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# Flesh and Blood and Genes. Bringing (Back) Nature into the Scientific Analysis of Social Phenomena

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# Flesh and Blood and Genes

## Bringing (Back) Nature into the Scientific Analysis of Social Phenomena

by Maurizio Pisati

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### Prologue

Vatican City, 22 October 1996. A hush falls over the members of the Pontifical Academy of Sciences gathered in plenary assembly, as the words of Pope John Paul II – in the world Karol Józef Wojtyła – start resounding in the hall where the meeting is taking place. The fact is that the message delivered by the Pope to celebrate the 60<sup>th</sup> anniversary of the Academy's refoundation contains not only the usual greetings, but also an unexpected pronouncement on the theory of evolution. After some introductory remarks, the Pope gets to the heart of the question and states:

Taking into account the state of scientific research at the time as well as of the requirements of theology, the Encyclical *Humani generis* [issued by Pope Pius XII in 1950] considered the doctrine of “evolutionism” a serious hypothesis, worthy of investigation and in-depth study equal to that of the opposing hypothesis. (...) Today, almost half a century after the publication of the Encyclical, new knowledge has led to the recognition of the theory of evolution as something more than just a hypothesis. It is indeed remarkable that this theory has been progressively accepted by researchers, following a series of discoveries in various fields of knowledge. The convergence, neither sought nor fabricated, of the results of work that was conducted independently is in itself a significant argument in favor of this theory.<sup>1</sup>

<sup>1</sup> Excerpts are taken from the English translation of the Pope's message as reported in *The Quarterly Review of Biology* 72 (1997): 381-383.

As prudent as it may sound, this declaration represents a clear and definite acknowledgment of the central role played by science in general, and evolutionary thinking in particular, in the understanding of human nature and the origins of mankind. Of course, the Pope cannot go so far as to contradict the *Magisterium* of the Catholic Church, particularly the teaching that human beings were created in the image and likeness of God. Therefore, he qualifies his previous assertions as follows:

[I]f the human body takes its origin from pre-existent living matter, the spiritual soul is immediately created by God. Consequently, theories of evolution which, in accordance with the philosophies inspiring them, consider the mind as emerging from the forces of living matter, or as a mere epiphenomenon of this matter, are incompatible with the truth about man. Nor are they able to ground the dignity of the person. *With man, then, we find ourselves in the presence of an ontological difference, an ontological leap, one could say.*<sup>2</sup>

Clearly enough, the reaffirmation of man's uniqueness – i.e., man as the consequence of an *ontological leap* – is at odds with the natural history of the human kind as told by evolutionary theory.<sup>3</sup> John Paul II is fully aware of this disagreement and questions: “[D]oes not the posing of such ontological discontinuity run counter to that physical continuity which seems to be the main thread of research into evolution in the field of physics and chemistry?” And here is the Pope's solution to this knotty problem:

Consideration of the method used in the various branches of knowledge makes it possible to reconcile two points of view which would seem irreconcilable. The sciences of observation describe and measure the multiple manifestations of life with increasing precision and correlate them with the time line. The moment of transition to the spiritual cannot be the object of this kind of observation, which nevertheless can discover at the experimental level a series of very valuable signs indicating what is specific to the human being. But the experience of metaphysical knowledge, of self-awareness and self-reflection, of moral conscience, freedom, or again, of aesthetic and religious experience falls within the competence of philosophical analysis and reflection, while theology brings out its ultimate meaning according to the Creator's plans.

However debatable, these words reveal that John Paul II is in fact raising an epistemological issue here, and clarify that the Pope, when postulating man's ontological discontinuity, is taking not a scientific position, but rather a *theological position*. That is to say, John Paul II recognizes that, from the point of view of science, the evolution of life is a continuous process and, therefore, humans are but one of its

<sup>2</sup> Emphasis added.

<sup>3</sup> See, for instance, Dawkins [2004], Ridley [2004], and Boyd and Silk [2006].

“multiple manifestations.” However, when we turn our look from the material world to the spiritual world, theology replaces science as the legitimate form of knowledge and it becomes possible to assert the epistemic validity of the notion of man’s ontological leap.

For the purposes of this writing, the line of argumentation followed by Karol Wojtyła to justify his affirmation of man’s ontological discontinuity is instructive because, *mutatis mutandis*, it closely resembles the way many sociologists defend the “distinctiveness” of the social world (and its analysis) as compared to the natural world. As I will briefly argue in the following sections, this defense inevitably amounts to embracing – wittingly or unwittingly, implicitly or explicitly – an anti-naturalistic stance that, in view of the recent advances in such fields as evolutionary biology, behavioral genetics, and cognitive neuroscience, is hardly tenable – unless, of course, one is willing to follow in Wojtyła’s footsteps and endorse a more or less spiritual version of the notion of man’s ontological leap.

