



Evolution & Social Behavior

Summer 2004 Newsletter of the ASA Section on Evolution and Social Behavior Volume 1,
No. 1

Greetings from the Organizer!

Rosemary L. Hopcroft
University of North Carolina at Charlotte

Welcome to the first, and hopefully not the last, newsletter of the new Section-in-Formation on Evolution and Social Behavior of the American Sociological Association. Despite nay-sayers, we seem to have been able to pull this off so far! The last bastion of the academy, Sociology, is now being lapped by the waves of the Second Darwinian Revolution. Thanks to all of you who with your scholarly work and other efforts have helped make this happen.

The purpose of this new section is to create an institutional base within Sociology for a group of scientists with a common stock of knowledge of evolutionary theory and relevant research findings who can constructively critique new research in the area. The progress of any science depends on having such a critical mass of individuals.

This newsletter is meant to be an informal arena for the exchange of information of interest to section members. Please forward to me any such information, including new and forthcoming publications, awards, achievements, funding opportunities, publishing opportunities etc.

It is also meant to be an arena where news and views not appropriate for journal outlets can be aired. So please, if you have something you would like to share with the section membership, please write it out (no more than 2,000 words please) and send it to me at rlhopcro@email.uncc.edu.

At some later point in the development of the section, I also see a journal. However, at present we will have to be content with a newsletter, the specialty journals including *Evolution and Human Behavior & Human Nature*, and whichever of the main stream sociology journals will publish evolutionary work: e.g. *Social Forces*, see call for papers on page 6.

Right now the goal is to transform our section-in-formation to a bona fide section. To this end, we have an organizational meeting scheduled for the upcoming meetings of the American Sociological Association in San Francisco. **It is listed on the preliminary program as Social Behavior and Evolution Section-in-Formation, and is scheduled for 8.30 am on Monday, August 16 (location TBA).** I hope to see you all there! Our responsibilities will include creating a list of nominees for section chair, secretary/treasurer, and newsletter editor; as well as constructing a set of by-laws for the new section. Come and be a part of sociological history-in-the-making!

I look forward to seeing you in San Francisco!

In this issue...

- ***2004 ASA Organizational Meeting Announced, p. 8***
- ***How I became a Bio-Sociologist, by Jonathan Turner, p 2***
- ***Cortisol levels and problem behavior in boys, p. 5***
- ***Special Issue of Social Forces, p. 6***
- ***New Publications of Section Members, p. 6***

How I became, to my great surprise, a bio-sociologist

Jonathan Turner
University of California at Riverside

Like most sociologists, I once believed that biology was irrelevant to sociological inquiry. Although I always was committed to a hard-science view of how sociological inquiry should be conducted and how explanatory theories should be articulated, I became a rabid social constructionist when thinking about the effects of biology on human behavior and social organization. After all, humans had big brains and could create and use culture to regulate conduct, thereby obviating any influence from biology. True, I would admit thirty-five years ago that humans had certain basic drives—sex, food, water, warmth, sociality, etc.—but like most sociologist today, I was unwilling to accept any notion that patterns of social organization were, to any extent, driven by biology. When I think back on my views, they seem absurd. How could any thoughtful social scientist not recognize that humans are animals who evolved like all other animals; and while culture certainly made humans somewhat unique, our capacities for using symbols cannot undo millions of years of hominid evolution.

My views on the relevance of biology to sociological inquiry slowly began to change in the 1970s. My first encounter with those who wanted to incorporate biology into sociology came with reading the works of Pierre van den Berghe. He writes well and is incredibly clever, but even then, I was highly critical of his early view that humans are aggressive, territorial, and hierarchical. The literature on hunter-gatherers simply did not support this analysis of human nature. Later, van den Berghe shifted to full-blown sociobiology, adopting ideas on inclusive fitness, kin selection, reciprocity, and blending these ideas with his earlier speculation on coercion or regulation through hierarchy and territoriality. Like many sociologists, I was threatened, outraged, and irritated at the claims of sociobiologists that the majesty of patterns of human organization could be explained by notions of inclusive fitness, kin selection, and reciprocal altruism. Moreover, I found it hard to believe that models adopted from neo-classical economics and game theory, as these were applied to selection processes, could explain sociological topics. Indeed, in my mind these models could not explain economics, and so, why would they be any more useful in explaining the subject matter of sociology? I still have my doubts about what I now term “extreme sociobiology” which posits a fitness-maximizing dynamic. Natural selection is a conservative process and, hence, selection works in a more minimizing way than often posited by sociobiologists. Also, I found many explanations in sociobiology to be “just so” stories in which some sociocultural trait would be explained by a highly speculative scenario as to how this trait maximized fitness in the distant and unknown evolutionary past. Such stories are very easy to construct; they are generally ad hoc, and they can be constructed ad infinitum. And so, while I was doubtful about extreme sociobiology, I had caught the bug and began to think about alternative ways to incorporate biology into sociology.

