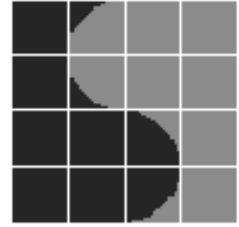




Evolution, Biology & Society



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Message from the Chair

Jonathan Turner
U.C. Riverside

We Need More Section Members!

It is, of course, an honor to be Chair of the section for this year. One goal that I have set for myself is to increase the membership of the section. It has fallen to one-half of what it was when we were officially designated as a section. It may be unrealistic to get back to the 300-member level, but I think that we should try to get to 250 members instead of our current membership of 159. To do so, we all need to recruit. One way is to ask graduate students to join, even if we subsidize their memberships. And, always ask your friends, if only because they are your friends, to join. I did so in our initial effort to get over 300, and many have stayed members. It may be that ASA will not punish us for having one of the lowest memberships of all sections, but they may; and it would be a shame to be disestablished.

Next Year at ASA in Denver

Because our “section day” is the last day of the meetings, we have been given an extra session, bringing us to two open sessions. I am also going to usurp the time for the council meeting (we will find another time for that) before the business meeting for an invited panel. I have asked Tim Crippen and Richard Machalek to organize the two open sessions, while I will organize the panel discussion. Thus, our slate of offerings for Denver looks like this:

Open Session 1: Varieties of Theoretical Approaches in Evolutionary Sociology. Session Organizer: Richard S. Machalek, University of Wyoming. Machalek@uwyo.edu

Open Session 2: Varieties of Empirical Approaches in Evolutionary Sociology. Session Organizer: Timothy Crippen, Mary Washington College. tcrippen@umw.edu

Panel Discussion (invited): Borrowing Ideas from Biology: Limitations? Prospects? Panel Organizer: Jonathan H. Turner. jonathan.turner@ucr.edu

My purpose in the two open sessions is to emphasize my belief that the section must continue to include the full range of empirical and theoretical approaches in what I prefer to call evolutionary sociology. Much evolution is not biological, but purely socio-cultural, and as a consequence, our theories and research must reflect this fact. True, we are animals and evolved like any other animal, and so more biologically oriented approaches are also critical to evolutionary sociology. But, it would be a mistake to limit the section to only Darwinian views of evolution, and so, members and non-members of the section to consider the intent of the two open sessions: to demonstrate the range of theorizing and research on evolution in sociology.

Awards

The section has two awards:

1. Best Book or Article for a Faculty Member. 2012 is an even-numbered year, and so this

award will be given to the best book published over the last three years by a member of the section. So, please think about a good book that qualifies for this award and recommend it to the committee. Generally, publishers are happy to send multiple copies to award committees, and thus, you can contact the publisher to mail copies to the members or just the chair along with your letter of nomination. If the publisher will not provide copies, then the nominator must immediately send a copy to the chair of the committee by March 1, 2012.

The Best Book Award for this year will be chaired by Joan Huber [huber.3@osu.edu], with the other two members of the committee being Robert McAulay [mcaulay@vassar.edu], and Seth Abrutyn [Seth.abrutyn@memphis.edu].

2. Best Article for a Graduate Student. This award is given to the best paper written by a graduate student over the last three years. The student must be a member of the section. Co-authored articles are acceptable, as long as all authors are students. This award carries a \$300 stipend, which is shared if there is more than one author. All nominations should be submitted to the chair of the committee by March 1, 2012.

This award committee will be chaired by Christine Horne [chorne@wsu.edu], with the other two members of the committee being Noah Mark [nmark@uncc.edu] and Christopher Chase-Dunn [chriscd@ucr.edu].

In Closing

Again, please try to recruit. The section tally at ASA for this coming year has just been made. Thus, we have a year to recruit but December and January are the best months because people are renewing their memberships. Thus, recruiting efforts will not be reflected in our tally for the rest of the year but they will be part of the count of the section going forward in 2013. So, get students and colleagues to sign up for the section when they renew their membership.

One thing that has become clear to me is that there is a great deal of interest in evolutionary thinking, especially among younger scholars and graduate students. I get a constant stream of inquiries from all over the world by student who want to pursue study and research on evolutionary sociology in all of its manifestations. So, there is hope for the future for a revitalization of sociology with new evolutionary models, whether these derive their inspiration from biology, ecology, or socio-cultural transformations.