### **A Separate Reality: Sociology beyond Nature**

The first modern attempts to lay down the foundations of a scientific analysis of social phenomena took place in a time – the first decades of the Nineteenth century – when it was common to assume that human beings belong to an objective natural order and that the social world is continuous with, or arises from, the natural world [Williams 1999]. As Voltaire had put it some decades earlier, “it would be very singular that all nature and all the stars should obey eternal laws, and that there should be one little animal five feet tall who, despite these laws, could act as he pleased, solely according to his caprice.”<sup>4</sup> This view was shared, among the others, by such prominent scholars as Adolphe Quételet (1796-1874) and John Stuart Mill (1806-1873). The former maintained that a single method was appropriate for every science and that the “social physicist” could do no better than imitate the celestial one [Porter 1986, 41-42]. In turn, Mill believed that whereas natural phenomena derive from physical laws, social phenomena derive from the laws of mind; but since the laws of mind depend, in the final analysis, on the physical laws, social phenomena derive themselves from the latter [Thomas 1985, 65-67].

The idea of a continuity between the natural world and the social world was also central to the system of positive philosophy worked out by the originator of sociology, Auguste Comte (1798-1857). In outlining the basic traits of his system, Comte [1830, 14] pointed out that “the first characteristic of the positive philosophy is that

<sup>4</sup> Voltaire, *Le philosophe ignorant*, 1766, section XIII.

it regards all phenomena as subjected to invariable natural *laws*.”<sup>5</sup> Here, the expression “all phenomena” encompasses not only “astronomical, physical, chemical, and physiological” phenomena, but also *social phenomena*, regarded as another class of manifestations (the most complex one) of the same natural world. The human mind – Comte wrote – has already grasped the first four types of phenomena; to complete the positive philosophy, “it remains to bring social phenomena within its comprehension and *to consolidate the whole into one body of homogeneous doctrine*” [*ibidem*, 51].<sup>6</sup>

More details about the relationship between social physics (i.e., sociology) and the other branches of positive philosophy are given in the forty-ninth lesson of the *Cours de philosophie positive*. To begin with, Comte makes it clear that the establishment of social physics in its proper place in the hierarchy of fundamental sciences “is a principle of such importance that it may be seen to comprehend all the philosophical requisites for its institution as a science” [Comte 1839, 471]; this step is so decisive, Comte says, that its omission cannot but cause the failure of any attempt to construct a social science. Particularly important, in this regard, is the connection between the two “organic physical sciences,” sociology and biology, clearly spelled out in the following excerpt:

The subordination of social science to biology is so evident that nobody denies it in statement, however it may be neglected in practice. This contrariety between the statement and the practice is due to something else, besides the faulty condition of social studies: it results also from the imperfection of biological science (...) and especially from its most conspicuous imperfection of all, that of its highest part, relating to intellectual and moral phenomena. It is by this portion that biology and sociology are the most closely connected; however, cerebral physiology is too recent, and its scientific state is too immature, to have admitted, as yet, of any proper organization of the relations of the two sciences. Whenever the time for that process arrives, (...) biology will be taken as the necessary starting-point of all social speculation, in accordance with the analysis of the social faculties of human beings and of the organic conditions which determine their character [*ibidem*, 477-479].

Here, Comte is very explicit about the key role played by biology in the analysis of social phenomena and, by referring to “cerebral physiology,” even seems to prefigure the importance of neuroscience in the explanation of human social behavior. To be sure, Comte is careful in clarifying that sociology is not “a mere corollary” of biology – or of any other science, for that matter. Nonetheless,

<sup>5</sup> The English translation of the excerpts from the *Cours de philosophie positive* reported here relies heavily on Comte [1896]. The page numbers indicated in the citations, however, always refer to the original French version.

<sup>6</sup> Emphasis added.

social phenomena must always be founded on the necessary invariableness of the human organism, the characteristics of which, physical, intellectual, and moral, are always found to be essentially the same, and related in the same manner, at every degree of the social scale (...). No sociological view can therefore be admitted, at any stage of the science, or under any appearance of historical induction, that is contradictory to the known laws of human nature [*ibidem*, 480].