The other great influence on my thinking in the 1970s and 1980s was my wife, Alexandra Maryanski, who was trained as an anthropologist but who has been forced to wear sociological clothing. Her work on the network structure of primates and the underlying behavioral propensities that generated these networks seemed to me the best way to think about what natural selection had done to our hominid ancestors. If our distant hominid ancestors were anything like contemporary chimpanzees, the latter’s patterns of behavior could serve as a baseline model that would allow us to see how natural selection had changed hominids since the ancestors of humans and contemporary chimpanzees split into their respective clades.

Another seminal experience came in the early 1990s when Alexandra and I spent six months in Bielefeld Germany as part of a group assembled to study the interface between biology and culture (organized by Peter Weingart). Here, I interacted with William Durham, Rob Boyd, Peter Richerson, Leda Cosmides, John Tooby and others in a very interesting group of intellectuals. My first reaction to evolutionary psychology, as Cosmides and Tooby called their new approach, was very negative because they incorporated the extremes of sociobiology with speculation about unspecified “modules”

in the brain that are responsible for particular behaviors. They appeared to argue that “once we know more about the brain, the modules will be revealed.” Thus, Leda would assert that reciprocity is hard-wired in the brain (not an unreasonable assertion since reciprocity is universal) but she could not specify the areas of the brain responsible for this behavioral propensity. Thus, much of early evolutionary psychology combined speculative “just so” stories about how natural selection had created a module in the brain for a particular behavior, but there was no evidence presented about the module. This vagueness left me highly dissatisfied, and for a good part of the 1990s, I was unconvinced that evolutionary psychology posed a reasonable way to go about understanding how natural selection influenced behavioral propensities in humans.

When I began to study emotions in the mid 1990s, I immediately confronted the problem of how emotions are generated. I had increasingly come to believe that emotions were the key to hominid survival and that, therefore, natural selection had worked on the brain of hominids to expand emotional capacities which, in turn, could be used to increase social solidarity. My wife’s work on apes and her cladistic analysis of the last common ancestor to present-day apes and humans convinced me that hominids, as a kind of ape, were not as “naturally social” as most sociologists and moral philosophers believe. How, then, did low-sociality apes survive on the African savanna as the forests began to recede and expose them to predators without the protection of the forests? Most species of apes did not survive because, like contemporary apes, they were not well organized. Yet, somehow hominids beat the odds, and this fact posed for me an interesting question: How? Long before hominids became culture-using animals, natural selection had found a solution to the problem of making a low-sociality animal more social and, hence, more organized. Thus, I needed to look at other features of human neuroanatomy, aside from our big brains, to explain how hominids were able to sustain organized groups in open-country savanna conditions.

One avenue that natural selection could have taken was to rewire the hominid and eventually human brain to enhance the production and use of emotions to better attuned responses among individuals and, thereby, to promote tighter-knit group structures. But, unlike early evolutionary psychology, I felt it incumbent on me to specify the modules involved in generating the emotional responses that increased social solidarity. My fellow sociologists of emotions were often critical of my early efforts because for many of them, emotions are socially constructed. But for me, this skepticism simply flew in the face of the facts: emotions are so clearly activated within the brain. The work of Paul McLean and his critics such as Joseph Le Douarin, along with others like Antonio Damasio, inspired me to look further into medical textbooks and the broader literature on neurology, where I learned everything that I could about body systems involved in the activation of emotions. When I finally put pen to paper in my book, *On The Origins of Human Emotions*, I realized that I was doing (gasp) evolutionary psychology. I was trying to document in my own “just so” story how natural selection had altered the

neuroanatomy of hominids and eventually humans to make homo sapiens sapiens more emotional, but unlike early evolutionary psychology, I tried to pin point the specific structures in the brain that were altered by natural selection. In other words, I sought to find the modules responsible for varying types of emotional responses. My first efforts have been crude, but at least I am not avoiding the question: Where in the brain did natural selection get to work? And to this day, I am still trying to discover the modules for not just emotional responses but also for other universal behaviors evident among humans.

