychologists, and even biologists,

have argued that the basic issue is a political one (2, p. 43; 3, p. 165; 26, p. 21; 55, p. 182; 65, p. 1151). Opponents of sociobiology shout "racism, sexism, and imperialism!" while sociobiologists rejoin with cries of "suppressionism and provincialism!." The former have been compared to "vigilantes" (68, p. 183); the latter, to Nazis (2, p. 43). The debate has made near enemies of former colleagues and, perhaps, has even been partially responsible for the dismissal of dissident professors (67, p. 55). Edward O. Wilson, the leading proponent of sociobiology, has cancelled lectures in fear of his and his family's safety (65, p. 1155). Such events surrounding the appearance of a new theory seem to educe a more literal interpretation from Kuhn's concept of scientific revolution.

As citizens in a democratic republic, it is legitimate, indeed necessary, for scholars to examine the political ramifications of any scientific theory; as scientists, however, it is imperative that the intellectual implications be examined as objectively as tempers permit. Although these two aspects of scientific theory are inevitably interwoven, the present thesis will attempt to unravel those facets of sociobiological theory which are pertinent to scientific and, especially, sociological discussion.

Objectives of This Study

The main task of this thesis is to answer the question "What does the advent of sociobiology mean for sociology as an intellectual discipline?." That is, will sociobiology subsume traditional sociological perspectives, relegating the discipline to a minor role? Will sociobiology stand against the sociologies as an alternate explanation, just as Buddhism and Christianity stand against each other? Can sociobiology be seen as a movement within the behavioral sciences, simply a more modern Darwinism?

Answering these questions will entail a careful analysis of sociobiology's basic assumptions about human behavior and the implications of those assumptions as regards modern sociological perspectives. Only by comparing the theories and methods of sociobiology to those of sociology can the academic community place sociobiology in a viable position.

Necessarily, this thesis will attempt to elucidate the broader strengths and weaknesses of current sociological theory, in the milieu of which the impact of sociobiological theory will occur. Secondarily, the present thesis will review the reactions of social scientists to sociobiology, both those who see sociology and sociobiology as mutually exculsive viewpoints and those who seek to accomodate

Wilson's theories within the sociological framework. It is hoped that such a presentation will further the free inquiry of social phenomena without sanctioning the espousal of political ideologies from the scientist's platform.

Focus and Limitations of This Study

The focus of this first chapter will be Edward O. Wilson's Sociobiology: The New Synthesis. By examining this book and the reactions to its publication, an attempt will be made to clarify three things: 1) the great appeal of Wilson's book; 2) the vehement character of the controversy surrounding it; and 3) the historical and intellectual context of its appearance. This chapter will also serve as a basic introduction to the main premises of sociobiological theory, and Wilson's text and his supplementary writings will be used as the primary source of that theory throughout this thesis.

To limit the field of sociobiology to the work of one theorist may seem somewhat artificial. The concepts contained within the perspective did not originate entirely with Wilson, and the sociobiological outlook has been adopted and extended by many scientists in both the biological and the behavioral disciplines. However, it would be just as difficult to write about the theories of sociobiology

as it would be to write about the theories of sociology, since no clear consensus exists in either field among the practitioners. Therefore, the present study accepts the limitations of space and practicality by focusing upon the work of Edward O. Wilson.

The primary use of Sociobiology: The New Synthesis can be justified for several reasons: 1) Several reviewers have declared that the publication of this book in 1975 launched a new scientific discipline (3, p. 166; 9, p. 129; 65, p. 1151); 2) The recent political and intellectual controversy surrounding sociobiology is highly centered upon Wilson's text (24, p. 76; 66, p. 54); 3) If it is true, as some scholars contend, that sociobiology represents a new paradigm (7, p. 77; 17, p. 42; 62, p. 75), then Wilson's text is surely the "exemplar"; and finally, 4) It has been Wilson's work, more than anyone else's, that has brought sociobiology to public attention (67, p. 54).

In Sociobiology Wilson defines the discipline as "the systematic study of the biological basis of all social beahvior" (70, p. 4). This systematic study is, in fact, the application of evolutionary theory as set forth by Darwin and Wallace and as "modernized" by Huxley and others.

Like all evolutionary theory sociobiology incorporates the concept of natural selection, applied in this case to social behavior as well as physical traits. Although the idea that social behavior evolves may not appear novel to sociologists, it is important to note here that Wilson is not assuming that society is an organismic whole as numerous social theorists have suggested, nor is he stressing that any specific type of human being or groups of human beings will be adaptive. Rather, he is saying that all cultural, social, and psychological traits are to be analyzed as phenotypes, observable properties of organisms that represent the consequences of the impact of environment upon the genotype. Wilson hypothesizes a causal chain of events, beginning with the existence and needs of DNA molecules and culminating in the esthetic achievements of civilizations. Once the evolution of the gene is understood, all the rest can be ultimately deduced.

The gene, not the individual or the group, is the focus of natural selection, defined by Wilson as "the process whereby certain genes gain representation in the following generations superior to that of other genes located at the same chromosome positions" (70, p. 3). Therefore, "any device that can insert a higher proportion of certain genes

into subsequent generations will come to characterize the species" (70, p. 3). Although many non-biologists tend to view these "devices" as physical phenomena (for example, thicker cell walls, longer necks and camouflaging skin pigmentation), Wilson also includes social-psychological variables such as emotions, ethics, and kinship structure. Social behavior is merely one class of these genetic devices.

One such device in this last category which is central to the sociobiologists' line of argument is altruism. Says Wilson, "As more complex social behavior by the organism is added to the genes' techniques for replicating themselves, altruism becomes increasingly prevalent and eventually appears in exaggerated forms" (70, p. 3). Altruism, described by Wilson as "self-destructive behaivor performed for the benefit of others" (70, p. 518), is the central theoretical problem of sociobiology. How, ask the sociobiologists, can individually self-destructive behavior have evolved by the process of natural selection? The answer for them is simple: kinship. In Wilson's words,

> . . . if the genes causing the altruism are shared by the two organisms because of common descent, and if the altruistic act by one organism increases the joint contribution of these genes to the next generation, the propensity to altruism will spread through the gene pool . . . even though the altruist makes less of a solitary

> contribution to the gene pool as the price of its altruistic act (70, pp. 3-4).

Thus, it is through kinship selection that sociality begins. This sociality is further extended, especially in human society, by "reciprocal altruism," behaviors performed for the genetic enhancement of unrelated others on the assumption that the recipient will return the favor at some future date (70, pp. 120-121). By this bartering of altruistic acts by strangers, natural selection will seem to work not only at the individual and family level, but also on the level of states and nations. Although altruism does not exhaust the gamut of social behavior, it offers a model by which all other social acts can be analyzed as techniques now employed by the genes to maximize their survival.

Since all social behavior is reducible to cost-benefit calculations on the part of the gene, the genetic parameters of a population (basically, the demographic variables: birth and death rates, age and sex structure, population density, for example) and the amount of intra- and inter-population gene flow become the major variables of social organization. By utilizing these two classes of variables sociobiologists hope to be able to predict the basic features of social organization and to understand "how forms

of social behavior characteristic of given societies spread genetically through populations" 63, p. 732). Social change (evolution) is, in turn, the outcome of the "genetic response of populations to ecological pressures within the constraints imposed by phylogenetic inertia" (70, p. 32). This "inertia" refers to the "deeper properties" of genes, the extent and speed of their ability to adapt; "ecological pressures" include all environmental influences, the agents of natural selection. These two forces are the "prime movers" of social evolution (70, p. 32).

The above are the main theoretical assumptions of Wilson's Sociobiology: The New Synthesis. The text of the book is devoted mainly to the application and extension of these ideas as they relate to non-human species. The work is a plethora of findings cited from recent studies in animal ethology and behavioral biology, and it contains an extensive and extremely readable introduction to evolutionary biology and population genetics. Despite the political and intellectual objections raised by its critics, it is, perhaps, on the way to becoming one of the classic works in biology.

For the most part the literary reviews reflect this opinion: Wilson's book has been hailed as a "mastery" (52, p. 262), a "towering achievement" (63, p. 731) which remains

unparalleled in its "simplicity and clarity" (9, p. 129). It has even been highly recommended by some leading sociologists such as Lenski (39, p. 530) and van den Berghe (62, p. 732). Simultaneously, at least one reviewer has deemed it "pretentious . . . the worst book in biology in 1975" (13, p. 590). Whatever one's personal opinion of it, Wilson's Sociobiology seems destined to avoid academic obscurity in the near future.

In fact, the publication of Sociobiology, described by some as a media event, was presaged by no less than front page coverage in The New York Times and The Chicago Tribune. It set up running debates in the pages of Science and the New York Review of Books and was the leading topic of discussion at conferences of biologists and of anthropologists (67, p. 55). Courses in sociobiology are now available at leading universities around the country, and at the pre-college level, at least three recent science textbooks include the sociobiological perspective, presenting much of its theory "as proven fact" (3, p. 167). The growing ranks of sociobiologists, whose members now include over 250 scientists and scholars from institutions such as Harvard, Columbia, the University of Chicago, and the University of Michigan (67, p. 54), indicate that sociobiology

may be more of a movement, the destiny of which may be to gather the social and biological sciences under its banner. For a somewhat optimistic description of this destiny, see Ellis (23).

It is sociobiology's promise of unification from which much of its appeal stems (46). According to Harvard physicist Gerald Holton, it is "as if Sigmund Freud had set out to subsume all of Darwin, Joyce, Einstein, Whitehead, and Lenin" (67, p. 54). By pulling together concepts from ecology, ethology, demography, neurophysiology, population genetics, cellular biology, and physiological psychology, it may well be the "new synthesis," or, as some sociobiologists are wont to claim, "the completion of the Darwinian Revolution" (67, p. 55).

The allure of the all-embracing is not, however, the only appeal of sociobiology: many scientists are especially impressed with its reductionism, its simplicity, and its precision. Following the argument of Ellis and others that major scientific breakthroughs are, historically, of a reductionistic nature (23, p. 57), they are eager to discover the universals of human behavior and to seek out those parameters which can be applied to both termite colonies and labor unions, for example, with equal facility.

The Controversy Surrounding Wilson's Book

A somewhat more latent appeal of Sociobiology was quickly discerned by its opponents. Apparently disregarding the admonition attributed to Hume that one cannot derive an "ought" from an "is," they see in sociobiological theory a politically engendered advocacy of the status quo (2, 4, 55). The argument, they say, runs like this: if nature selects for those behaviors and cognitive traits that are adaptive, then society extant must be adaptive and therefore, superior. In a time when existing inequalities among social groups are a prominent concern anyway, Wilson's descriptions of the pervasiveness of male dominance in the animal kingdom does little to placate the advocates of women's liberation. His speculation that genetic differences between ethnic groups may run deeper than mere skin coloration (70, p. 550) arouses minority groups, and his focus upon the territoriality and the aggressive behavior of many species elicits cries of "Imperialism!" from some circles.

The vehement quality of this reaction may stem not so much from the uniqueness of sociobiology, but rather, from its legacy. Gould has pointed out that throughout recent history theories of biological determinism have been selectively applied to legitimate the status quo (27, 28, 29).

Sociologists are especially cautious of social Darwinistic, non-interference theories which, in Spencer's day, underscored the arguments of the *lassez faire* government. Specifically, the restrictive immigration laws in the early part of this century and the atrocities of the Nazi genocide in World War II have been, at least partially, attributed to the ideological implications of biological deterministic theory (3, p. 169). Even though other types of theory may also involve ideological biases--Sahlins (53) and Eckland (20), for example, point out that many of the same arguments leveled at sociobiology apply equally to theories of functionalism--Wilson's colleagues caution sociobiologists to "tread softly" in some of the more controversial areas such as sexual differences and genetic inequality of the races (24; 54, p. 55; 71).