Jonathan Turner, Chair
Section on Evolution, Biology, and Society

Social Disparities, Biological Pathways, and Health and Well-being

**Discussion of 2011 ASA Session on
“Getting the Social Under the Skin”
Sponsored by Evolution, Biology, and
Society**

Yang Yang
Department of Sociology
Lineberger Comprehensive Cancer Center
UNC-Chapel Hill

Congratulations to the 2011 Section Award Winner for Best Paper:

“The Adaptive Rationality of
Interpersonal Commitment”

by István Back and Andreas Flache
Rationality and Society, 2008.

Recent advances in the social and behavior sciences, genetics, medicine and biology are being combined in research efforts that hold the promise to transform all these disciplines and to change our understanding of the processes that lead to optimum social and physical functioning. These papers are good examples of new frontiers of interdisciplinary research. They stem from different theoretical backgrounds, focus on different measures of social and biological processes, and use a variety of datasets covering different stages of the life course. However, they are united by the theme of social disparities, biological pathways, and health and well-being. Disparities in life outcomes lie at the heart of sociology, beginning with Durkheim’s foundational work on the social context and risk of suicide. Health and well-being are arguably the most fundamental positive in human experience. So impeded early development, illness, and disorders all index disadvantage, and differences between social groups in these outcomes define social disparities. My own research on biodemography of aging has taught me a lot about identifying mechanisms at the most precise level of pathogenesis that generate health disparities which unambiguously are jointly affected by social forces and physiological characteristics. For example, my work on cohort analysis as a tool to study social change eventually produced findings that suggest the importance of biological processes in explaining the susceptibility to disease and mortality because cohort variation largely reflect differential

exposures to early life conditions such as malnutrition and inflammatory-infection in utero, during infancy, and throughout postnatal development and lifelong accumulation of these risk factors. And my recent research in sex differences in longevity provides a rich opportunity to develop a multisystems approach including: gonadal hormones, inflammation, different components of physiological stress and the environmental forces that have shaped evolution of sex differences in both physiology and behavior. I've learned that such a multisystems approach is mandatory to understanding and finding solutions to problems arising from reciprocal interactions between a person's social and physical worlds.

These papers jointly shed new light on the social and biological mechanisms underlying social disparities in health and well-being. The biomeasures that appeared in this session fall into two groups: one focuses on genetic markers and the other on biomarkers of physiological functioning. So I discuss the individual papers in these two groups first and the questions common to all later.

First, the Lee et al. paper articulates one potential genetic mechanism linking macroeconomic conditions and family well-being through the lens of parenting behaviors during a time of economic downturn. The paper is innovative in utilizing a clearly exogenous shock, namely, the Great Recession, to measure environmental stressor which enhances its ability to adequately test the GxE interaction. Timing is everything, in this case, as a most recent survey used by the study happened to encompass the recession period, providing a natural experiment to test the treatment effect and its interaction with individual genetic propensities. In addition, there are also extensive robustness checks (such as the estimation of area fixed effects to dispel the confounding of area of residence). Together they largely strengthen the empirical support for the modifying effect of DRD2 gene on the relationship between recession and maternal harsh parenting. A second prominent feature or goal of the paper is to bring together two theoretical frameworks – the stress process paradigm and the diathesis-stress theory. While the empirical support for the

latter is evident through the employment of an exogenous E indicator, the evidence for the former needs some caution in interpretation. Specifically, the authors set out to test two explanations for the effect of recession on parenting suggested by the chronic stress model and the crisis model which predicts chronic long-term effects and acute short-term effects, respectively. The test proceeded by a descriptive analysis of bivariate correlation between the recession interview month and harsh parenting. The support for the crisis model is said to be found based on the pattern that the increases were confined to the recession period in Figure 1. But the chronicity or duration of the effects of a stress implied by theory really pertains to changes within individuals over the life course and can only be assessed with longitudinal panel data. There is really no direct evidence for mothers adjusting their parenting behaviors as the recession proceeds because the data in Figure 1 are from different mothers. So a more complete test of this explanation awaits the availability of data that provide cross-time linkages within individuals.