Overall, the above observations suggest that the first modern efforts to build a “science of society” rested on a sharp naturalistic view centered on two premises:

1. The social world is continuous with the natural world; therefore, the same scientific method can be applied, with sensible adjustments, to the study of both natural and social phenomena;

2. human beings are biological entities; therefore, to make full sense of human social behavior it is essential that its biological bases – in particular, the “physiology of brain” – be taken into proper account.

Now, to what extent has sociology remained faithful to these naturalistic principles in the course of its development? Not much, alas: through the years, the analysis of social phenomena has progressively distanced itself from a full-fledged naturalism, driven by the search for an identity of its own. As far as the first premise is concerned, it is well known that the idea of a material continuity between nature and society – coupled with the notion of a methodological unity of the social and natural sciences – has been disputed by many scholars of social phenomena since the very beginning. In the second half of the Nineteenth century, the German philosopher Wilhelm Dilthey (1833-1911) opposed his view to those of Comte and Mill, rejecting the continuity of the scientific study of nature and society and stressing, instead, that the subjective, meaningful character of human conduct has no counterpart in nature [Giddens 1978]. Expressly, Dilthey drew a methodological distinction between the natural sciences (*Naturwissenschaften*) and the human sciences (*Geisteswissenschaften*), claiming that whereas the former merely describe and conceptualize (*begreifen*), the latter – dealing with ends and values – aim at understanding (*verstehen*) [Ross and Kilzer 1953].

Dilthey’s reaction to the idea of a natural science of society did not go unheeded and, through the years, has attracted a growing number of sociologists. Today there exist several varieties of anti-naturalistic stances in sociology, all of which share a common denominator: the conviction that there is an ontological discontinuity between the social world and the natural world and, therefore, there can be no methodological unity between the social and the natural sciences. Basically, this view rests on the following assumption: while the natural world exists independently of our perception and possesses invariant properties, the social world is an ever-changing, intersubjec-

tive creation of self-reflecting human agents who act intentionally and meaningfully [Turner 1991; Williams 1999]. The social world, then, cannot be treated as a material object, but must be seen as a symbolic entity that emerges from the human mind [Hughes 1980]. It follows that whereas the properties of the natural world “may be known objectively by human observers, those of the social world must be studied subjectively through a strategy of interpretation” [Williams 1999, 51]. Accordingly, the social sciences must adopt a method of inquiry distinct from that of the natural sciences, namely one based on “interpretive understanding” of human action and interaction [*ibidem*, 88-90].

The emergence of several sociological perspectives positing an “ontological leap” between nature and society, together with their large acceptance among scholars of social phenomena, indicate that the principle of methodological unity on which the original science of society rested has been rejected – implicitly or explicitly – by a significant part of contemporary sociology. What about the second premise, i.e., that concerning the biological bases of human social behavior? It goes without saying that the adherents to interpretivist sociologies – because of their very tenets – are largely indifferent to, or critical of, any attempt to incorporate biology into the analysis of social phenomena. This attitude, however, goes far beyond the limits of interpretivism and extends to the large majority of contemporary sociology: regardless of their methodological stance, “most sociologists rarely concede that biology has much to offer to their efforts to explain human social behavior beyond acknowledging that the brain endows humans with the ‘capacity for culture’ via language and symbolic communication. Consequently, most sociological inquiry today proceeds apace absent any connection to biology” [Machalek and Martin 2004, 456].

As Tooby and Cosmides [1992] have put it, sociologists tend to be skeptical of the usefulness of biology in the analysis of human social behavior because they remain stuck to the *standard social science model*, according to which *a)* it is culture, not biology, that accounts for most of the variation observed in social behavior, both within and across human societies; and *b)* social phenomena are irreducible to psychological or biological elements. As we can see, we are presented with yet another dualism here, namely one opposing nature to culture, genes to environment, innateness to learning; and although biologists have long demonstrated that these are false antinomies and all phenotypic traits – social behavior included – are the product of the *interaction* between a genotype and an environment, most sociologists keep analyzing social phenomena ignoring this fundamental fact or denying its relevance to the explanation of human behavior [van den Berghe 1990; Wilson 1998].