As is inevitable in intellectual debates that tread upon political toes, the attack on Wilson's book has sometimes exhibited an *ad hominem* facet (65, p. 1151), with Wilson, along with "co-conspirators" Huxley, Shockley, Jensen, and Lorenz, being equated with Hitler (54, p. 55). Particularly vocal is a group of Cambridge scholars whose barbed counter-attacks emanate through the anonymity of an organization called the Sociobiology Study Group of Science for the People,

a group whose members include many of Wilson's erstwhile colleagues. The organization's birth in the wake of the publication of The New Synthesis prompted the author to claim he was a victim of "academic vigilantism" (68, p. 183).

The "vigilantes" assert that Wilson's statements exhibit his failure to separate out his personal and social class prejudices (2, p. 43; 4, p. 424). Although one member of the group, author of the first anti-sociobiology book to be released after Wilson's publication (67, p. 56), disavows any personal vendetta against Wilson, he feels that the book's theories reflect "the entrenched ideology of Western society: the assurance of its naturalness and the claim of its inevitability" (53, p. 101). Others say sociobiology is the ideology of a "modern market-industrial-entrepreneural society" (65, p. 1155) or, more succinctly, "genetic capitalism" (53, p. 72).

Although labeling a theory as capitalism is not intrinsically a form of scientific reproval, Wilson's opponents stress the negative side of that label when applying it to sociobiology. They see capitalism as selfish, aggressive competition for economic (or biological) survival; the adaptive human being in such a system becomes a greedy, egoistic utilitarian, whose every action is based upon cost-benefit

formulae. According to this scheme, say Wilson's critics, natural selection is tantamount to social exploitation (53, p. 73).

Under any scheme of exploitation there are winners and losers. The winners, in this instance, happen to be the economically privileged, the elite. For them, sociobiology is akin to a double-edged sword, both legitimizing their elite status and providing a tool for the manipulation of social class, perhaps through eugenics (24, p. 737). Wilson's status as a scientist at an elite Ivy League university is, therefore, suspect among those who fear that ruling-class interests monopolize science's pursuit of power (3, p. 164).

The passionate nature of this ad hominem attack suggests something running deeper, below the political and intellectual currents. It suggests, as Sahlins points out, "some kind of deep relation between the theory of human action advanced by sociobiology and the self-consciousness Westerners have of their own social existence" (53, p. xiii). Perhaps this self-consciousness is at the heart of the attack upon Wilson, Darwin, and even Skinner, whose theories tend to diminish man's unique status in the animal kingdom, a uniqueness often claimed by the critics of extreme determinism (35). Such critics pose significant questions: Can any

theoretical scheme of human behavior ignore such treasured human concepts as "purpose" and "mentality" and remain viable (64)? Do such theories rob mankind of its humanity (4, p. 464)? Can Western societies ever accept the idea that social progress is ultimately a question of genotype?

The answers, say some scholars, undermine the moral and ethical standards upon which civilizations are built and posit in their stead irrefutable definitions of good and evil (71). Wilson's promise to "explain ethics and ethical philosophers . . .[at all depths] emphasis added " (70, p. 3) borders on heresy for some; others see it as the seed of a "new morality" which seeks to anchor human values in the natural world (16).

Thus, the controversy is a multi-faceted phenomenon. It exudes clouds of intellectual, political and socio-economic debate. Because of the implications of sociobiology for other than academic questions, the debate has raged both within the university and beyond it. Behind the "walls of ivy" scholars in the different disciplines are accusing biologists of disciplinary imperialism, and even within departments the lines are being drawn. From without come the cries of the Left--women's rights advocates, minority leaders, anti-militants and anyone with a vision of social

change. In a more peaceful and stable decade Wilson's Sociobiology might have fared better. On the other hand, in such a decade it might have been altogether ignored.

The Historical and Intellectual Context

One of the reasons for the appearance and widespread appeal of sociobiology during the 1970's is the recent re-interest in bio-deterministic and, especially, evolutionary theory (47). Klopfer points out that the past twenty years have witnessed the re-emergence of what he calls "the earlier 19th Century style of theorizing, i. e., the effort to explain human social phenomena through extrapolations from selected animals" (35, p. 77). Within the past decade, says Gould, "we have been deluged by a resurgent biological determinism" (28, p. 21); and, he continues, the reasons range from politics to economics: from a desire to escape responsibility for the current dilemma to a "pedestrian pursuit" of high royalties (28, p. 21).

Particularly annoying to Gould in this economic quest are those purveyors of what he terms "pop ethology" (28, p. 21). Surely no paradigm ever received a setback in the pursuance of intellectual hegemony by appealing to popular audiences, and biological determinism has been a recent best

seller. Ardrey (5, 6), Coon (14), Lorenz (41), Montagu (44), Morris (45), Storr (56), and Tiger and Fox (57) have provided the paperback market with best-sellers which may have helped convince the literary masses that aggression, territoriality, and race/sex differences are the inescapable inheritance of today's most evolved primate.

The recent appeal of evolutionary and ethological theories has not been confined to lay audiences and "pop" authors, however. Within the field of academic biology a re-awakening of interest in Darwinian principles has taken root. Ever since Konrad Lorenz drew attention to the field of ethology in the 1950's, biologists have become increasingly concerned with behavior as a product of evolution (22) and have begun to re-analyze Darwin's writings to glean the social and behavioral aspects (30). They have been intrigued by the idea of discovering what might be called the "human biogram," the biological constants of human behavior.

On the one hand, there are those radical biologists who see human behavior as only quantitatively different from the behavior of other animals (15, 18); on the other hand, there are those who, while stressing the evolutionary and biological bases of behavior in animals, shy away from strong statements about Homo sapiens (1, 10). Finally, one

group of scientists believe that human ethology may have only limited application, giving a basis for, but not replacing, the study of man's emergent qualities (25).

In light of biology's encroachment upon the traditional ground of the social sciences, some observers have urged the latter to utilize, or at least accomodate, the prevailing winds of bio-evolutionary theory (40), especially since social science's conventional paradigms could ostensibly profit from a little outside bolstering (8, pp. 4-5; 23, p. 57; 38, p. 73). As such, there have been several recent efforts to introduce bio-evolutionary theory into anthropology (51), social psychology (11), and sociology (60).

Sociologists, at least, have not been altogether incognizant of their past neglect of the biological constraints upon behavior (37, pp. 69-71; 58, p. 705; 61, p. 75). As part of the recent trend some have taken renewed interest in Herbert Spencer's work (48), and others have begun to discern the evolutionary slant of eminent thinkers such as Durkheim (34) and Veblen (21). Formalizing this trend, sociologists have initiated the publication of biology-related journals such as Social Biology to give emphasis to studies along this line, and a new scientist has appeared in the form of the "biosociologist." These sociologists, including

within their ranks Pierre Van den Berghe (61), Allen Mazur (42), Alice Rossi (50), and John Kunkel (37), have tried to re-orient sociological research toward an inclusion of biological variables. Perhaps, they realize that biologists like Wilson cannot be held in abeyance much longer.

It is within this climate of a re-awakening of bio-evolutionary theory that Wilson's book appeared. Although the name Sociobiology tended to ring of novelty, most of the data that Wilson relied upon are not new. The author was the first to admit this, but he has pointed out that what is new about his particular brand of sociobiology is

> . . . the way facts and ideas are being extracted from the traditional matrix of psychology and ethology (the natural history of animal behavior) and reassembled in compliance with the principles of genetics and ecology (68, p. 39).

Like the title suggests, what is new is, perhaps, the synthesis of ideas.

Like the emergence of new paradigms, this new synthesis is, in some degree, a response to an intellectual crisis in existing biological paradigms: the problem of altruism. Wilson was not the first biologist to note that altruism, despite its self-destructive aspect, seems to have been favored by natural selection. Darwin had noticed this:

> When two tribes of primeval man, living in the same country, come into competition, if . . . the one tribe included a great number of courageous, sympathetic, and faithful members, who were always ready to warn each other of danger, to aid and defend each other, this tribe would succeed better and conquer the other (43, p. 163).

In the earlier part of this century Kropotkin (36) and Haldane (31) had made similar observations; like Darwin, they were perplexed as to how, specifically, courageous and altruistic tribesmen could, as individuals, survive and reproduce better than cowardly, egoistic tribesmen.

One response to this dilemma was to enlarge the focus of natural selection to the group. If the unit of genetic response to external forces is the animal population as a whole, an assumption favored in Wynne-Edwards' classic work, then behavior performed for the good of the group is adaptive. Critics of this position quickly pointed out, however, the difficulty in positing such a claim since reproduction is, in at least the strictest biological sense, an individual matter (12).

The solution to this problem was first formalized by Hamilton in 1963 (32) and later elaborated by West-Eberhard (66). Coining the term "inclusive fitness" Hamilton reasoned that group selection and individual egoism, far from being opposed to one another, are in fact different aspects

of the same process. If one assumes, say, that an altruistic animal, by his own self-destructive behavior, increases the reproductive success of his genes by enhancing the reproductive success of his kin, who carry a fraction of his genes, then the dilemma would be solved. Social altruism could henceforth be redefined as genetic egotism. Hamilton even derived the formula used, supposedly, by the genes to calculate the cost and benefit of any altruistic act if the degree of genetic similarity of the recipient were known (33). Trivers' and Hare's landmark study on ants gave empirical support to Hamilton's formula (60).

The concept of inclusive fitness was further extended by Trivers to include non-relatives. This extension, called "reciprocal altruism" (59), explains how organisms might act altruistically toward strangers if the latter could be expected to reciprocate the act at some later date. Trivers' and Hamilton's concepts are at the heart of Wilson's "new synthesis."

A final note concerning the socio-historical context of Sociobiology comes from Wilson himself. Why, he asks, did it take men so long to recognize the genetic basis of their behavior? Why have men failed until recently to make the ultimate reduction? According to Wilson,

> The biologist . . . realizes that self-knowledge is constrained and shaped by the emotional control centers in the hypothalamus and limbic system of the brain . . . [which] automatically denies such logical deduction by countering it with feelings of guilt and altruism. In this one way the philosopher's own emotional control centers are wiser than his solipsist consciousness, "knowing" that in evolutionary time the individual accounts for almost nothing (70, p. 3).

One is tempted to wonder how Wilson, out of all others, was chosen by the genes to be their revelator.

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CHAPTER II

E. O. WILSON'S SOCIOBIOLOGY: THE BASIC ASSUMPTIONS

Introduction

The fundamental tenets of any particular scientific perspective do not necessarily protrude conspicuously from the morass of details and examples surrounding them. Even when stated explicitly, they are often immersed in a qualifying context which renders them inextricable. Often, they must be inferred by logical extrapolation; sometimes, one must read volumes in order to construe one simple statement.

Even if authors such as Wilson try to state their positions as succinctly and unarbitrarily as possible, audiences reacting to their works seldom agree wholeheartedly on what has been written. Generally, the dialectic between author and audience is constructive, helping to more clearly define the basic issues while separating them from the supplementary ideas. Seldom, however, do author and audience feel totally satisfied with the results of any compromise.

It is not rare, therefore, that the influence of great writers such as Freud, Durkheim, and now Wilson, is different

from what might have been originally intended by each. Nevertheless, the societal reaction to a scientific work remains a social fact, a fact which may be analyzed and evaluated. For example, Fairlie has concluded that the popular conceptions of Freud's ideas, although obviously different in vital ways from what Freud actually wrote, have played an important role in shaping the attitudes of the post-World War II generations (14, pp. 28-31).

It is hoped that the following chapters will not help to misconstrue Wilson's ideas; but rather, by presenting the basic sociobiological issues as they have emerged from the interchanges between Wilson and his interpreters, they will enable the reader to more fully comprehend the complexity and the implications of Wilson's thought. Unfortunately, most sociologists will not become acquainted with sociobiology through careful scrutiny of The New Synthesis. Instead, most will rely upon the continuing exchange between the "pro-Wilsons" and the "anti-Wilsons" (and those in between) as revealed in behavioral journals. Therefore, the following discussion relies both upon Wilson's statements and the arguments they have ignited.