The end result is that, over the last twenty-five years, I increasingly came to see the merits of what I like to call evolutionary sociology. Humans are evolved apes who were molded by natural selection. Increasing the size of the brain for culture was certainly an important evolutionary path, but the brain did not grow significantly among hominids until a bit over two million years ago. Long before the hominid brain was larger than that of contemporary chimpanzees, then, hominid neuroanatomy had been rewired for not only emotions but other behaviors as well. Culture does not trump these effects of natural selection; it may channel them, but we are still an animal who has certain behavioral dispositions that affect the development of culture and the formation of social structures. Sociologists need to understand these dispositions by speculating on the selection pressures that operated on the body of hominids, especially on neuroanatomy, and by specifying the neurological systems involved in producing particular behavioral propensities. In this way, we avoid the pitfalls of simply asserting that humans have certain needs (for reciprocity, pair bonding, power, territoriality, hierarchy, and so on) without specifying where in the human body these needs are activated. Speculation on how natural selection worked to generate certain behaviors in humans will always to be just that—speculation—but we can give more substance to these speculations by delineating the body systems involved in producing particular classes behaviors as these influence cultural and structural arrangements.

Comparative anatomy can be a very useful tool in isolating the body systems involved. We have detailed measurements of the structures in ape brains that can be compared with their counterparts in the human brain, with the differences all marking the footprints of natural selection since the human line separated from the ancestors of contemporary chimpanzees. These differences have effects on behaviors that, we can assume, had fitness-enhancing value for hominids as they adapted to open-country savanna conditions; and so, we should look for the behaviors that these distinctive structures of the brain influence. Whether we isolate neurological structures first and then try to determine the behaviors that they generate, or alternatively, examine specific patterns of behavior and then seek to discover the neuro-systems involved in producing these behaviors, the goal should always be to connect behavior to a body system. If we do not try to make this connection, bio-sociology will make only vague pronouncements about behavioral propensities—say, reciprocity, altruism, sociality, and other presumably

hard-wired dispositions—that can just as easily be explained away by social constructionists as the product of culture. Even universal behavioral patterns such as reciprocity can be explained away (e.g., all cultures have hit upon these as a mode of integration), but if the neuro-mechanisms involved can be isolated, then socio-biology can make a more compelling case; and the just so story as to how selection altered this area of the brain will be more plausible. Aside from comparing the neuroanatomy of chimpanzees and humans as one way to connect biology, behavior, culture, and social structure, we can also compare humans with other mammals to see how the behaviors of primates in general or humans in particular converge or diverge, again sending us on a search for the biological mechanisms involved.

The dominant science of the 21st Century will be biology, and sociologists risk being left behind if they continue to ignore the simple fact that humans are animals with an evolutionary history that still influences behavior as well as sociocultural formations. We need not posit a biological determinism to recognize that culture, social structure, behavior, and biology interact in complex ways. But we can no longer pretend that biology is a black box and irrelevant to sociological concerns; instead, sociologists must embrace biology and, in so doing, make a place for themselves at the table of the dominant science in this century. Sociology will be better for the effort; and I even believe that we can inform biology, as Comte once argued, because many of the structures of the human brain are the product of selection pressure emanating from the need for hominids to get organized, or die. Biologists are not trained to think about these sociological pressures; sociologists are. I have found, for example, that neurologists are quite interested in my explanations for why particular modules in the brain emerged. I have a story to tell them, one that involves a scenario of how pressures for social organization led to the rewiring of the brain in hominids, and eventually humans. Biologists cannot tell this story, or if they do, they tend to simplify the story in terms of concepts from sociobiology. Inclusive fitness, kin selection, and reciprocal altruism are powerful ideas, as I have finally come to realize, but we can tell an even more detailed and robust story once we ask how pressures for social organization generated selection pressures on the hominid brain. The footprints of natural selection are all over the human body; sociologists need to be more attuned to these footprints rather than dismissing them as “biological reductionism” and other intellectual epithets.