As I mentioned above, it is not surprising that the biological bases of human social behavior are generally neglected by the supporters of interpretivist sociologies, since this is just a logical consequence of their militant anti-naturalism. On the other hand, one would expect more favorable feelings from those sociologists who incline to the opposite methodological view. In fact, this is not so. A noteworthy example, in this regard, is “analytical sociology,” the *nouvelle vague* of scientific sociology that aims at explaining social phenomena in terms of their underlying mechanisms. In spite of the ambitious (and, in many ways, commendable) program of this approach, its manifesto – Peter Hedström’s *Dissecting the Social* [Hedström 2005] – contains not even a tangential reference to the role played by biological mechanisms in the shaping of social behavior. Raymond Boudon, another leading exponent of analytical sociology, has been a bit more explicit in expressing his skepticism on the possibility of resorting to “obscure biological forces” to explain human behavior [Boudon 2002]. It should be clear that, from a naturalistic point of view, Hedström’s omission and Boudon’s skepticism are hardly justifiable, since they are at odds with any serious attempt to generate truly mechanistic – i.e., deep – explanations of social phenomena.

Overall, the above observations suggest that, in most part, contemporary sociology has turned its back on the full naturalistic approach to the analysis of society envisioned by the earliest originators of the discipline. A great many sociologists, today, look at the social world as a separate reality, one where humans seem to be not biological organisms made of flesh and blood (and genes), but rather spiritual entities living in a purely symbolic universe. At best, this means to have an incomplete view of many social phenomena and waste the chance to have a fuller grasp of their underlying mechanisms.

Things, however, are starting to change as the advances in evolutionary biology, behavioral genetics, and cognitive neuroscience shed new light on the understanding of human behavior. As we will see in the next section, more and more sociologists are becoming aware of this knowledge and try to incorporate it in their research. The time has come to bring back nature into the scientific study of social phenomena.

### **Social Sciences and Natural Sciences: What Connection?**

Following the pioneering efforts of such scholars as Pierre van den Berghe [1975; 1981], Lee Ellis [1977], Ivan Chase [1980], Joseph Lopreato [1984], Alice Rossi [1984], and Luciano Gallino [1987], in the last two decades a small but growing number of sociologists have started to take seriously the idea that human social behavior is the result of long-term evolutionary processes, both cultural and biologi-



cal [Machalek and Martin 2004; Sanderson 2008]. The slow but steady diffusion of this attitude has favored the development of fresh theoretical perspectives on social phenomena, as well as the undertaking of new empirical research aimed at integrating the findings of such disciplines as evolutionary biology, behavioral genetics, and cognitive neurosciences into the sociological investigation of human social behavior.

The interest for evolutionary thinking and the biological bases of human social behavior has become so vivid among some sociologists that, in 2004, a new Section-in-Formation on *Evolution and Sociology* was established within the American Sociological Association; the Section has become a regular ASA section in 2006, and in 2008 its name has been changed to *Evolution, Biology and Society* to highlight the interest of many of its members for biosocial processes. Sociological journals have not remained indifferent to this movement, too: letting regular articles aside, between 2006 and 2008 no less than four journals have dedicated a special issue to exploring the possible connections between sociology and the natural sciences – the present Symposium being the fourth in this series.

In 2006 *Social Forces* hosted the first of these special issues, edited by Guang Guo and titled “The Linking of Sociology and Biology.” In introducing the articles making up the issue – dedicated to such topics as the relationship between testosterone and social behavior, the behavioral plasticity of non-human primates, the co-evolution between genes and culture, and the genetic bases of status attainment – Guo [2006, 148] observed that “[t]aking genetic heritage or other biological factors into account promises a fuller understanding of social outcomes and a more precise understanding of the roles of social context. Recent advances in molecular biology are making it possible to explore how the interactions of social, behavioral and genetic factors affect sociological outcomes.”

Two years later – on November 2008 – Guo edited another special issue on “Society and Genetics,” this time on the pages of *Sociological Methods & Research*. On that occasion, Guo [2008, 160] spelled out three important reasons for integrating genetics into sociological analysis: “First, if genetic variants influence human traits and behaviors, incorporating genetics will improve predictions of sociological models. Second, taking into account genetic effects will yield more accurate estimates of social environmental effects on human traits and behaviors. (...) Third, introducing genetic influences into sociological analysis may reveal gene-environment interactions, in which social-environmental influences may be present only in a subgroup (defined by genetic variants) of the analysis sample.” As we can see, in Guo’s view establishing a close connection between sociology and genetics means not to surrender the study of social phenomena to the natural sciences, but rather to sharpen the analytical tools of sociology itself.