How Much Determinism?

Determinism, it would seem, is the very core of science. Without at least the assumption of predictable patterns of cause and effect, the entire foundation of the scientific method sensu stricto collapses, leaving a universe of capricious variables in chaotic interaction. Yet, even scientists are wary of overly mechanistic and radically deterministic schemes, preferring, even within the realm of physics (commonly regarded the "purest" of sciences) to adhere to the Principle of Uncertainty (7, pp. 356-367). Especially in the behavioral sciences is this retreat from total determinism manifest. Here, probability models are employed to distinguish patterns of human behavior while allowing a margin of error in which the actor can presumably retain some measure of autonomy.

Radical determinism, whether natural or "nutural," has been largely untenable to reputable scholars (16). Strict determinism tends to imply simplistic absolutes which scientists qua scientists can ill afford to espouse. Just as radically deterministic biologists have been reproached by the behavioral sciences, so, too, have sociologists who readily accept "rampant environmentalism" been the target of eclectic critics (27). Alper, for example, has pointed

out that while biological determinism places human beings at the mercy of eugenic manipulators, radical cultural determinsim of the Skinnerian genre opens the door to totalitarian practices which exploit the "infinite plasticity" of human behavioral patterns (3, p. 170).

Bearing in mind these pitfalls, successful sociobiologists will probably develop a more moderate stance on the question of the degree of determinism; but at present, sociobiology incorporates both the extremely radical perspective of De Vore (12) and the more compromising appeal of Barash (4). Since Sociobiology: The New Synthesis is the focus of this thesis, it is imperative to understand the position of Edward O. Wilson on this issue. His use of terms such as "prime movers of social evolution" and "genetic control" and his discussion of genetic prescription of behavior and biological constraints imply a strongly deterministic undercurrent. Is Sociobiology just "another biological determinism" (25), or is there room for the interplay of variables on several levels of analysis? Just how strong is the "single strong thread" that runs from the conduct of termite colonies to the social behavior of man (38, p. 129)?

To begin with, Wilson states that

> There is no doubt that the patterns of human social behavior are under genetic control, in the sense that they represent a restricted subset of possible patterns that are very different from the patterns of termites, chimpanzees and other animal species (38, p. 38).

To use Wilson's example, if responses "A" through "W" are actually possible for man, then one might find responses "A" through "P" in actual use throughout the empirical world. Of this latter subset it is, say, only "A" through "F" that have a tendency to appear. Therefore, this final restricted range of behavior patterns is what is inherited through the genes (34, p. 46).

Although Wilson refers to such phenomena as "conformer genes" (38, p. 562) and "upward-mobile genes" (38, p. 554), he nevertheless maintains that

> What genes prescribe is not necessarily a particular behavior but the capacity to develop certain behavior and . . . the tendency to develop them in various specified environments (34, pp. 46-48).

The more specified, or stable, the environment, the greater the effect of genetic constraints. In the relatively stable environment of most animal species, the influence of the genes is predominant; but in the rapidly evolving and highly diversified cultural environment of modern industrial societies, the genes "have given away most of their sovereignty"

(38, p. 550). Due to the lack of competition from other species, and because man has, for the most part, long passed the subsistence level of living, a kind of "ecological release" has resulted in a wide range of phenotypic variation in behavior among modern Homo sapiens (38, p. 550).

Thus, the enormity of cultural diversification extant in the modern world poses no threat to sociobiological theory since, says Wilson,

> Ethnographic detail is genetically underprescribed, resulting in great amounts of diversity among societies. Underprescription does not mean that culture has been freed from the genes. What has evolved is the capacity for culture, indeed the overwhelming tendency to develop one culture or another (38, p. 559).

What is important, according to Wilson, in shaping human social interaction are the biological universals which make up the human biogram, those properties of animals that can be neither diminished nor increased. Although the genes still "maintain a certain amount of influence in at least the behavioral qualities that underlie variations in cultures" (38, p. 550), the specific content of culture is more nearly nongenetic and can be "decoupled from the biological system and arrayed beside it as an auxiliary system" (38, p. 560).

Finally, Wilson points out that genetic determinism provides the foundation of human theoretical constructions

(his own included, apparently). He says that "self-knowledge is constrained and shaped" by the hypothalamic-limbic system in the brain, which has evolved by natural selection (38, p. 3). This system "'knows,'or more precisely, it has been programmed to perform as if it knows" how to effect maximal adaptation for the genes (38, p. 4). As a result the emotions, the consciousness, the religious institutions, the political ideologies, in short, the "ethnographic details" are developed to this end. They may vary greatly; they can conflict with one another; they can presume to ignore their genetic basis; but, they can never run counter to the genes' purposes without eventually disappearing via negative selection.

What degree of determinism is implied by Wilson and what degree is inferred by various interpreters of his work lack congruence, to say the least. Although Wilson repeatedly avers that he is <u>not</u> a biological determinist (34), Gould states that "biological determinism is the primary theme" in Wilson's text and that his discussion of human behavior "makes no sense in any other context" (16, p. 17), a point with which Alper agrees (3, p. 168).

Specifically, Gould is referring to a common point of misunderstanding between Wilson and his readers: the implied

one-to-one parallel between genes and behavior. Due, perhaps, to Wilson's use of phrases such as "genes causing altruism" (38, p. 3) and "genes that favor indoctrinability" (38, p. 562), this misunderstanding solicits accusations that Wilson is treating behavior like human organs (2, p. 43). Biologists have long since dispensed with conceptions of "one gene for one toe," and considering the complexity added by volatile classifications of behaviors (the definition of "crime," for example), it would seem reckless to hypothesize the existence of genes causing altruism or upward-mobile genes. Others who have interpreted Wilson as a strict determinist have taken exception with what they believe to be his assumption of direct causal chains tying genes and behavior (3, p. 167) and his presumed implication that behavior has evolved in a direct, linear fashion (21, p. 79).

On the other hand, other readers of Sociobiology insist that the theories "need not rest on any premise of rigid genetic determinism of behavior" (13, p. 736; 22) and that sociobiology need not be a return to "crude instinctivism" (28, p. 733). Taking note of the extreme plasticity of behavior exhibited by many lower species, these moderate determinists emphasize the values of comparative biology, and they propose a kind of "marriage" between evolutionary

theory and learning theory (4, pp. 1-8). This moderately deterministic approach could prove to be more acceptable to social scientists.

Among advocates of the first position, the position that biological determinism is an integral part of sociobiology, are those who see the present dispute as merely a new enactment of the old nature-nurture controversy (3, p. 168; 13, p. 736; 16). Proponents of the moderate position, however, claim either that Wilson's theories have done away with the entire heredity-environment question (28, p. 733) or that, in light of sociobiology, "the old nature-nurture dichotomy is a false one" (23, p. 531). As they see it, "biology" and "culture" represent separate continua which run parallel, one within the other; biology is the basic internal factor around which culture evolves. Needless to add, some scientists are reluctant to give up the age-old debate (24, pp. 12-13).

In response to these various interpretations, Wilson has proved to be a more conservative determinist than some of his followers. First of all, says Wilson, he did not mean to imply that there is <u>one</u> gene controlling <u>one</u> behavior (31, p. 187), for even the simplest behaviors are polygenic in origin, the result of the interaction of an unknown

number of genes. To placate social scientists like Blute, who contends that genetic extrapolation cannot account for the great majority of cultural and social traits (6, p. 628), Wilson concedes that sociobiology is most useful when comparing inter-species phenomena (34, p. 49).

Wilson's appeasement of the social sciences goes further, however. In the forward of Barash's Sociobiology and Behavior, a text designed to "present the essential themes of sociobiology in a manner that will be both palatable and informative to students in the behavioral sciences" (4, p. ix), Wilson states that human behavior is "dominated by culture" (33, p. xiv). In an article for The New York Times Magazine Wilson further loosens the deterministic grasp of sociobiology (and, incidentally, seeks to quell the wrath of his politically liberal critics) by emphasizing that the genetic basis of behavior cannot be used to justify existing situations, since genetic bias can be redirected and even bypassed (34, p. 50). Wilson cites several instances in the animal kingdom in which the genes have apparently been "fooled" (38, pp. 125, 352, 374-376, 512). For example, the "adoption" of a past mate's offspring by a female may "fool" her present mate into caring for them; he enhances the genetic fitness of these offspring, although they do not share common genes with him.

Finally, in an interview given to the Harvard Crimson, Wilson makes his most famous qualifying statement, saying that "perhaps only 10 per cent" of human behavior is actually under genetic control (36, p. 2).

Critics have pounced upon this latter statement. Alper has pointed the impossibility of isolating the genotypes from the environment and claims that "it makes no sense to speak about the magnitude of the genetic component of a phenotype" (3, p. 168). Similarly, Sahlins satirically refutes the idea that behavior can be broken down into a "compound of ten per cent biology, five per cent physics, three per cent chemistry, 0.7 per cent geology, 0.3 per cent the action of heavenly bodies and 81 per cent the symbolic logic" (24, p. 65). This ten per cent limitation of biology upon culture is akin to the physical limits upon biology, according to Sahlins. Using his example,

> . . . gravity constitutes a limit to biological forms: every life stage in the life history of every species has to conform to it, and any mutation that might seek to do otherwise does so at its peril. But a limit is only a negative determination; it does not positively specify how the constraint is realized . . . such limits explain nothing of the differentia specifica of life forms, but only the failure of them to exceed certain tolerances . . . physical and chemical laws stand as absolutely necessary for the explanation of biological phenomena, but they are equally and absolutely insufficient. The same . . . holds true for culture vis-a-vis biology (24, pp. 64-65).

Gould infers a similar notion from Wilson's statements:

> If genes only specify that we are large enough to live in a world of gravitational forces, need to rest our bodies by sleeping, and do not photosynthesize, then the realm of genetic determinism will be relatively uninspiring (16, p. 18).

Has Wilson relegated the genes to such an "uninspiring" position? Probably not, for even though the genes have given up most of their "sovereignty," the ten per cent they retain includes what are perhaps some of the most important features of human interaction (see next section). While sociobiology may not be able to account for the infinite variety of sociocultural traits, Gray argues that it may try to show that such details "are not a major creative force in human social behavior . . ." (17, p. 3). More importantly, according to Gray, sociobiologists may suggest that "where cultural instructions conflict with behaviors motivated by considerations of inclusive fitness the latter will occur and the cultural instructions will be ignored" (17, pp. 3-4). Therefore, even if only a small portion of human social behavior is under direct genetic influence, that proportion may be the keystone in the human behavioral arch, without which the entire structure would crumble.

The Human Biogram

Wilson calls this biological keystone the "human biogram" (38, p. 548), general traits of the species consisting of "behavior and rules by which individual human beings increase their Darwinian fitness through the manipulation of society" (38, p. 548). These traits include plasticity of social organization; barter and reciprocal altruism; bonding, sex and the division of labor; role playing and polytheism; communication; culture, ritual and religion; ethics; esthetics; and territoriality and tribalism (38, pp. 548-565).

According to Wilson, the first of these traits, plasticity of social organization, may have evolved through the selections of "genes promoting flexibility" (38, p. 549). Theoretically, two cultures which enjoy a similar amount of Darwinian fitness may exhibit overtly dissimilar traits, since the ecological release afforded man has given rise to the possibility of "multiple adaptive peaks" (38, p. 549). Still, Wilson maintains that genes "maintain a certain amount of influence in at least the behavioral qualities that underlie variations between cultures" (38, p. 550).

This last statement has aroused the suspicion among some scholars that Wilson's theory gives credence to arguments of racial inequality (30). Although Wilson denies

this (31), even the conjecture that genetic differences underlie behavioral differences in, say, blacks and whites, is not likely to win support in a country bent upon the eradication of inter-ethnic group prejudices.