There are many ways to integrate biological ideas into sociological research and theory. I have chosen one that combines comparative neuroanatomy and, to my chagrin, evolutionary psychology, but whatever route is taken, the important point is that sociology can no longer ignore the interaction among biology, behavior, culture, and social structure. Thus, it is heartening to see this effort to create a section with ASA devoted to exploring the ways that biology can inform sociological inquiry, and I would emphasize, vice versa. I can only hope that others undergo the conversion experience that has marked my career. Pioneers like Pierre van den Berghe, Joseph Lopreato,

Timothy Crippen, Richard Machlek, Richard Udry, and others led the way. I followed, often kicking and screaming. Still, my story of how a traditional, mainstream type of sociologists can overcome his initial skepticism and embrace a biological approach can, I hope, be repeated among future generations of sociologists. If sociology does not wake up to the biological revolution occurring around the discipline, we run the risks of being left behind and of becoming less relevant to the new areas of knowledge that will be produced in this century.

A NEW WAY OF MODELING INDIVIDUAL DIFFERENCES IN CORTISOL REVEALS STRONG LINKS TO PROBLEM BEHAVIOR IN BOYS.

Alan Booth
Pennsylvania State University

For many years researchers have had reason to believe that individual differences in the activity of the limbic-hypothalamic-pituitary-adrenal (LHPA) axis are related to behavior problems. Cortisol is a product of the LHPA axis that has an important role in organizing the body's response to change in the social environment (i.e., challenge or threat). However, research linking cortisol levels with internalizing and externalizing behavior problems have yielded inconsistent results. We speculated that the high moment-to-moment variation in LHPA activity requires an analytical strategy that separates variance in cortisol levels attributable to "stable trait-like" versus "state or situational specific" sources. Early morning saliva samples were obtained from 624 youth on two successive days one year apart. Consistent with our expectations, latent state-trait modeling revealed that 70% of the variance in cortisol levels could be attributed to state-like sources, and only 28% to trait-like sources. Lower levels of trait cortisol were strongly associated with higher rates of risk and antisocial behavior in boys but not girls. State cortisol had no relation to internalizing or externalizing behavior problems. Whether the association indicates under-arousal, over-regulation, or increased threshold for stress is still unknown. The study demonstrates that links between LHPA activity and behavior can be masked if the effects of situational influences are not taken into account. It is expected that this study will result in research to confirm whether this strong association confers risk or resilience to behavioral problems.

This study is reported in a paper titled "Low Salivary Cortisol Levels and Externalizing Behavior Problems in Youth" authored by Elizabeth A. Shirtcliff (Postdoctoral Fellow at the Department of Psychology, University of Wisconsin-Madison), Douglas A. Granger (Associate Professor of Biobehavioral Health at Pennsylvania State University [PSU]),

Alan Booth (Distinguished Professor of Sociology, Human Development, and Demography, PSU), and David R. Johnson (Professor of Sociology, PSU).

Call for Papers: Special Issue of Social Forces on Sociology and the Biological Sciences

Social Forces seeks submissions for consideration in a special issue on sociology and the biological sciences. The dazzling development in biological sciences over recent decades has offered sociologists partial or competing frames of explanations for human behavior. Rather than avoid the questions raised by biological sciences and become increasing self-referential, sociologists can roll up their sleeves and take up the many challenges.

We are especially, but not exclusively, interested in papers dealing with how genes in combination with social environment influence human behaviors; how genetic expression is moderated by environment; how legal, social, and ethic issues influence genetic studies; how differences between individuals in stable hormone levels may be related to individual personality characteristics; how changing hormone levels may be related to changing moods or predispositions to behaviors; how various patterns of behavior may stimulate hormones that provoke a different behavior; and how empirical tests of evolutionary theories offer an explanation for social behaviors.

Submit papers by September 15, 2004 to Guang Guo, Editor of the Special Issue on Sociology and Biological Sciences, Department of Sociology, CB# 3210, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-3210. For questions related to style and length, authors should consult guidelines for authors at www.irss.unc.edu/sf/.