While the Lee paper takes “diathesis-stress” theory as a point of departure, the Simons paper challenges this perspective by proposing and testing an alternative model of GxE interaction, that is, differential susceptibility hypothesis. While the former model assumes a unidirectional and constant (usually negative) effect of genes in modifying exposures-outcome links, the alternative model emphasizes the plasticity of genes that also confer benefits in certain environmental conditions. The study finds empirical support for this more nuanced explanation in the case of aggressive behavior. I would like to mention three highlights of the paper. First, the measurement of environmental stress. While the same kind of measure in Lee paper stands out in its exogeneity, the measure here is unique in its comprehensiveness. It uses composite scales to encompass multiple indicators for both unfavorable and favorable social environment that are from actual assessment during adolescent years rather than retrospective data. The inclusion of the favorable indicators of course is imperative to test the plasticity hypothesis, of course, but the

new composite scale in and of itself is a contribution for future studies of adolescent behaviors. Second, in addition to dopamine receptor genes similar to that in the Lee study (DRD4), the study also examines the combined effect of serotonin transporter genes to better capture the cumulative genetic susceptibility to environmental effects. Third, the statistical analysis is also extensive, particularly in the test of mediators of the GxE effects on aggression. The establishment of the mediated moderating effects elaborates on the cognitive and emotional mechanisms linking social life and behavior not known before. In sum, the paper has made a lot of good contributions to our understanding of how social get under the skin and is exemplary in depths and strengths of theory, measurement, and analysis. One improvement that can be considered in future research is how to more fully employ the longitudinal panel data to model dynamics of the social and biological processes leading to problematic behaviors like aggression. In the residual change model used for the analysis, the measures of social environment are averaged across four waves of data spanning a long interval of 10 years, during which the cohort developed from early teens to young adults. Is this an accurate depiction of their social environment during this time? Or trajectories of change are more informative. And further, does the hypothesis hold for intraindividual change, that is, do the same genetically susceptible individuals demonstrate more aggression when environment is detrimental but less aggression when it turns benign?

The other two papers focused on a different kind of biomeasures that indicate biological functioning, disorders and morbidity (The Das paper was not presented and hence not discussed in the session). The Lee paper explicates the biological process linking childhood abuse and immune and stress disorders through cortisol dysregulation and found that hypocortisolism is a good candidate explanation for the development of some immune disorders among adults who experienced abuse in childhood. Like the Simon study, it took great effort in constructing a comprehensive measure of adversity that takes into account its multiple facets in types,

severity, and frequency. Although the association of social adversity and psychoneuroimmunological markers is much explored in psychology using animal models and clinical samples, the empirical evidence is sparse in population based studies because of lack of data on stress hormones. This study adds an important piece of information in this regard. There are some issues I would be interested in knowing more about. Because the study hinges on the markers of cortisol as the key mediating factor, it is essential to measure it well and operationalize the degree of deviation in a robust way. The current demarcation of the cortisol deviation into upper and lower quartiles seems to be based on a heterogeneous sample of adults. To what extent are the cut-off points specific to older vs. younger respondents? An explicit assessment of the influence of age on cortisol and immune function in these subjects would be most helpful. Given the focus on the relationship between the timing of stressors and cortisol levels in the background research provided, I expected that some focus would be given on age-dependent variation in cortisol levels and occurrence of immune disorders. The age range of the sample population is stated to be from 25-74, which seems broad given that prior research has suggested that the occurrence of immune dysregulation generally increases with age. In the same vein, how such cut-off points vary depending on gender, race, and other factors. Given the close relation of HPA and SNS systems and other endocrine systems that are highly specific to men and women at different ages, this empirical question merits a further investigation. I was also interested in why hypocortisolism was found more in the frequent FPA/EA group compared to the frequent FPA/EA/SA group. This finding was mentioned in the discussion, but I would be interested to know of any theories that could possibly explain the counterintuitive results. One final question that could be worth investigating is whether other life experiences between childhood and the current study could have impacted the cortisol levels and immune function. For example, did some subjects receive more social and medical support than others, or have stronger social ties that could have alleviated the stress of traumatic

childhood events? The possibility of addressing this question is contingent on the availability of such information in the MIDUS dataset, of course, but is worth mentioning in the discussion.

Last, I would raise two issues to be considered by all research groups for future research. First, in attempting to establish the biological pathways, three studies explicitly tested the mediating effects of biomeasures (be it genetic or hormonal) on the linkages between social stressors and specific outcomes. Some used tests more elaborate than others, but all relied solely on cross-sectional data as we don't really have anything better at this point. However, one should be keenly aware of the limitations in assessing mediating effect using data at one point in time because whether the elimination of an association between X and Y under investigation after entering variable Z is due to the mediating effect of Z or confounding effect of Z cannot be distinguished statistically. Theory must guide inference in this case. So any evidence regarding the mediating effects has to be tentative before the proper temporal order is established. That is, the antecedent variable is measured prior to the mediator variable which is then measured prior to the outcome variable. Second, the theme of this session and most current research funded by NIH is on the search for mechanisms, which is wonderful. As sociologists, however, we should remind ourselves from time to time to step away from exclusive attention to mechanism and think about the bigger picture of the more fundamental causes of illness. As Link and Phelan (1995) powerfully indicated, social conditions are fundamental causes of illness because (1) the health effects of causes of this sort cannot be eliminated by addressing the mechanisms that appear to link them to disease and (2) the association persists even when the linking mechanisms change. From this point of view, the focus of sociobiological theory on explanatory mechanisms would be of limited use if the deeper sociological process at work were ignored. The race-disease link is a good example of the power of the fundamental cause. And they caution us against investing interest in mechanisms at the expense of more fundamental social conditions.