Other critics of this plasticity trait point out that hypothesizing the existence of "genes promoting flexibility" is useless, since any witnessed behavior could be interpreted as evidence of their existence (16, p. 18). It is tantamount to saying, as Simone de Beauvoir has said, that man is "the being whose essence lies in having no essence" (16, p. 22).

As if to answer the request for specificity, Wilson has attempted to delineate probable forms of social organization inherited by modern man from his evolutionary ancestors. Among the traits most likely to have persisted because of genetic factors are small group size, male dominance, general territoriality, game playing, and prolonged maternal care (38, p. 568).

In a further attempt to specify evolutionary traits of human beings, Wilson categorizes animal behavioral traits as being either labile, meaning variable at the taxonomic level of species or genus, or conservative, meaning uniform throughout the class. Labile traits include group size and group

cohesiveness, involvement of male in parental care, attention structure, and intensity/form of territorial defense; conservative traits include aggressiveness and male dominance, the scaling of responses, prolonged maternal care, and matrilineal social organization. Although Wilson makes no definite statements about the degree of genetic influence in either type of trait, he does maintain that conservative traits "are the ones most likely to have persisted in relatively unaltered form into the evolution of Homo" (38, p. 551) and that labile traits "are the ones most likely to differ from one human society to another on the basis of genetic differences" (38, p. 551).

These conservative and labile traits hypothesized to be genetically influenced are general in scope; yet, both Wilson's critics and his advocates have extrapolated numerous ramifications. For example, some of Wilson's readers conclude that factors which naturally select for reciprocal altruism also favor deceit, hypocrisy, spite, and family chauvinism (25, p. 184). Others suggest that Wilson's argument for the genetic basis of assuming "broad roles" (38, p. 555) implies that homosexuality is strictly inherited (2, p. 43). In Wilson's discussion of ritual behavior as part of the human

biogram, critics seem to abhor the assumed emphasis that man is a born conformer, easily indoctrinated and led by "blind faith" (25, p. 184).

As general traits, territoriality and tribalism seem to have some of the most negative connotations. Do such traits predispose mankind to aggressive, competitive behavior? Some readers feel that, using Wilson's schema, warfare, slavery and genocide are adaptive for the genes and, thus, natural and inevitable (25, p. 184). Wade reports that some groups of Wilson's audience believe this latter aspect of Sociobiology to be "dangerously racist" (29, p. 1155).

Surely, however, the most complex and far-reaching implications stem from Wilson's hypothesized traits clustered about sexual behavior: male dominance, male parental behavior, bonding, and the sexual division of labor in general.

The genetic root of the sexual division of labor is illuminated in Wilson's theory of parental investment (38, pp. 324-326). Briefly, this theory states that the female, having more limited supplies of gametes, invests more energy with each conception than does the male. Being more likely to mate than the male, she increases her inclusive fitness by remaining monogamous, by adequately spacing subsequent births, and by balancing her time and nurturance among her

children and herself. The male, on the other hand, increases his inclusive fitness by "tying up" as many females as possible, since his initial investment of energy is low. However, his chances of mating are less than the female's because of intra-species competition from other males.

Does this mean that men are inherently polygamous, competitive, domineering, and territorial or that women are innately monogamous, nurturant, possessive, and sedentery? Expanding upon this theory, other researchers have said that it accounts for the double standard surrounding adultry (5, pp.195-196; 8, pp. 46-47), the patrilineal inheritance of wealth (18), the relatively reduced amount of parenting behavior among males (5, p. 204), the scarcity of polyandry (5, p. 207), parent-offspring conflict (26), and the probable origin of complex linguistic practices among women's groups (19).

Although Wilson does not necessarily agree with all of the above interpretations of the sexual division of labor, he does believe that such a division is a strongly and continuously influential aspect of human life. Says Wilson,

> The genetic bias is intense enough to cause a substantial division of labor even in the most free and most egalitarian societies. Even with identical education and access to all professions, men are likely to continue to play a

> disproportionate role in political life, business and science (34, p. 50).

However influential the human biogram may prove to be in the ascription of human social traits, it will leave much unanswered. As Blute discerns, "the majority of traits of a majority of organisms cannot be unambiguously predicted from breeding experiments using Mendel's simple laws" (6, p. 728). Until the time that biology can effectively explain the "ethnographic details" of a given culture, sociology can pursue the analysis of most social behavior unencumbered by their lack of training in mathematical genetics.

Society and Culture

In promulgating a working vocabulary for sociobiologists, Wilson defines society as a "group of individuals belonging to the same species and organized in a cooperative manner" (38, p. 7). He later emphasizes an aspect of societies first expressed by Altmann: that individuals in a society are intercommunicating and that society is "bounded by frontiers of far less frequent communication" (1). Although this definition may seem too broad for sociological purposes, it must be remembered that Wilson is attempting to apply his definition to all animal species. Since Homo sapiens falls within this category, it would appear that Wilson considers the definition

suitable, at least at some levels of analysis, for human societies.

If Wilson's definition appears liberal, his descriptions of society are more reserved. In alluding to the difficulties of predicting social behavior, for example, Wilson states that "a society can be described only as a set of particular organisms [emphasis added]" (38, p. 7). To some readers this statement is antithetical to Durkheimian sociology: Alper, for example, says that Wilson "assumes that societies merely reflect the sum of behavior of individuals and . . . ignores the effects of interactions among people" (3, p. 167).

Perhaps in response to critics like Alper, Wilson has stated flatly that not all properties of society are reducible to individual behavior: says Wilson, "advanced literate societies . . . [are] likely to display emergent properties not predictable from a knowledge of individual psychology alone" (32, p. 137). Even in the first chapter of The New Synthesis, Wilson alludes to the emergent properties of society, such as social drift, the multiplier effect, and kinship systems (38, pp. 11-19). Therefore, the question is not so much whether or not society is merely the sum of its individual members, but rather, whether or not the emergent properties are pertinent to the study of social organization.

"Social organization," according to Wilson, "is derived jointly from the behavior of individuals and the demographic properties of the population" (38, p. 11). Here Wilson seems to be stressing that individual behavior and properties reducible to individuals (sex and age distribution, for example) are the most important parameters of social structure. In fact, Sahlins discerns the central thesis of Wilson's sociobiology to be that "individual reproductive success . . . [is] the mainspring of social behavior (24, p. 18), a statement with which Wilson apparently agrees (33). Therefore, Gray says that although Wilson makes allowances for emergent properties of societies, he relegates them to a minor role in shaping human social behavior (17).

As to the origin of society, Wilson espouses what is commonly termed the "autocatalysis" model in the following form: Homo sapiens became bipedal as a terrestial adaptation, freeing his hands, which made tool manufacture and use easier. Mental ability increased with tool use, creating a materials-based culture enhanced by mutual cooperation (38, pp. 567-568). Natural selection favored those who exhibited inclusive fitness, and hunting groups and family units arose as the seeds of advanced societies (38, p. 8). Although the particulars of this scheme are subject

to criticism on teleological grounds--the "social contract" implication of this model, for example, or Wilson's concurrence with Jolly (20) that man became bipedal in order to pick seeds--they are not necessary to the basic argument that altruism, evolved by natural selection, is the root of sociality.

Critics of this point of view say that however society got started, once begun it has evolved at a seemingly accelerating pace which cannot be explained by biological, evolutionary models (3, 9, 25). Further, the Lamarckian character of cultural evolution is antithetical to the slow and random change brought about be the accumulation of genetic aberrations (3, p. 171).

Rapid cultural or behavioral change is not problematic for Wilson, however. To account for it he postulates the "multiplier effect," by which "a small evolutionary change in the behavior pattern can be amplified into a major social effect by the expanding upward distribution of the effect into multiple facets of social life" (38, p. 11). This process can speed evolution, especially by means of socialization, and exaggerate variation of individual behavior (38, pp. 12-13). There is no doubt, says Wilson, that evolution is "more cultural than genetic" (34, p. 42).

However, culture is not necessarily a primary force in shaping human social behavior, according to Wilson. "Culture," states Wilson," . . . can be interpreted as a hierarchal system of environmental tracking devices" (38, p. 560). Briefly, these devices are responses of the organisms to changes in the environment which allow the individual to adapt but "are not fundamental properties of organisms around which the species must shape its biology" (38, p. 145).

To understand what may be, by now, a confusing aspect of Wilson's theory of culture, it is necessary to distinguish between what Wilson might call "cultural manifestations" and his idea of the essence of culture itself. On the one hand, there are the more nearly nongenetic aspects of culture, inculuding what Wilson refers to as "ethnographic detail." Such details include "the more resplendent manifestations of ritual and religion" (38, p. 560) and are genetically "underprescribed" (38, p. 559). To the extent that they are nongenetic, these particulars of culture can be "decoupled" from the aforementioned "fundamental properties of organisms" and "arrayed beside it [the biological system] as an auxiliary system" (38, p. 560). Thus, Gray writes that Wilson and other sociobiologists may try to demonstrate that

these underprescribed aspects of culture are "mere reflections of the social system and that social systems themselves are based upon considerations of reproductive advantage" (17, p. 3).

On the other hand, the aspect of culture which is more nearly genetic, that part which has evolved by natural selection, is the "capacity for culture, indeed the overwhelming tendency to develop one culture or another" (38, p. 559). This idea may be hard for most social scientists to argue with: obviously, culture requires certain basic, biological prerequisites (high intelligence, for example) and, too, much sociological analysis assumes, at least implicitly, the Aristotelian idea that man is basically a social animal.

Yet, Wilson seems to imply the genetic basis of more than a single trait, that is, the capacity for culture. For example, he concurs (38, p. 559) with Fox's assumption (15) that in lieu of any outside cultural influence, human beings would necessarily develop language, property laws, incest and marriage taboos, religion, social hierarchies, a sexual division of labor and communication, mental disorders, crime, and a myriad of other behavior patterns which are recognizable in today's world (38, p. 560).

Thus, Wilson apparently believes that the basic capacity for culture is genetic and that, in developing this capacity, human culture and social organization inevitably follow broad limits of behavior, the evolution of which is based upon calculations of genetic advantage. He further suggests that, for the most part, even the detailed manifestations of these broad patterns display Darwinian fitness (38, p. 560). Even though Wilson says socio-cultural evolution is mostly nongenetic (34, p. 42), his continuing de-emphasis of the nongenetic aspects of culture and social organization as creative forces in social behavior elicits a response, common among social scientists like Sahlins, that sociobiology refuses to treat culture (or social structure) as a "thing-in-itself" (24, p. x).

Human Nature and Human Ethics

In its attempt to outline the extent of genetic determinism in human social interaction, Sociobiology invites the criticism of those who feel that the theory robs man of his autonomy, his self-awareness or, more simply, his humanity (30). Although the more radical proponents of Wilson's theories, such as Dawkins, blatantly strip the human being of personal autonomy with statements that "we

are survival machines--robot vehicles blindly programmed to preserve the selfish molecules known as genes" (10, p. ix), Wilson himself draws considerable criticism from humanistic scientists by referring to human beings as "part of an elaborate device to spread genes" (38, p. 3).

Typically, it is not easy for the individual to attribute his behavior, even so-called "altruism," to a basic "genocentric" selfishness, especially a selfishness which evolution has worked against becoming conscious (38, p. 3). Neither is it especially self-enhancing for the individual to see mankind's cherished emotions--love, hate, fear, and sympathy--as genetically contrived devices which "flood the consciousness of the individual organism whenever stressful situations arise" (38, p. 4).

Wilson asserts that the function of emotion is not to promote individual happiness but to maximize transmission of the controlling genes (34, p. 42). He further emphasizes that the evolution of emotions by natural selection is the very underpinning of human social evolution (38, p. 4). To accept the nature and function of emotions as revealed by sociobiologists would require that audiences re-evaluate some of the more lofty ideas about their existence. Says Wilson, "We are likely to see some of our most

exalted feelings explained in terms of traits which evolved. We may find that there is an overestimation of the nature of our deepest yearnings" (30, p. 57).