New Publications of Section Members

Robert L. Burgess and Kevin MacDonald. *Evolutionary Perspectives on Human Development*, Sage. In Press.

Henk De Vos, "Community and Human Social Nature in Contemporary

Society.” (Accepted by *Analyse und Kritik* (2004) for a special issue on trust on the internet.)

Christine Horne, "Values and Evolutionary Psychology" Forthcoming in *Sociological Theory*.

Richard Machalek. "Evolutionary Biology and Human Nature: The Archaeology of Epigenetic Rules") Forthcoming in *Reviews in Anthropology*.

Richard Machalek and Michael W. Martin, "Sociology and the Second Darwinian Revolution: A Metatheoretical Analysis," by forthcoming in *Sociological Theory*, Vol. 22, No. 3 (pages to be announced).

James Mahoney, "Revisiting General Theory in Historical Sociology," *Social Forces*, forthcoming.

David Rubinstein. Forthcoming in the *Journal for the Theory of Social Behavior*. Wittgenstein and Evolutionary Psychology.

Savage, Joanne and Kanazawa, Satoshi. (forthcoming). "Social capital and the human psyche: Why is social life 'capital'?" *Sociological Theory*

Savage, Joanne and Vila, Bryan J. (2003). "Human ecology, crime, and crime control: Linking individual behavior and aggregate crime." *Social Biology*, 50(1-2), 77-101.

Sessions of interest at the American Sociological Association Meetings, San Francisco, CA, Aug 14-17

1. Integrating Basic Sociobehavioral Processes, Biology, and the Life Course Paper Session: Section on Social Psychology Paper Session.

Saturday, 8/14/2004 from 10:30 a.m. - 12:10 p.m. Organizer(s): Michael J. Shanahan (University of North Carolina, Chapel Hill)

Participant(s):

Michael J. Shanahan - University of North Carolina, Chapel Hill (Organizer)
Michael J. Shanahan - University of North Carolina, Chapel Hill (Presider)

Mary Elizabeth Hughes (Duke University), Linda J. Waite (University of Chicago), John T Cacioppo (University of Chicago), Louise Hawkley (University of Chicago)
Abstract Title: Marital Biography and Health at Mid Life

Elaine Wethington (Cornell University), Barbara Ganzel (Cornell University)
Abstract Title: Life Adversity and Allostatic Load: A Reformulation of Theories on Social Stress

Alan Booth (Pennsylvania State University), David R. Johnson (Pennsylvania State University), Douglas A. Granger (Pennsylvania State University)
Abstract Title: Testosterone, Marital Quality, and Role Overload

Andrew J. Perrin (University of North Carolina, Chapel Hill), Hedwig Eugenie Lee (University of North Carolina)
Abstract Title: Theorizing Environment: Sociological Principles and Biological Effects

Linda K. George (Duke University) Discussant

2. Biosocial Interaction Paper Session: Regular Session. Biosocial Interaction

Sunday, 8/15/2004 from 10:30 a.m. - 12:10 p.m. Organizer(s): Keri M. Lubell

Participant(s):

Omer Gersten (University of California at Berkeley)
Abstract Title: A happy union between biomarkers and the social world? The validity of proximate allostatic load

Thomas W. Volscho (University of Connecticut)
Abstract Title: Money and Sex, the Illusory Universal Sex Difference

Michael J. Shanahan (University of North Carolina, Chapel Hill), Hedwig Eugenie Lee (University of North Carolina), Scott M. Hofer (Pennsylvania State University)
Abstract Title: Social Context, Aging, and Gene-Environment Interactions: Retrospect and Prospect

Rosemary L. Hopcroft (UNC Charlotte)

Abstract Title: Those who can do, except those who think about it: Sex, status and reproductive success

Upcoming Meetings:

Human Behavior and Evolution Meetings in Berlin, Germany, July 21 - July 25, 2004.

American Sociological Association Meetings, San Francisco, CA, August 14-17

**New Section-in-Formation
Evolution and Social Behavior**

**Organizational meeting scheduled for Monday, August 16,
8.30 am to 10.10 am**

***(Location TBA – check program under
session title Social Behavior and Evolution)***

Be There!