In 2008, a special issue on sociology and genetics – edited by Peter Bearman – was published also by the *American Journal of Sociology*. In his introduction to the issue, Bearman [2008, vi] clarified that the goal of the issue was “to open up new avenues for answers to the question, What can we learn about social structure and social processes, and what can we learn about our accounts about social structure and process, by ‘thinking about genetics?’” The ten articles that make up the issue tackle this question in a variety of ways, but all of them concur to demonstrate how “thinking about genetics” can substantially improve sociologists’ ability to describe and explain social phenomena.

The present Symposium follows its predecessors in offering some up-to-date reflections on the connections between the social sciences and the natural sciences. Freese’s article discusses “The Limits of Evolutionary Psychology and the Open-endedness of Social Possibility.” The author argues that, in spite of the great expectations aroused by the arrival of the “new science” of evolutionary psychology in the 1990s, today the promises of this discipline remain largely unfulfilled. According to Freese, evolutionary psychology is generally very good at using what we know about our psychologies and societies today to make inferences about the history of our species, but it is much less successful in using reasoning and data about the character of our evolutionary past to generate hypotheses about human social behavior today. The main problem, Freese says, is that evolutionary psychology undervalues the possibilities of human psychology and, by so doing, seems to be unable to predict the vast array of social arrangements that human beings have produced and keep producing nowadays.

In “Sociology and the Behavioural Sciences: Towards a Unified Theoretical Framework of Knowledge” Lucchini, after highlighting the internal fragmentation of contemporary sociology and its conflicts with the other behavioral sciences, explores the possibility that sociology – and the behavioral sciences in general – be enclosed within a common underlying theory based on Darwinian evolutionism, complexity theory, and the developments of neuroscience. In discussing the possible components of such a theory, Lucchini urges sociologists to get rid of the numerous “Cartesian sprites” that still populate their discipline and to adopt a full naturalistic stance freed of any kind of dualism, in particular that opposing nature to society.

Montuschi’s essay, “Should We Still Compare the Social Sciences to the Natural Sciences?,” offers a philosopher of science’s perspective on the relationship between the social and the natural sciences. Montuschi remarks that the history of the social sciences is full of more or less successful attempts to imitate the methods, logic and techniques of the natural sciences. According to Montuschi, however, this is not a useful way to proceed. If any comparison between the social and the natural sciences

has to be made, its aim should be not to single out what is missing from social science in order to qualify as “science,” but rather to point out what and how specific features of the social world qualify for a scientifically domain-conscious type of analysis.

In “The Nature of Social Reproduction: Two Paradigms of Social Mobility,” Nielsen presents a cogent example of the relevance of biology to the understanding of social phenomena. The aim of Nielsen’s article is to devise a model of socioeconomic achievement that integrates two traditionally separate approaches to the study of social mobility: the comparative social mobility research tradition and the behavioral genetic approach. Once applied to the analysis of twin data, Nielsen’s model shows how the behavior-genetic decomposition of the intergenerational association into genetic, shared environment, and unshared environment effects allows for clearer interpretations of the mobility model in terms of degree of meritocracy of the stratification system, and permits consistent reformulations of the predictions of modernization theory and institutional theory.

The adoption of a full naturalistic view in the analysis of social phenomena and the development of a Grand Unified Theory of the natural and social world are the crucial themes tackled by Sanderson in his article “Prolegomenon to a Theoretical Unification of the Social and Natural Sciences.” Like Lucchini, Sanderson points to the fragmentation of contemporary sociology and its isolation from both the other social sciences and the natural sciences, arguing that this situation represents a major obstacle to the advancement of knowledge about social phenomena. To get out of this deadlock, Sanderson proposes to follow the direction indicated by Edward O. Wilson [1998] ten years ago, working towards the unification of the natural and social sciences in a common theoretical framework. Sanderson’s article tries to trace the way toward such a unification, mostly by suggesting the natural science fields and their social-scientific applications that sociologists need to immerse themselves in. The article also makes brief reference to the author’s own provisional theoretical synthesis, Darwinian conflict theory.

Finally, Turner, and Maryanski’s article is a thorough discussion of “The Limitations of Evolutionary Theory from Biology in Explaining Socio-Cultural Evolution.” The authors argue that, in spite of the persistent skepticism of many sociologists, there are now real prospects for evolutionary thinking from biology to be incorporated into sociology; however, there are also limits as to how such integration can be realized. According to Turner and Maryanski, these limits are evident in the study of sociocultural evolution, where a new and more distinctly sociological analysis of selection processes and the evolution of sociocultural formations is needed. In their article, the authors tackle this question by outlining the distinctive features of the evolutionary processes that take place in the sociocultural universe.