To some, Wilson's seeming deflation of man's sense of autonomy has serious ethical consequences. Davis, for example, believes that sociobiology contradicts the argument for moral relativism (9, p. 95), and Alper says it does away with any kind of philosophical question (3, p. 169). Wilson does not deny that sociobiology might set forth provocative implications for ethics; indeed, he says that the time has come "for ethics to be removed temporarily from the hands of the philosophers and biologicized" (38, p. 562). According to Wilson, ethical premises have been "programmed" into the organism by means of natural selection in order to promote inclusive fitness (35), and man-made attempts to alter appreciably this innate code of conduct, especially those attempts to apply rules uniformly to all age and sex categories, might rob the phenotypes of their "Darwinian edge" (37). Since what is adaptive for the individual's genes varies according to his or her age/sex category, sociobiology calls for a scheme of moral pluralism based upon the consideration of demographic variables (38, pp. 563-564).

According to Des Pres, this "new morality," far from stripping man of his autonomy, would help to anchor man's ethics within definite biological limits, within which the individual would be able to confidently set realistic goals (11). Sociobiology will provide ethics with what Des Pres calls an "empirical foundation for a concrete humanism" (11, p. 47).

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CHAPTER III

SOCIOBIOLOGY AND SOCIOLOGY

Wilson's Familiarity with Sociology

Sociologists should not, perhaps, judge Wilson harshly by close scrutiny of his social science background. He is, after all, an entomologist, obviously one with a rich and diversified knowledge of even the peripheral areas of biology. If he could not give a detailed account of Parsonian action theory, then surely few sociologists could describe the mating behavior of Drosophilia serrata. However, since Wilson's unfolding of his theory makes substantive claims about both the present and the future of sociological thought, he must, as must any scientist, be held accountable for his writings.

According to Eckland, Wilson's knowledge of sociology is limited:

> Wilson is not ignorant of this area [sociology], but selective and biased. On the evolution of social organization and behavior in human societies, it is apparent that he has read Homans, Parsons, Levi-Strauss, Goffman, Weber, and Durkheim. It is also apparent that he understands structural functionalism. The theory of natural selection is itself directly analogous to functionalist theory as employed by sociologists, and Wilson applies it well in seeking the functional

> similarities among societies within and across phylogenetically diverse species in order to reveal evolutionary rules of universal application (10, pp. 695-696).

Although Eckland discerns Wilson's strengths in sociology, he decries Wilson's ignorance of sociological methodology, including "causal modeling, multivariate analysis, sampling, measurement theory, tests of significance and the like" (10, p. 696) and his lack of familiarity with the empirical work of sociologists. Indeed, the findings of even biosociologists appear nowhere in Wilson's weighty bibliography.

Other sociologists have been even more disgruntled than Eckland about the sparseness of Wilson's social science background (5, pp. 728-730; 29, p. 702). Mazur has commented that "his Wilson's major sociological source appears to be Gerhard and Jean Lenski's introductory textbook" (20, p. 698).

Although Wilson's references in Sociobiology show that he is somewhat acquainted, as Eckland has pointed out, with the works of Durkheim, Weber, and Parsons, these references are not generally to major works by these authors. His use of Durkheim's thought is limited to the latter's emphasis of ritual as an affirmation of values (38, p. 561); his only mention of Parsons concerns the action theorist's definition of money as what Wilson calls "reciprocal altruism" (38, p.

553). Of the three theorists mentioned above, only Weber merits a citation to one of his major works, The Sociology of Religion, which Wilson utilizes to support his characterizations of primitive religion (38, p. 561).

Wilson is, perhaps, best acquainted with Goffman and his dramaturgical sociology. The discussion of human roles in Sociobiology is remarkably parallel to the concepts developed by Goffman in The Presentation of Self in Everyday Life (38, pp. 312-313, 553-554). Apparently Wilson is especially intrigued with the dramaturgical explanation of how strangers "size up" one another's roles in order to act out the most advantageous reciprocal role. He quotes Goffman to point out that individuals have ample opportunity for deceit and hypocrisy which might net them increased genetic fitness (38, p 553).

Wilson also makes reference to non-sociologists (strictly speaking) whose works have influenced social theory: anthropologists Levi-Strauss (38, pp. 553,559) and Mead (38, pp. 159, 201), psychologist Maslow (38, pp. 281, 550-551), social psychologist Homans (38, pp. 550-551), and linguist Chomsky (38, pp. 202, 558-559). His only other strictly sociological reference is to Ogburn and Nimkoff's Sociology, another introductory textbook (38, p. 573).

References in a bibliography are not the best method of determining the intellectual background of an author. Wilson's grasp of sociology is necessarily limited; but, in defending his theories against the criticism of present sociologists, he will likely become acquainted with the general aspects of any sociological concept pertinent to sociobiology.

Wilson's View of Sociology

In his article "Biology and the Social Sciences" Wilson states that although sociology should be the queen of the social sciences, "I personally find it the most alien and least interesting" (37, p. 136). In Sociobiology Wilson defines sociology as the

> study of human societies at all levels of complexity . . . [which] is most successful, in the way taxonomy and ecology have been successful, when it provides a detailed description of particular phenomena and demonstrates first-order correlations with features of the environment (38, p. 4).

Sociology, says Wilson, "stands apart from sociobiology because of its largely structuralist and nongenetic approach" (38, p. 4). The relationship between the two disciplines is a "special adversary" one (37, p. 127), since sociobiology is a branch of biology, the "anti-discipline" of sociology (37, p. 127).

A discipline and its anti-discipline are two fields of study utilizing dissimilar methodologies and concepts but seeking to explain the same general phenomenon, in this case, the "deep structure of human nature" (37, p. 127). Disciplines and anti-disciplines incorporate "adjacent levels of organization" (37, p. 127), and the anti-discipline chooses units of the lower level. Its advocates "believe that the next discipline above can be reformulated by their laws" (37, p. 128).

Wilson cites several examples of historical precedents of discipline and anti-discipline confrontations, including cell biology and biochemistry, the latter being the anti-discipline of the former. To describe the relationship between sociobiology and sociology, it is necessary only to substitute these terms for "biochemistry" and "cell biology," respectively, in his description of the confrontation between the latter two fields:

> In general, biochemists [sociobiologists] judged the cytologists [sociologists] too ignorant of chemistry [biology] to grasp the basic processes, whereas the cytologists [sociologists] considered the methods of the chemists [biologists] inadequate to characterize the structures that diagnose the living cell [society] (37, p. 129).

The relationship, therefore, among chemistry, biology, and sociology is one of parallel adjacency: chemistry, the

anti-discipline of biology, seeks to explain biological data in terms of underlying chemistry. The same holds true for biology vis-a-vis sociology. A good scholar, says Wilson, "is a student of three disciplines: his discipline, the lower anti-discipline and the subject to which his specialty stands as anti-discipline" (37, p. 128).

As further evidence that biology is sociology's anti-dicipline, Wilson notes the past failure of the social sciences to develop a unified system of theory (37, p. 127). According to him, sociology is in what Northrop refers to as "the natural history stage" of scientific development (22, p. 36). The characteristics of this phase include the following: 1) research concerned with description and classification; 2) emphasis on novelty and detail; 3)holistic explanations; 4) a dualistic view of ones discipline; and 5) an emphasis on <u>extensive</u> research, the application of existing theory to the widest possible range of phenomena, instead of <u>intensive</u> research, the search for fundamental laws (22, pp. 35-38).

Although many sociologists do not deny sociology's position as a natural hsstory science (27, p. 701), they are put off by Wilson's arguments that sociology relies heavily upon "unaided intuition" (38, p. 4) and that much of

its so-called theory is merely "labeling" (38, p. 574). Although Wilson cites several studies (19, 27, 34) as examples of emerging sociological laws, he says that sociology presently utilizes "purely phenomenological" theories, adding that attempts at fundamental theory are futile in sociological methods extant (38, p. 574) and that theoretical "synthesis" in this area is actually nothing more than "cross-referencing" (38, p. 574).

In addition to sociology's shortcomings as a natural history science, Wilson holds that another flaw is the belief held by most sociologists that "human life is the nearly exclusive product of cultural determinism" (37, p. 131), a point upon which he and biosociologists such as van den Berghe agree (32, p. 731). Although some biosociologists disagree (16, p. 71), the problem of overemphasis on cultural explanation in sociological research is a persistent one (4, p. 66; 18, p. 73).

Wilson's criticism of sociology's use of culture as an explanatory principle stems, perhaps, from his knowledge of Durkheimian theory. Wilson rejects the latter's idea that social facts can be explained only by reference to other social facts (37, p. 136) and chides contemporary sociologists for clinging to the Durkheimian tradition (37, p. 137); he

apparently assumes that many sociologists totally agree with the social factist perspective.

Finally, Wilson believes that sociological analysis has not made full use of the few perspectives within the sociological tradition from which it might profit: social psychology, social Darwinism, and biologism (37, p. 137).

Wilson's Predictions for the Future of Sociology

Despite its shortcomings, sociology has a chance to remold itself, according to the author of Sociobiology, by following in the footsteps of its fellow descriptive sciences:

> Taxonomy and ecology . . . have been reshaped entirely during the past forty years by integration into neo-Darwinist evolutionary theory--the "modern Synthesis," as it is often called--in which each phenomenon is weighed for its adaptive significance and then related to the principles of population genetics. It may not be too much to say that sociology and the other social sciences, as well as the humanities, are the last branches of biology waiting to be included in the Modern Synthesis (38, p. 4).

"Modern Synthesis" refers to a series of theoretical breakthroughs in the first half of the twentieth century which helped link modern genetics to Darwinian evolutionary theory. During this period, the findings of several divergent biological disciplines were "translated" into the language of population genetics (38, p. 63).

According to Wilson, the inclusion of sociology into this synthesis will be a complex and time-consuming task for sociobiologists. One reason for this is that the fields of biology relevant to sociology's traditional field of study have only recently matured to the point where a dialogue with sociology is possible. Assuming a continuation of this trend, Wilson speculates that the end of the twenty-first century will witness "maturing" social sciences, with biology at its zenith (38, p. 574).

The maturation of sociology will initially entail its drawing closer to the related fields of anthropology, psychology, and social psychology; the resulting synthesis will yield sociology its first phenomenological laws (38, p. 574). Only after such a synthesis can sociology proceed to Northrop's "stage of deductively formulated theory" (22, p. 61). Sociology's transition to this stage of growth necessitates a kind of quantum leap involving "the introduction of a new type of knowledge of attendently different scientific concepts and scientific methods" (22, p. 59). This new type of knowledge will be provided especially by the discipline of neurobiology; this latter discipline will, for example, be able to quantify stress in terms of "neurophysiological perturbations,"

translate cognition into brain circuitry and define learning and creativity in terms of "alteration . . . of cognitive machinery" (38, p. 575). Only when neurobiology provides "a full, neurological explanation of the human brain," can sociology begin to develop fundamental deductive theory" (38, p. 575).

Therefore, the past inability of sociology to develop a unified theoretical system is understandable, says Wilson, because neurobiology has only recently begun to provide micro-level explanation of the human brain. When perfected, this explanation should yeild "a stoichiometry of social evolution, . . . an interlocking set of models that permit the quantitative prediction of the qualities of social organization" (38, p. 63). Moreover, the development of models such as these begins with the analysis of inter-species phenomena and not, as sociologists have assumed, intra-species phenomena (37, p. 131).

Thus, sociology can no longer afford to ignore biology, and especially sociobiology; for in doing so, it would condemn itself to remain an "ad hoc, descriptive science" (37, p. 137). However, Wilson argues, the outlook for sociology need not look so grim. Providing that sociology becomes

a part of the "new synthesis," it will reap a garden of new knowledge. Says Wilson,

> Biology is the key to human nature, and social scientists cannot afford to ignore its emerging principles. But the social sciences are potentially far richer in content. Eventually they will absorb the relevant ideas of biology and go on to beggar them by comparison (37, p. 138).