Review Essay on Jonathan Turner & Alexandra Maryanski, On the Origin of Societies by Natural Selection (2008), and Robert Cliquet, Biosocial Interactions in Modernization (2010)

By Frans Kerstholt and Adriaan van Liempt

I. Introduction

Sociology started in the nineteenth century as an evolutionary enterprise. Herbert Spencer and Karl Marx are famous examples. But this changed in the twentieth century. This change is famously exemplified in the words of Talcott Parsons: "Who now reads Spencer...". The same author signaled a return to evolutionism in the sixties (Parsons, 1966), though anti-evolutionary thinking remained dominant in the social sciences. The two books under review are good examples of recent evolutionary social thinking. In particular they show open attitude to recent biological evolutionary research. They convey a general agreement on two issues to do with the evolution of humans and their societies:

1. The biological evolution of humans and the evolution of human societies follow different mechanisms.
2. *Homo sapiens sapiens* is a biological being sharing a number of evolved behavioral propensities, which form the origins of important social mechanisms.

The authors of both books under review here agree on these most general conclusions from evolutionary research and thinking. However, there are interesting differences between the Turner-Maryanski and the Cliquet book: Cliquet is concerned about the way human nature is not really helpful in coping with the problems of life in modern societies. On the other hand Turner and Maryanski, though showing outspoken awareness of possible threats to human life, are in essence

very positive. Cliquet reports on the results of empirical research showing the impact of genetics and evolutionary mechanisms on life in modern human societies. Turner and Maryanski discuss the evolution of primates up to homo sapiens sapiens. Concerning the evolution of human societies from hunters & gatherers to (post)modern societies they focus on the mechanisms explaining transitions type to type. Cliquet is an evolutionary biologist skillfully addressing social issues. Turner and Maryanski clearly position themselves in the functionalist-evolutionary tradition of sociology that started with Herbert Spencer and was rather naively reiterated in Talcott Parsons (1966). As we will see the authors improve on the Parsons version of evolutionary functionalism.

In what follows we will firstly sketch the book by Robert Cliquet followed by a brief analysis of the book by Turner and Maryanski. A critical comparison and appraisal will conclude this essay.

II. Biosocial Interactions in Modernisation

The Cliquet book discusses the most important problems that result from the encounter of our evolved behavioral propensities with the problems of life in (post) modern societies. The book assumes the general descriptive validity of the evolution from hunters & gatherers to (post) modern societies. The book starts with basic data on the evolution of hominids to modern man, i.e. the hominisation process from the Australopithecus Afarensis (Southern Ape from Afar) to Homo sapiens. Important parts of that are bipedalism, and brain growth, but also the appearance of culture and group life.

The positive correlation between brain volume and the use of tools is also an important part of what Cliquet calls the bio-cultural co-evolution of hominids, or biosocial interactions - the mutual influences of biological and socio-cultural phenomena. Approximately from the time that human groups made the transition to simple forms of agriculture (ca. 10,000 years ago) the biological evolution lost it velocity whereas the socio-cultural evolution gained speed.

Cliquet builds on the evolutionary mechanisms introduced by the second Darwinian revolution. The most important of which are: Inclusive fitness (Hamilton, 1963; 1964), Kin selection (Maynard Smith, 1964), and Reciprocal altruism (Trivers, 1971) (10-27). Inclusive fitness and kin selection refer to individuals helping relatives, in that way promoting the survival of family genes. Reciprocal altruism consists in mutually helping behavior in the expectation that the other will return a favor. These behavioral predispositions form the sociobiological foundations of social life. They define our biosocial nature.

Hopcroft (2010), pp. 25-32) gives the following list: selfish behavior, reciprocal altruism, kin based altruism, gender asymmetry in parenting, gender asymmetry and sex differences in mate choice and family roles. This list represents the position of evolutionary psychology that Cliquet also subscribes to.