Together, the six articles that make up this Symposium offer a broad and diverse look into the opportunities and problems that can arise from integrating biology into the scientific study of social phenomena. They also make it clear that much theoretical and methodological work needs to be done to establish a firm and fruitful connection between the social and the natural sciences.

## Conclusion

At the time when Comte coined the term “sociology” and established his program for the scientific analysis of social phenomena, the continuity between the natural world and the social world was taken for granted, and so was the view that human beings are biological entities. In the course of time, however, many sociologists have rejected, ignored, or simply forgotten the original premises of their discipline, giving thus rise – intentionally or unintentionally – to an anti-naturalistic science of society. It is not clear, yet, whether the substantive “science” and the qualifier “anti-naturalistic” can coexist in the same expression. Indeed, as I suggested in the Prologue, the arguments set forth by the defenders of the anti-naturalistic approach to the study of social phenomena parallel those used by Karol Wojtyła in his discussion of life’s evolution. Wojtyła, however, was clearly taking a theological (i.e., extra-scientific) position and referring to a spiritual (i.e., extra-material) reality. So, what kind of position are anti-naturalist sociologists taking? And what kind of reality do they refer to?

I realize that these questions are likely to be irrelevant to many sociologists who do not care about being regarded as “scientists” and, therefore, can coherently profess their anti-naturalism [Turner 1991; Williams 1999]. On the other hand, those who do care about sociology being a science should think carefully of what this implies. As the articles making up the present Symposium show, there is no clear-cut and ready-made answer to this important question. As I have argued in this paper, however, I believe that the naturalistic premises on which the original sociology was established are a *sine qua non* for any analysis of social phenomena that would like to call itself “scientific.”

First, assuming an ontological and epistemological continuity between the natural world and the social world avoids any resort to mind-body dualism, idealism, or other kinds of anti-materialistic stances that I consider at odds with modern science. Purposes, beliefs, values, ideas, symbols are material entities<sup>7</sup> and, therefore, there is

<sup>7</sup> See, for instance, Churchland [1995], Gazzaniga [2000], Kandel *et al.* [2000], Aunger [2002], Cavalli Sforza [2004], and Bellone [2008].

no need to posit a “separate reality” to study them. As Boyd and Silk [2006, 455] have put it, “[t]he idea that culture is separate from biology is a popular misconception that cannot withstand scrutiny. Culture is generated from organic structures in the brain that were produced by the processes of evolution.”

Second, assuming that the biological bases of human behavior are relevant to a fuller understanding of social phenomena simply means to acknowledge the huge amount of evidence in this regard accumulated through the years by many scientific disciplines. The article of Nielsen included in the present Symposium is an excellent example of this relevance, since it shows how the introduction of genetics into the analysis of social mobility substantially changes our comprehension of the mechanisms involved in the intergenerational transmission of social inequality.

In sum, to study and understand social phenomena it is not necessary to place them in a separate reality, to have man make some sort of “ontological leap.” On the contrary, to advance our knowledge of human behavior it is vital that the social and natural sciences reconcile their views and make for a unified endeavor:

Enough! A century of misunderstanding, the drawn-out Verdun and Somme of Western intellectual history, has run its exhausting course, and the culture wars are an old game turned stale. It is time to call a truce and forge an alliance. Within the broad middle ground between the strong versions of the Standard Social Science Model and genetic determinism, the social sciences are intrinsically compatible with the natural sciences. The two great branches of learning will benefit to the extent that their modes of causal explanation are made consistent [Wilson 1998, 205].

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## Flesh and Blood and Genes

### Bringing (Back) Nature into the Scientific Analysis of Social Phenomena

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Abstract: The present paper introduces this issue's Symposium on the relationship between the social sciences and the natural sciences. It is argued that sociology, in the course of its development, has progressively turned its back on the full naturalistic approach to the analysis of social phenomena envisioned by the earliest originators of the discipline. By so doing, sociology has largely ignored the biological bases of human social behavior, missing the opportunity for a fuller understanding of social phenomena. Things, however, are starting to change: more and more sociologists are becoming aware of the advances in evolutionary biology, behavioral genetics, and cognitive neuroscience, and try to incorporate the findings of these disciplines in their research. The articles included in this Symposium suggest that sociology has much to gain from adopting a full naturalistic approach to the study of society, and indicate several ways in which a fruitful connection between the social sciences and the natural sciences can be re-established.

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*Keywords: methodology of the social sciences, naturalism, anti-naturalism, evolution, sociobiology, behavioral genetics, cognitive neurosciences.*

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