Although this scenario provided by Wilson assumes much, it has spawned a wealth of varied response from advocates and opponents alike. Currier believes that the acceptance of biology by the social sciences could be eventuated only by completely overhauling or discarding most modern behavioral theories (8, p. 45). Bonner visualizes a less immediate and less devastating effect, with biology being accomodated by social scientists who find its new directions a source of furthering present research (6, pp. 129-130). Barash, a sociobiologist, and Eckland, a sociologist, concur on the improbability of sociology's being "replaced" (4, p. 67; 10, p. 696); but anthropologist Sade insists that sociobiology must "invade" sociology or be proven false (25, p. 263). Gould doubts that such as "invasion" is likely (12, p. 17).

One of the most zealous reactions to Wilson's hypotheses has come from the pen of Lee Ellis, who graphically forecasts

"the decline and fall of sociology" by the end of this century: he envisions both the lines of unemployed sociology professors whose training has bypassed biology and the eventual luring of sociology's young minds by sociobiology (11). Kunkel responds to Ellis' claims by affirming that the range of phenomena traditionally considered most pertinent to sociology can never be totally explained by biological parameters (16, p. 72). Van den Berghe, like Kunkel a biosociologist, points out a fatal flaw in Ellis' (and Wilson's) reasoning: traditionally, intellectual quality has only minor consequences on the fate of academic disciplines like sociology. According to van den Berghe, ethnocentrism, narcissism, and increased academic specialization will provide "less demanding disciplines," like sociology, a steady supply of tuition-paying students (31, p. 76). Regardless of what changes sociobiology initiates in the field of sociology, either intellectually of academically, it is quite probable that judging from history, such change will be a slow, little-by-little process.

Sociobiology and Sociology: An Interdisciplinary Struggle

Whether or not sociology as an academic endeavor will crumble under the onslaught of sociobiology remains to be

seen. What will most certainly be "weapons" in the struggle for hegemony are the various theoretical and methodological weaknesses and limitations of each discipline which opposing scholars will elucidate. If History is true to herself, the resulting dialectic should help to solidify, strengthen, and synthesize the fittest theories of each discipline. In the spirit of scientific debate, then, this section will attempt to highlight the more frequently cited criticisms used by the opponents of each perspective.

One of the most frequent criticisms of Wilson's hypotheses is the charge of lack of evidence (7, p. 199; 8; 12, p. 18; 16, p. 71). Specifically, these critics are referring to Wilson's speculations concerning the application of sociobiology to human behavior. As van den Berghe notes, "As yet there is no demonstrated linkage between any human behavioral phenotype and a specific gene" (31, p. 76).

This is, of course, a problem which every theory of any appreciable scale encounters at the beginning, and Wilson himself stresses the tentativeness of his findings, especially as they relate to Homo sapiens (36, p. 189). However, Time reports that "few academic theories have spread so fast and with so little proof" (35, p. 63). This may be due, in part, to Wilson's scientific credentials, including his status as

a Harvard professor (20, p. 700), since much of what Sociobiology says is not new. Nevertheless, says sociobiology supporter Sade, the evidence to support or discredit sociobiology may be years in surfacing, "for actual testing of these [sociobiological] models requires studies of a duration and intensity beyond the current traditions of fieldwork (25, p. 262).

Accordingly, some opponents of sociobiology argue that gathering evidence to adequately test sociobiological hypotheses is impossible (26, p. 185). Mazur, for example, says that most of Wilson's theories are not falsifiable for a number of reasons: 1) the tautological basis of concepts such as "genetic fitness"; 2) ambiguous terms which defy operationalization; and 3) "intrinsically inaccessible" data (20, p. 698).

Tautology in evolutionary theory is a common problem, and it is one which Wilson recognizes (38, pp. 21-22). Yet, sociobiology's opponents have focused on this aspect, perhaps more than any other (2, p. 426; 3, p. 171; 5, p. 728; 15, p. 79; 20, p. 698; 26, p. 185; 29, p. 704; 31, p. 75). In Wilson's case the tautology is phrased as follows: "The fitter genotypes are those that leave more descendents, which, because of heredity, resemble the ancestors; and the genotypes

that leave more descendents have greater Darwinian fitness" (38, p. 67). Wilson seems to be saying that behaviors extant in the animal world are the ones which maximize genetic fitness, because they would not have evolved if they did not (20, p. 698).

According to the Sociobiology Study Group of Science for the People, the tautology surrounding the definition of fitness stems from Wilson's alternating levels of analysis:

> The mode of explanation involves three postulated levels of operation of natural selection: (1) classical individual selection to account for obvious self-serving behaviors; (2) kin selection to account for altruistic behaviors or submissive acts toward relatives; (3) reciprocal altruism to account for altruistic behaviors toward unrelated persons. All that remains is to make up a "just-so" story of adaption with the appropriate form of selection acting (26, p. 185).

As Margaret Mead has often said, according to Klopfer, "One of the marvels of biology is that it can provide examples to support any point of view" (15, p. 77).

Mazur's second reason why sociobiological theory is untestable is the ambiguity of certain concepts. His example of this ambiguity is Wilson's statement that "all social traits are capable of a significant amount of rapid evolution beginning at any time" (38, p. 145). According to Mazur, even if the terms "significant" and "rapid" were to be

operationalized, no test results possible could be used to falsify the proposition (20, pp. 699-700).

Kunkel believes that ambiguity stems from Wilson's use of terms such as "altruism" and "aggression." According to him, "(1) the term (altruism) covers a wide range of activities and situations whose labels depend on the observer, and (2) the behavior-context complexities are immense" (16, p. 70). Similarly, to label something as "aggressive" depends upon "the presumed motive of the actor . . . [and] the reactions of the recipient" as well as the reaction of the observer (16, p. 70).

Wilson's response to the criticism of ambiguity can be gleaned from his book. Obviously, says Wilson, sociobiology refers to altruism in the genetic sense, not the conventional sense (38, p. 117). Still, even in the genetic sense the term causes confusion. Says Mazur,

> A woman who gives her life to save her baby is <u>not</u> altruistic, because she is acting to maintain her own fitness (p. 117). If instead the woman gives her life to save a stranger's baby, then that could be altruism. However, if she is a spinster or an old woman whose child rearing is done, then her self-sacrifice for the stranger's baby is not altruism, because death would not affect her genetic fitness. A man who murders his child is altruistic, in Wilson's sense, if by the act he frees resources (e. g., food, shelter) which enable another person to have a child. Needless to say, a simple good deed would not be

> altruistic if it did not affect anyone's production of offspring (20, p. 700).

Mazur goes on to say that although some of Wilson's critics have failed to make this conventional-genetic distinction, Wilson, too, is guilty of the same failure (20, p. 700). One might assume that a new term would have avoided much confusion.

Mazur's final criticism, that of inaccessible data, refers to those instances where "the theory concerns some past event which was not observed and which has left insufficient traces" (20, p. 698). Tiryakian points out an example in Wilson's assertion that man began to walk upright in order to facilitate seed picking (29, p. 704). Not only are the data to support this statement inaccessible, but, says Tiryakian, the statement is an instance of "functional teleology" (29, p. 704).

Like tautology, illegitimate teleology is a common problem in evolutionary biology (29, p. 704). Hence, one cannot explain altruism or any other social behavior by saying that its consequences caused it. However, Nagel writes that teleological statements may be "merely a shorthand way of stating the same causal relationship nonteleologically" (30, p. 54). According to Nagel's view, saying that man is

altruistic, for example, because altruism increases his genetic fitness is the shorthand for saying that under conditions C_1, C_2, C_3, . . . C_n, man became altruistic, which increased his genetic fitness. This latter statement is not teleological as long as one specifies the various antecedent conditions.

However, Klopfer indicates that even if sociobiologists utilize Nagel's formula, the consequences of behavior are not always obvious (15, p. 82). This is a problem in analyzing sub-human species: increased clutch size, argues Klopfer in his example, pays off in increased Darwinian fitness, but only among birds of certain species; otherwise, smaller clutches result in better nourished, fitter young (15, pp. 81-82). When predicting the consequences of human behavior on survival, the problem appears to be infinitely more complex. For example, the adaptive value of the human brain is, perhaps, unparalleled in the biosphere; yet, if it leads humanity to a nuclear holocaust, . . .

Ironically, the proponents of sociobiology cite teleology as one of the chief weaknesses of sociological theory (31, p. 75), and Ellis cites Kuhn and Skinner as concurring that "statements implying intentions, purposes, aims and goals are not found in any mature science" (11, p. 57). However,

sociologists claim that only when purpose is attributed to nonhuman phenomena is the explanation necessarily teleological (9, p. 192). Indeed, purpose, or motive, cannot be experimentally removed from human beings' behavior without drastically altering whatever it is that makes us human. Although the unique quality of human life can hardly be questioned, some scientists believe that, as far as behavioral science is concerned, this uniqueness cannot be held as a primary explanation (32, p. 733).

Even sociologists such as Lenski maintain that past sociological theorizing may have been hampered by ignoring the fact that social organization is not unique to man (17, p. 530). Similarly, van den Berghe suggests that present sociology has placed too much emphasis on symbolic behavior and says that it may be possible that "some of our behavior is understandable without reference to what we say, think or feel" (33, p. 821).

Van den Berghe also criticizes sociology for its apparent insistence on the infinite plasticity and the voluntaristic nature of man's behavior patterns (31, p. 75). Since, say the sociobiologists, the individual is not infinitely malleable, it is unwise for sociology to accept extreme forms of cultural determinism (3, pp. 170-171). Barash believes that

sociological theory is "rampant" with this kind of determinism (4, p. 66); van den Berghe calls the tenacity with which sociologists accept it "dogmatic" (31, p. 75; 32, p. 733); sociologists such as Lenski agree (17, p. 531).

The above criticisms may derive from what Gray calls "an imperialistic over-expansion in the 1930's and 1940's . . . of culture as an explanatory principle" in sociological theory (13, p. 1). However, he believes that recent trends in theorizing have shown a retreat of cultural determinism toward "more realistic and defensible boundaries" (13, p. 1). The new directions taken by contemporary biosociologists indicate that sociologists are seeking alternate explanations.

These new directions are keenly sought by many sociologists who apparently believe that sociology can use all the help it can get (4, p. 66; 6, p. 130; 8, p. 45). Some scholars admit that sociology has, for too long, contained an anti-biology and anti-evolutionary bias (18, p. 73; 28, p. 53; 29, p. 705; 31, p. 75). Wilson makes the same observation while labeling sociological theory as an instance of "anthropocentrism" (37, p. 131). Although Kunkel points out a number of biological considerations that sociology <u>has</u> taken into account in the past (16, p. 71), it would seem that sociology is once again headed toward a resurgence of biology-related explanations (20, p. 700; 14; 23; 24).

Therefore, although sociologists seem to be moving away from extreme cultural determinism, they continue to chide sociobiologists for the latter's underestimation of the influence of cultural phenomena (17, p. 531). They argue that, despite biological constraints imposed upon Homo and despite the social organization exhibited by some lower species, the existence of what Wilson calls the "unique human genotype" (37, p. 132) precludes direct continuity in behavioral explanation between man and all other species of animals (1, p. 43; 12, p. 20; 16, p. 69). Social scientists are warned to be wary of "uncritical extrapolation" from animal behavioral studies (16, p. 69).

A persistent problem with such extrapolations, argue some researchers, is the failure to differentiate between similarities due to "analogy" and those due to "homology" (15, p. 79). These two terms are often used by comparative biologists to distinguish between similar structures in two different species; that is, the structural uniformity may be due to similar function only (analogy), or it may be the result of common genetic ancestry (homology). Since sociobiologists apply this distinction to behaviors as well as to physical structures, they are often subject to the criticism that what they see as homologies are mostly simple analogies

(1, p. 43; 12, p. 17). True genetic homology would be extremely difficult to substantiate empirically, and Wilson is cautious in applying the term (36, p. 188).