Our biosocial nature as expressed in the behavioral predispositions was formed by groups of hunters and gatherers in Mid Africa say 100,000 years ago. This is referred to as the so-called Environment of Evolutionary Adaptedness (EEA). Note that Homo sapiens sapiens combines strong drives to co-operation with equally strong inclinations to selfish behavior. In sociology this position is most clearly put forward in the Weberian tradition. It is the most important behavioral assumption in the formal discipline of game theory that underlies a lot of work in economic.

This leads amongst other things to the following research desiderata:

- Sex and gender need to be studied with understanding of the mechanisms of sexual selection – unequal genetic survival between the sexes -and the origin and evolution of our sexual dimorphism (men being taller than women, etc.)
- The study of family structures requires insight into mating strategies.
- Knowledge of selective processes and 'inclusive fitness theory' is required for the understanding of parental investment and fertility behavior.
- The study of social mobility requires knowledge of 'polygenetic inheritance',

inheritance of traits under influence of many genes.

- Knowledge of the evolutionary background of the in-group / out-group syndrome is necessary for the understanding of racism.

Cliquet's Main Hypothesis (34-35)

The human genome that then came about was adapted to the EEA, but not to the new environment of modern science, technology and humanistic values.

Method

In order to test his hypothesis Cliquet chooses to study the most salient manifestations of variation in human societies: individual variation, age variation, sexual variation, family variation, reproductive variation, social variation, racial variation and intergenerational variation. Each dimension of variation also has a maladaptive variant. Cliquet uses the following terms: Individualism, Ageism, Sexism, Familism, Natalism, Classism, Racism and Dysgenism. The maladaptive variants represent parts of our nature that were adaptive in the Environment of Evolutionary Adaptedness.

Individual Variation and Individualism (55-121)

Cliquet shows that many individual variations have clear genetic components. This is true for body length and intelligence (70% inherited) but also for criminal behavior. In the last case genetic factors generally work indirectly.

- Geneticists found a particular cell type that through lower intelligence is related to norm-violating behavior.
- They also discovered a mutation on the X-chromosome, which causes extremely violent and criminal behavior, working that via neurotransmitters.
- From twin studies the insight emerged that that the presence of particular genotypes in criminogenous circumstances can more easily lead to criminal behavior.
- From adoption studies we know that the influence of the biological father on the criminal behavior of the adopted person is twice to

three times as large as the effect of the adoption father (85-95).

Individualism stands for the selfishness and aggressive competition that is strongly called for in modern societies. It is maladaptive because it goes against the cooperation and solidarity that is needed in modern societies where individuals are very dependent on others. Where individualism prevails social protection is weak and many people are denied access to participation in society. Cliquet reserves the term individuality for the adaptive variant (106-109).

Age Variation and Ageism (125-181)

Ageing and death are evolutionary phenomena. Death is related to the fact that after the reproductive period in human life, i.e. after humans passed their genes to their children, the forces of natural selection do not provide additional protection against harmful processes. This makes humans extra vulnerable to harmful – deleterious in the jargon - mutations, which cause death (134-135, 157).

Ageism is defined as “marginalisation based on age and especially prejudice against the elderly” (164). It should be easy to think of many examples of both ageism and the fight against it. Ageism can for instance be seen in lower investment in older workers, higher unemployment and forced, early retirement. Ageism is a form of counterproductive waste.

Sexual Variation and Sexism (185-252)

Gender relations are extremely important in social life and have a clear evolutionary background as can be seen from some striking processes:

- The reduction in sexual dimorphism among the sexes, which is also clearly visible in the considerable overlap in height, weight and intelligence.

A good example is the feminization of the human male during the hominisation process; the body weight of the male gorilla was slightly more than 1.6 times that of the female. This process took millions of years.

- The shift to a more permanent sexual readiness in combination with the increasing

necessity for care of long-lasting dependent infants, led to the development of more enduring relationships and a decrease of male-male competition.

- The control of sexual behavior shifts to large brain hemispheres, which direct behavioral patterns that are more sensitive to learning and conscious mental processes. In this way sexuality takes on an important psychic dimension.

Sexual differences strongly matter:

- Scientifically, being one of the most salient sources of biological variation;
- Socially, being strongly related to inequities in power, rights, privileges, status, and prestige;
- Culturally, being valued differentially in most cultures;
- Biologically, being the major ontogenetic source of human motivation, action, and happiness;
- Genetically, as the mechanism for transmitting genes and producing evolution.

The concept "sexism" has been coined to define ideological and social systems in which sexual variation is used as a primary criterion to assign normatively differentially valued roles and tasks in society. Sexism has prevailed, though to varying extents, during the evolution of mankind. In modern culture only recently women are in a process of slow and gradual improvement of their social position.

There are still opposing forces active:

- The male biological heritage, still oriented towards assertiveness, competition, aggression, dominance, and hegemony;
- The internal dynamics of modern culture, the further progress of which demands competition, risk taking exploration, dynamism;
- Powerful conservatory forces of traditional ideologies, trying to preserve the old (male-dominated) prerogatives and advantages. Amongst them the 'universal' religions' that emerged during the agrarian era, the heydays of sexism (237-238).

In modern society sexism is maladaptive.

Cliquet uses the following arguments:

- Bio-medical knowledge has induced a revolutionary mortality control, allowing fertility control, - the ultimate conditions for women's new opportunities!

- Modern technology is increasingly eroding the traditional male physical advantage with respect to muscular strength and speed. (227-228)

Family Variation and Familism (255- 311)

The family is a typical biosocial group phenomenon. It comprises sexual relations between the adults and reproductive relations between the generations. Siblings share many genes, and in addition have largely common environment, which influences their phenotypical development – the organism's observable characteristics or traits.

Even love, a phenomenon that can be found everywhere, is an evolved feature, selected for its function in meeting the needs of slowly maturing offspring. This is the case despite the existence of arranged marriages and the mildly polygamous nature of our kind (258-261). The famous proposition of Peter Berger, saying that we do not marry because we love each other but that we love each other because we marry, gets biological support here. Enduring and affective partnerships are only partly genetically programmed. This explains the emergence of cultural values and norms that regulate the sexual drives of men and women (261).

The preferences for partners go back to EEA and are surprisingly stable. Three evolutionary theories explain the preference for partners:

- The 'good genes' theory is amply confirmed by the fact that features expressing physical fitness, population average and bilateral symmetry are clearly preferred in mate choice, by both men and women.
- The 'parental investment' theory predicts that women seek men who have the ability and willingness to provide resources that will benefit their children. This includes somewhat older men, due to the correlations between age, income and the possession of valued resources.
- The 'reproductive value' theory explains that women seek youthful and physically attractive partners as potential mates. Men seek for young and beautiful women, a preference anticipated to by women working on their physical appearance (268-273).

These theories are empirically supported and the observed trends are time and culture invariant.

Some consequences

Males are interested in fidelity, given the problem of paternity uncertainty, which promotes male sexual jealousy. Male sexual jealousy can fuel wife abuse and wife beating, even wife killing. Members of both sexes are typically interested in stable relations with one member of the opposing sex. A conspicuous phenomenon in this connection is the so-called 'successive monogamy', which expresses the general preference of people to live together in marriage or marriage-like relations.

In light of these data the prospects of marriage are not bad. The familist influence of conservative circles, e.g. the Vatican and Islamic fundamentalism that see the family as the basic unit of society and oppose birth control is expected to diminish. This expectation is based on the interest in the welfare of children that now is generally shared by the parents.

Male aggression surely needs to be remedied. Nevertheless, the growing influence of individual preferences has also led to situations where individual and societal needs with respect to intergenerational continuity no longer always coincide.

Reproductive Variation and Pro/Anti Natalism, A Paradox (315- 374)

Humans are evolutionary geared to maximize their genetic representation in future generations in the context of constraints set by the environment and their phylogenetic past. Yet the present combination of low fertility and low mortality limits fertility to below replacement levels.

How can this paradox be explained?

Of the many explanations that have been propounded, we pick the two that appeal mostly to us:

- The 'cultural evolutionary hypothesis'. This non-genetic but Darwinian explanation states that traits like low fertility can spread through imitation.

- In the early days only seldom more than two children survived. This might have triggered a psychological reaction through which two children are considered optimal (317-321).

Low fertility relates to effective fertility control, which liberates men and especially women from the constraints and uncertainties of the past. Cliquet expects that in the future prospective parents will be selected on a positive attitude to childbearing. This is related to the enormously increased parental investment in children – e.g. in education –, not only by women but also by the 'new father'. In the long run, below-replacement fertility individuals/couples would be outselected (354-359).

Old-fashioned pronatalism, an ideology that advocates childbearing, is loosing out against the forces of modernity. A shift from quantitative to qualitative reproductive efforts in modernisation is completely in line with the evolutionary trends that resulted in hominisation (359-361).