However, sociobiologists still affirm that the discernment of inter-species patterns of behavior should be the primary means of developing knowledge about human behavior (37, p. 131). According to van den Berghe, to ignore the fact that human social behavior can be explained, in part, both by explaining other primate behavior and without reference to uniquely human variables is anti-reductionistic; to ignore anti-reductionism shows "great ignorance of the history of science" (31, p. 75).

Yet, both sociobiologists and sociologists have indicated an anti-reductionist quality in much sociological theorizing (11, pp. 56-67; 29, p. 702; 31, p. 75; 37, p. 137). Wilson believes that a failure on the part of contemporary sociologists to break with the Durkheimian tradition has prolonged this anti-reductionist bent (37, pp. 137-138). According to Kunkel, however, "reductionism is a matter of degree, and its utility varies with the kinds of societal phenomena under investigation" (16, p. 71). He goes on to say that reductionism can be accepted in sociology only to the point that it lends useful results (16, p. 71). Since psychology has

been unable to provide such useful results when attempting to reduce complex social phenomena to individual parameters, it would seem unlikely that sociobiology will be able to reduce them to biological ones (10, p. 696).

One problem in reducing sociological explanations to biological ones is the "almost incomprehensible causal distance between gene action and phenotypic behavior in man" (10, p. 696). To map out causal chains from the DNA, through the cells, through the brain would be a Herculean task. To develop social laws from a "full neuronal explanation of the brain" (38, p. 575) may take centuries. In the meantime, social facts explained by other social facts, although anti-reductionistic, may prove more expedient.

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CHAPTER IV

CONCLUSIONS

In the introduction of Chapter I of this thesis, some specific questions were posed concerning the influence of sociobiology on sociology: 1) Will sociobiology subsume sociology? 2) Will sociobiology stand against sociology as an alternate explanation? 3) Can sociobiology be viewed as a trend within sociology? In order to answer questions of this magnitude, it will be useful to first lay a proper groundwork on which the answers will rest. This groundwork will consist of a number of preliminary conclusions about the issues analyzed in Chapters II and III. Specifically, these issues deal with the degree of determinism in Wilson's theories, the human biogram, society and culture, human nature and ethics, Wilson's familiarity with sociology, his view of the present and future of sociology,and finally, the weaknesses of sociobiology and sociology. These initial conclusions will be expanded upon as the major questions mentioned above are answered later in this chapter.

Preliminary Conclusions

First, concerning the degree of determinism inferred by Wilson's sociobiology, this thesis concurs with Gould (5, p. 18) that sociobiology necessarily rests upon a rather strong genetically deterministic base. Despite Wilson's de-emphasis of genetic fitness as the total explanation of social behavior, it is apparent that sociobiology seeks to show that nonbiological factors are adjunctive causal phenomena which display emergent influence only within a sphere of ecological release. There can be no viable analysis of behavior as, for instance, ten per cent biology and ninety per cent culture, and for sociobiologists to admit that social evolution is "mainly" cultural belies their positing biological variables as the key to understanding human social behavior.

As for the human biogram, it would be reckless to argue that there are no human universals or that human beings have no biological limitations. Surely, a human biogram does exist and is important in the analysis of the social behavior of our species. It seems beyond dispute that human beings learn some things more easily than others, that inherently we possess individually different potentials for particular kinds of behavior and different threshholds for certain kinds

of stress, and that the human organism finds some stimuli innately aversive, others innately comforting. These basic considerations should, and often do, form a foundation upon which both psychological and sociological research build.

However, Wilson's list of human universals is problematic, both scientifically and politically. How useful is it, for example, to state that nature selects for "genes promoting flexibility" (18, p. 549)? Empirically testing for this attribute would be difficult, at best. Similarly, Wilson's speculation that there is a potential for significant genetic differences among social groups (17, p. 133) seems hardly more useful, since the small amount of gene flow between populations necessary to offset the effects of natural selection is becoming more and more prevalent as increased mobility and migration make it possible for even the most distant and isolated populations to interbreed.

Even more problematic are Wilson's hypothesized universals clustered around sexual differences, especially as they relate to the sexual division of labor. Putting aside temporarily the scientific bases for sex differences, one cannot help but suspect that the current political and ideological crisis surrounding this issue in America can only insure that the whole of sociobiology will meet with resistance

both inside the university and from without. It is this issue of innate sexual differences in behavior that has damaged Wilson's plausibility among scholars more than any other issue. For the sake of wider audience acceptance, Wilson would have been expedient to tread more softly upon the conscience of Americans.

This is not to say, however, that scientific inquiry should avoid making pronouncements which may be politically or ideologically unpopular. A scientist should always proceed toward accuracy in his work even when the results may contradict prevailing attitudes. Still, Wilson's extrapolations about sex-related behavior in humans are, as he admits, highly speculative. He is an entomologist who, in his text, tries to deal with human behavior _in toto_ essentially in one chapter. Given such limitations of space and expertise, these extrapolations seem imprudent.

Other aspects of Wilson's biogram appear less of a problem for sociobiology's acceptance. Thus, the delineation of traits such as aggression, deceit, territoriality, and small group size may prove useful to social scientists in explaining the ubiquity of a number of social problems such as war and violence, crime, ethnocentrism, and alienation, respectively. However, to say that man innately develops

communication, religion, ethics, esthetics,and culture seems to be a moot point: such a statement, whether valid or not, explains little about how these phenomena are positively realized. Contemporary sociologists have nearly always attributed man with an inborn sociality, but this attribute has had little heuristic value for explaining existing patterns of social structure.

These same sociologists will find it hard to ignore the reduction of social phenomena to individual phenomena, an implicit emphasis in any genetic account of social facts. Wilson does not deny the emergent properties of group behavior; but, in stressing the strong, pervasive influence of individual reproductive success, he directs attention to the reductionist view of society as no more than the sum of individuals. This view promotes individual irresponsibility for social ills and dignifies the myth that bad people cause bad social conditions. Necessarily, this myth supports the apathy of those who believe that they themselves are <u>not</u> bad people and keeps them from assuming any personal liability for social problems. Surely, the promotion of this kind of apathy is antithetical to a viable sociology, which seeks to tie the individual to the group and demonstrate how social problems,which are seemingly quite distant from the

individual, nevertheless affect everyone (8, pp. 3-24).

Further, this study concludes that ethics and human nature should not be "biologicized." It concurs with Fairlie that

> . . . not to acknowledge that the evolution of man in nature at some point involved the removal of himself from nature is a denial of our humanity; and it will always result in attitudes and policies that diminish, if not our view of other men, certainly our view of human nature (4, p. 153).

Like the puritanism of New England, which sought to define man as a vile beast of nature, sociobiology's abridgement of human nature as a genetic "technique" can only diminish our view of ourselves as moral creatures.

As moral creatures our ethical pronouncements should flow from the conscience by means of "unaided intuition" (Wilson's phrase) and not from any so-called "laws" of nature. Although our rules of conduct must not be allowed to run counter to the basic life functions rooted in our natural origins, only by setting ourselves apart from nature can we ever hope to escape nature's amorality, including its ignorance of individual rights.

In regards to Wilson's familiarity with sociology, it seems likely that his limited acquaintance with this field reflects an even larger problem within sociobiology: the

lack of human behavioral data. Biologists are just beginning to realize that earlier field studies of animal behavior, often based on a few hundred hours of observation time, made erroneous conclusions which were later corrected when observation time passed the thousand-hour mark (18, pp. 246-247). Thus, sociobiologists cannot hope to simply add Homo sapiens to their list of subjects without compiling years, perhaps even decades, of observation time, so complex is this animal called man. It is unlikely that, after such extensive observation, the basic tenets of sociobiology will remain unaltered. Therefore, the extrapolations of sociobiological principles into the human sciences seems premature.

This thesis further concludes that Wilson's view of sociology's present condition, although based on limited acquaintance, is basically sound: contemporary sociology is a natural history science relying heavily upon description and first-order correlation. It has most probably overworked the explanatory power of culture, and it has made little use of findings from adjacent disciplines. It is doubtful, however, that sociobiology is the panacea for sociology's ills. Sociology, with or without sociobiology's help, may never fully enter the stage of deductively formulated theory; a comprehensive stoichiometry of human social behavior may be impossible.

Finally, regarding the intellectual struggle between sociology and sociobiology, it is likely that the most incapacitating weaknesses of sociobiology are those which stem from its bio-evolutionary base. All of the problems which have afflicted previous biologically deterministic theories, such as the inability to accomodate the effects of environments (5), afflict sociobiology. Also, the ambiguities and tautologies which beset general evolutionary theory, such as those surrounding the definition of "adaptive" (7), are not absent from Wilson's "new synthesis." On the other hand, the most damaging weakness of modern sociology (as it relates to the accusations made by sociobiologists) is the overly deterministic role granted culture. Perhaps, because culture is sometimes considered to be the exclusive property of sociology, the scientists in this area tend to exaggerate its importance. The dangers of "disciplinocentrism" are a constant threat to any intellectual perspective. However, sociology's emphasis on purposeful behavior and its antireductionism are not weaknesses. As will be argued later in this chapter, these characteristics constitute two of sociology's greatest strengths; they are the earmarks of the humanities, and sociology may be more a part of the humanities than the sciences.

Major Conclusions

Given these preliminary conclusions, it is now possible to expand upon them and to weave them into a more comprehensive analysis of this thesis' major conclusions.

Will Sociobiology Subsume Sociology?

Wilson implicitly believes that the social sciences will one day be incorporated into the Modern Synthesis, notwithstanding his brief disclaimer that whether or not this will actually come about "remains to be seen" (18, p. 4). He envisions that sociology will be redefined as the sociobiology of a single species and that, perhaps, the human experience can ultimately be explained in mechanistic terms based on molecular biology. Can sociology be subsumed by sociobiology? It is highly improbable for a number of reasons.

To begin with, sociology fills a void left by sociobiology. The entire bio-evolutionary scheme upon which sociobiology is based fails to account for the effects of other forms of fitness and alternative types of evolution. There are many kinds of fitness about which one may speak: economic fitness, educational fitness, psychological fitness, social fitness (for example, in regard to one's status level or

number and strength of social ties), and even spiritual fitness. Consideration of these types of fitness by human individuals is undoubtedly a major source of stimuli for social behavior. One may ask, therefore, whether or not these additional types of fitness are understandable as outgrowths of biological fitness and, put another way, whether or not the enhancement of these forms of fitness necessarily leads to increased reproductive success.

There is little reason to doubt that considerations of economic or social fitness, for example, have historically influenced individual reproductive success and that, to some degree, they still do. For instance, the poor and the isolated of any society should theoretically find it more difficult to amass reproducing offspring. However, as a consequence of cultural evolution, ever greater proportions of the population are being freed from the most limiting constraints on biological survival by the availability of a variety of social and technological advances, for example, better health care, the use of "miracle" drugs, the abundant food supply, and relative protection from enemies. Yet, human survival rates do not bear a necessary relation to access to such survival advantages. The point is that individual reproductive success depends, in large and crucial part, on

whether or not the individual wants to reproduce. Although alternate forms of fitness may be correlated slightly with reproductive success, they cannot be explained by the same parameters. Whereas economic, educational, social, and psychological fitness may provide the individual with a fuller, healthier and happier life, these advantages do not always increase or decrease one's chances of reproducing.

To illustrate further, the differences between annual incomes of $20,000 and $50,000, between a high school education and a college degree, between neurosis and mental health, or between the statuses related to janitor and judge--these differences can motivate a significant amount of social behavior. There is little evidence, however, that they are inequalities which appreciably alter the odds of reproductive success. Since this is true, it seems unlikely that these inequalities can be explained by reference to genetic fitness.

Thus, cultural evolution has been, for the most part, removed from biological constraints. Obviously, historical advances in culture have played a part in the rise and fall of civilizations; but in our modern world who can say that increasingly sophisticated analytical research techniques or weaponry systems or communication networks insure greater biological security? In fact, the opposite may be true; we have left the Idea of Progress to the past.