Social Class Variation and Classism (377-435)

Human societies display differences in wealth, power or prestige. Knowledge and responsibility play important roles here. This requires a particular biological (physical as well as mental) endowment and equipment of the individual.

How do biological variation and social differentiation interplay here?

1. Social status inequalities are in line with the dominance hierarchies in social animal species. The evolutionary background has ultimately to do with differential reproductive fitness, with Darwinian selection (380).
2. The (modern) approach of biosocial interactions is strongly empirically oriented, and considers both genetic and environmental mechanisms (385).

We know that a person's position in the social stratification hierarchy predicts many important biological variables: body size and body build; growth and maturation; health and life expectancy; and very importantly intelligence (394-395).

Both heritage and environmental influences are important here. For example, genetics explains a large part (70%) of the variation in intelligence, but note that 30% is left for environmental factors.

Biology, Social Mobility, Meritocracy and Egalitarianism

Comparisons of the biological characteristics of upwardly mobile people, stationary individuals and downwardly mobile individuals yield clear results: on average, socially upwardly individuals are taller, mature earlier, are healthier, achieve better school results, and perform better on intelligence tests than non mobile and downwardly mobile individuals (397-402).

In addition, many biological or biologically influenced characteristics involved in social mobility show a relatively high heritability: stature; vulnerability towards schizophrenia; intelligence; emotional personality characteristics (407).

Thus, we see a partial genetic differentiation of socio-economic status groups. In other words, equality of opportunity will increase the genetic diversity amongst functionally differentiated socio-occupational categories (414-415).

If we define egalitarianism as equality of opportunity to develop talents, it can easily be reconciled with meritocracy, the assignment of social status through competition or demonstrated talent and competence. However, in such a society an increasing proportion of the population is probably not able to meet the requirements for success. That problem should be carefully attended (420-421).

Racial Variation and Racism (439-502)

Biology has a specific definition of race: "a population that distinguishes itself statistically significantly in its allele frequencies from other populations." (409) This clearly differs from the definitions in the racist theories that we know from our history. Race, ethnic group and state/nation are different concepts. Only race is a biologic concept; ethnic groups are cultural

identities (language, religion); state/ nation is a political concept (441).

Thanks to very recent scientific methods it was possible to construct tree-diagrams that show the historic processes of splitting together with genetic distances between split populations. Ironically this work comes close to pictures of groups that used to figure in racist theories. The most well known adaptations are skin colour and body build adaptations to climate (444-450).

Research into biological differences between populations yielded some clear general results:

- Between-population biological differences show a strong overlapping, though mean values often differ.
- Between-population genetic variation is only a small fraction of the total population genetic variation, that means that people of different racial groups probably have about 99.9% identical DNA (451-452)

A problem

On the basis of the best available culture fair test African Americans turned out to have an average intelligence quotient that is considerably lower than that of European Americans. Is this race or socio-cultural environment? (458) Cliquet suggests that we have to wait for further progress in molecular biology. (465) However, also in this case there is considerable overlap. The heritability of IQ = 0.50. So, there is ample room for social engineering!

Racism, Ethnocentrism and Xenophobia

The in-group / out-group phenomenon lies at the basis of racism, ethnocentrism and xenophobia. Evolutionary mechanisms involved include inclusive fitness, reciprocal altruism. (473-478) What about the adaptedness (or not) of the in-group/out-group syndrome? (479-480) According to Cliquet it was a successful strategy in the environment of evolutionary adaptedness (EEA) and even in agrarian culture:

- Survival and reproductive advantages;
- Defensive or offensive actions against competing out-groups

- Increasing inclusive fitness. It is, however, maladapted to the novel environment of modern culture:
 - Being too dangerous (technological means of mass destruction);
 - It conflicts with the globalisation of commerce, culture and politics;
 - Individual talents and abilities are more important than markers of group identity.
- From experimental social psychological research we know that it is easy to produce hostile in-group out-group relations, which are very difficult to resolve. It takes the appearance of a common enemy to achieve that. A historical example is the hostility between France and Germany after the 1870-71 war. Only after WW2 this hostility disappeared when the Soviet Union became a common enemy.