To reiterate, cultural adaptation must meet minimal standards of biological fitness, but biological parameters cannot explain culture. Unlike biological evolution, cultural evolution is Lamarckian in character, and cultural transmission depends upon more sources of information than the genetic code provides (6). Cultural evolution is infinitely more complex and exponentially faster than its biology counterpart. It involves qualitatively new forms of perpetuation and transmission of information and emergent sources of variability (that is, Lamarckian characteristics). Also, the feedback which helps steer cultural evolution consists of more than simply the reduction or augmentation of biological survival.

Given, then, that there are different forms of fitness and, hence, different kinds of evolution, it must be stressed that these phenomena are not merely "ethnographic details" that form an auxiliary system around a deeper biological system; they are, in fact, an integral part of any comprehensive explanation of social behavior. As human beings, we can purposely direct our behavior toward the attainment of many kinds of fitness which sociobiology cannot account for.

Sociobiology deflates the importance of purposeful behavior and symbolic motivation and, in doing so, leaves

a gap which sociology seeks to fill. In this endeavor sociology necessarily produces concepts which appear to be anti-reductionist in relation to biological concepts. However, emergent forms of behavior demand emergent forms of explanation. Van den Berghe has said that some forms of behavior may be understandable without reference to what we say, feel or think (14, p. 821). Perhaps, some are; but while a substantial amount of the behavior of sub-human species can be analyzed without regard to symbolic motivation, the analysis of economic, educational, social, and mental fitness must rely heavily upon considerations of purpose and meaning.

Each species is unique, if only with respect to, say, learning set and sensory field. While much scientific insight can be gained by means of inter-species comparisons, such methods can never explain intra-species differences, which are undoubtedly most pronounced in the human species. It is precisely these intra-species (inter-cultural) differences which the scientific community needs most to understand at present. It is well known that differences between social groups in learning and socialization, in cultural heritage and in the ethical systems can drastically affect modern life. To say that these differences merely reflect "multiple adaptive peaks," each being as biologically fit as the next,

says nothing about how these differences can motivate such radically divergent social behaviors.

Sociobiology, of course, does not ignore intra-species differences in most species, although Wilson does doubt the significance of intra-human genetic differences in explaining cultural differences (18, p. 550). On the other hand, sociologists do not ignore the similarities of human cultures (they, in fact, often emphasize them). The point to be made, however, is that the study of inter-species phenomena is not, as Wilson claims (17, p. 131), a necessary precursor for the study of human society.

Therefore, sociology must attempt to understand these cultural differences and, in doing so, must concentrate on intra-species phenomena and on the properties of human life that set it apart from the lives of all other animals. If sociology fails in its endeavor, it will not be because it rejected inclusion into the Modern Synthesis. More likely, it will be because the complexities of modern human social behavior are not amenable to the methods of science.

Does Sociobiology Stand Against Sociology?

Some observers of the sociobiology phenomenon regard sociology and sociobiology as mutually exclusive perspectives, two poles between which hegemony within the universities

fluctuates (11). Is sociobiology an alternate explanation for social behavior, a perspective that is antithetical to the basic tenets of sociology? To some degree, the answer must be yes.

Despite some of its advocates' espousals otherwise, sociobiology has re-ignited the perennial nature-nurture controversy. Wilson's book diametrically opposes the view that social phenomena such as altruism are shaped and maintained primarily by environmental variables such as learning. According to even the most conservative interpretation of sociobiology, with its central concept of inclusive fitness, man is innately, albeit selectively, altruistic. It is difficult, though not impossible perhaps, to accept both the natural and nurtural explanations for man's altruism and various other universal traits. To the degree that these explanations are not reconcilable, sociobiology does represent a shift away from traditional sociological (that is, nurtural) explanations and juxtaposes itself against sociology as currently characterized.

Time magazine points out the timely occurrence of this shift in emphasis. According to Time the 1970's have witnessed growing disillusionment with environmental experiments designed to alter problematic social behavior and with the

concept of the infinite plasticity of human behavior (16, p. 63). Similarly, Wilson points out that "general process learning theory is crumbling" (17, p. 135), and sociologists have been criticized for their failure to explain social problems (3, p. 57). In light of these events, it is possible that sociobiology supplements this "swing" toward more tangibly mechanistic explanations like those of evolutionary biology or genetics.

The effect of this trend upon sociology could be a desirable shaking up of overly deterministic cultural interpretations. Sociologists need to be more aware of such biological limits (as yet undetermined) beyond which culture cannot evolve or survive. Wallace, for example, has suggested that science, even social science, must envelop the following ideas:

> the concept of a finite earth; the concept of the biosphere and the place of humans within it; an appreciation of the frailty of many ecological systems that appear to be indestructible or, at least, self-healing; an awareness that specific acts have important long-range outcomes; and an understanding of the conflicts between economic and ecological considerations (15, p. 13).

In short, sociologists must become better students of their anti-discipline. It is hoped that such an undertaking will, additionally, entail better acquaintance with the more proximal disciplines, such as social psychology and

anthropology. A broadly educated sociologist can perceive the shortcomongs of any overly deterministic scheme, cultural or otherwise. If sociobiology in any way helps to dispel the provincialism and intellectual myopia evident in many modern universities and professional organizations, then the resulting interchange of ideas can only bolster and enrich the cause of sociology.

Is Sociobiology a Movement within Sociology?

If sociobiology does not subsume sociology and if it does not merely oppose it, there are other possibilities. It is likely that the two disciplines may experience what Eckland calls "limited, cautious convergence" (2, p. 697). Can sociobiology be incorporated into current sociological theory without radically altering the essence of sociology? This thesis concludes that it can and that this "solution" is also the most probable one.

One reason for suspecting that sociobiology can find a place within contemporary sociology is that the former is not necessarily incompatible with a number of popular sociological theories. Eckberg, for example, finds useful ties between Wilson's ideas and those of Parsons (1, p. 192). Sahlins (13) and Eckland (2) have discerned basic similarities

between sociobiology and functionalism. There may also be useful congruities between conflict theory and the idea of genetic competition, since both schemes stress order through coercion. Perhaps one of the most notable methodological parallels is between sociobiology and a category of sociological theory labeled "social definitionist" by Ritzer (12); both of these perspectives emphasize the observation of behavior in its "natural" setting. Examples of theoretical and methodological similarities between sociology and sociobiology abound, and this thesis cannot begin to delineate even a small portion of them. It is suggested, however, that future theses could yield fruitful results from analyses of the similarities and differences between sociobiology and traditional sociological perspectives.

In finding its niche within sociology, Wilson's sociobiology may also be viewed as a reflection of a trend in biology which was evident in sociology even before the publication of The New Synthesis. Biosociology, for example, is well on its way to becoming a major sub-field within the larger academic field of sociology. The great strides taken recently by biosociologists, as well as the resurgence of evolutionary theory in sociology (9), indicate that sociologists had already begun to carve out the biological bases

of human social behavior when Wilson's text arrived. Sociobiology, therefore, may find its place in sociology ready-made and eagerly anticipated.

A Note on Politics

Even though this thesis has tried to separate the political arguments from the intellectual ones, the politics of scientific theory should never be ignored, _especially_ by scientists. Scientists should, and often do, share the bulk of responsibility for even the _mis_applications of their ideas. Seasoned scientists cannot pretend to be surprised by even the most bizarre extensions of their theories. Of course, the scientist never knows for sure where his ideas will eventually lead in the hands of others, but he should know the possibilities.

Observers have pointed out that the sociobiological perspective _could_ be used to buttress, and thus encourage, a variety of problems of the _status quo_. Having been labeled as possibilities, these theories will undoubtedly be so used. They need not be used conspicuously, splashing across the headlines of local newspapers, filling the minutes of seminars, or reflecting from a hand-painted protest sign. Often theory does little more than sensitize us to certain kinds of phenomena

and prepares us to solve problems that it says are soluble in a certain way. Any theory is always, however, only one explanation of many possible ones.

According to Pirsig, "the number of rational hypotheses that can explain any given phenomenon is infinite" (10, p. 107). If this is true, why should scientists not emphasize those explanations which are most consistent with constructive ideological change? Since science can never disconnect itself from the question of politics, and therefore values, why should scientists not emphasize those theories which allow for the creative re-imagining of human potential?

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CHAPTER V

SUMMARY

Although sociology may have initially invited natural explanation, biological determinism has largely been eschewed by sociologists; and contemporary academic provincialism and specialization have hindered a meaningful dialogue between sociology and biology.

Sociobiology, especially as set forth by Edward O. Wilson in Sociobiology: The New Synthesis, has sought to re-open this dialogue with a somewhat startling theory: the idea that social behavior can be explained by reference to the reproductive success of genes. In its attempt to predict social structure by the analysis of the effects of natural selection on DNA, sociobiology has attracted both a devoted following and a vociferous opposition. Opponents of Wilson's sociobiology have stressed the political overtones of the theory, especially the supposed justifications of the status quo, and the ensuing debate has caused a rift between advocates and opponents which transcends the usual academic rivalry.

Although the political and the scientific aspects of sociobiology are hard to separate, this study has emphasized the latter in an attempt to ascertain the possible influence of sociobiology on contemporary sociology. Specifically, the thesis posed three questions: 1) Can sociobiology subsume sociology? 2) Is sociobiology antithetical to sociology? 3) Can sociobiology be viewed as a movement within sociology?

Wilson in his Sociobiology defines sociobiology as "the systematic study of the biological basis of all social behavior." He applies modern evolutionary theory to social behaviors, which are viewed as phenotypes, and points out that nature selects for those behaviors which maximize genetic fitness. One such favored behavior is altruism, a concept central to sociobiology. Sociobiologists avow that, while altruistic behavior decreases individual fitness, it nevertheless increases the individual's inclusive fitness, the Darwinian fitness of all those with whom the individual shares common genes and for whom the altruistic act is performed. Using altruism as a model for other social behavior, sociobiology seeks to explain social structure by examining the genetic parameters of populations.

Wilson's text may have set off something like a movement, the members of which see in sociobiology a simple and

unifying theory which may prove to be a breakthrough for reductionistic science. Unfortunately, the book has also ignited a forest of political controversy. Critics say that the theories in Wilson's book lend support to existing social inequalities and that Sociobiology reflects the personal prejudices of its author. These critics fear that sociobiological arguments will be used by the elite to promote social exploitation of the socially less fit. Further, some feel that sociobiology undermines human autonomy.

The advent of sociobiology may be part of a larger movement in the sciences toward biological explanation, a mode of explanation which sociology has tended to ignore in the past. The theories in Wilson's text have been built around several new formulations of biological fitness which have only recently come to light.

This thesis has explored several of the key assumptions of sociobiology which directly relate to sociology: the degree of determinism in Wilson's theories, his concept of the human biogram, the sociobiological definition of society and culture and finally, Wilson's view of human nature and ethics. Sociobiology's definition of these concepts undermines many of sociology's definitions, but some scholars believe that there may be room for compromise.

Whether or not sociobiology and sociology can reach a compromise remains to be seen. Meanwhile, Wilson predicts that sociobiology will subsume the social sciences, making sociology the sociobiology of a single species. He believes that contemporary sociology suffers from its status as a natural history science, which describes and correlates but does not yield fundamental laws. Social scientists have taken exception with Wilson's predictions, and sociologists and sociobiologists have both attacked the other's perspective, pointing out the theoretical and methodological weaknesses in each viewpoint.

After a series of preliminary conclusions, this thesis deduced the following: 1) that sociobiology cannot subsume sociology, since the former ignores much data pertinent to social analysis, especially other forms of fitness and other kinds of motivation (for example, symbolic motivation); 2) that sociobiology's emphasis on biological explanation is, in many basic ways, antithetical to sociology, a fact which may help sociology refrain from an overemphasis of cultural explanation; and 3) that sociology has already begun to incorporate biological variables in its research and that sociobiology may find a place ready-made in sociology, especially among the biosociologists.

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