Intergenerational Variation and Dysgenism (505-556)

Intergenerational changes in the genetic composition and genotypic structure form the essence of biological evolution and are accompanied by phenotypic changes of individuals and populations. Modern culture introduced a number of effects working against natural selection: in medical practices like replacement therapies, but also in differential reproduction with respect to intelligence. That reality can be complex and surprising can be seen in the so-called IQ paradox, i.e. the rise in mean IQ during the 20th century where as a consequence of birth control methods a decrease was expected; birth control having been started among higher educated people. The most plausible explanations invoke environmental influences. (515-519)

Six major ethical dilemmas (559-620)

Intervention versus non-intervention (560-562)

Cliquet thinks that modernization forces to opt for intervention in order to protect the quality of life.

Quality versus quantity (562-563)

In the past quantity 'insured' quality; e.g. high fertility, bountiful harvests etc. In view of

the finiteness of the earth's resources this has to change.

Equality versus inequality (563-564)

The mechanisms producing biological diversity also make victims: unfavourable genetic mutations, ontogenetic accidents, infectious diseases etc. This should be remedied by the creation of social protection systems and the limitation of extreme forms of inequality.

Cooperation versus competition (564-565)

Humans are endowed with drives toward both competition and cooperation. As modern culture will further intensify the tension between individual competition and societal cooperation requires efforts to avoid hyper-individualism and absolute groupism. A balancing shift from competitive toward cooperative efforts is needed.

Out-group versus in-group (565-566)

The modern world is increasingly mutually dependent, which makes in-group relations ever more dangerous. Thus, a shift toward out-group relations is required.

Intergenerational versus Intragenerational Care (566-567)

In traditional societies the wealth transfers from later generations to earlier ones was larger than the transfers in the other directions. This has dramatically changed. Contemporary parents invest huge amounts in their children and grandchildren. The impact of modern culture is such that the future quality of life in society has to be taken into account. Huge parental investments do not suffice any more. Education is a collective good that should be produced in accordance with that quality.

Challenges of Biosocial Source of Variation in Modern Society (567-568)

The discrepancies between the evolutionary based genetic endowment and the demands of the modern living conditions are due to the fact

that the human genome is still largely adapted to the EEA: people neurologically adapted to life in small groups; endowed with strong kin and in-group drives protecting them from other groups; given to resource acquisition because of scarcity; combined high mortality and high fertility and sexual specificities adapted to raising slowly maturing offspring.

In contrast, in modern societies people live in large groups; must limit their fertility; raise offspring that takes ever longer to mature; see - or rather don't see - in-group drives losing their protective qualities; feel the clash between traditional values and norms and the demands of modern life.

Adaptive Requirements for Further Progress (569-572)

The key to these requirements lies in combating individualism (\neq individuality), ageism, sexism, familism, pro-natalism, classism, racism and dysgenism.

Ageism (572-577)

Is it possible to design policies that at the same time enable the inclusion of older people and resolve the problems of population ageing? Many practices reflect the perception that old people are a cost factor. Crucial is the retirement age, which should be raised, but varied according to circumstances. The rationale for the last point is that it enables an earlier retirement for people for whom working longer years would pose problems.

Sexism (577-582)

Taming of male competitive behavior is a necessary condition for the mobility of women to top positions at a larger scale.

Combating the in-group out-group syndrome (595-597)

- Modernisation offers ethnic groups a new opportunity for full emancipation in the modern world.
 - Paradoxically, this entails the possibility of unwanted in-group out-group tensions, e.g. in the shape of fundamentalism.
- In modern culture, individuals' talents and competences should become more important

markers of group identity for being selected as sexual partner, obtaining resources, or achieving social success.

Cliquet argues against false notions of multiculturalism. Pluralism is a fundamental right in advanced democratic and secularised societies. Immigrants can practice their original beliefs as long as they are compatible with universally accepted basic human rights: individual emancipation, freedom of speech, and sex and gender equality. This implies that a number of premodern practices are unacceptable: social exclusion of non-believers; forced marriages; enforced veiling, honour killings etc.

Evolutionary extinction (608)

This can be nature-induced as did happen before. It can also be human-induced by the use of weapons of mass destruction, anthropogenic climatic climate change, pollution and similar events.

III. On the Origin of Societies by Natural Selection

The Turner- Maryanski book is a surely revelatory book. The most adequate first-sight conclusion is: Biological Evolution and the Evolution of Societies have nothing to do with each other. They are even characterised by different types of natural selection, Darwinian and Spencerian natural selection respectively.

Biological Evolution
This part mainly consists of an explanation of the evolution of primates, with a focus on the divergence of monkeys and apes. The extinction and migration of species are explained in terms of evolutionary biology: changing environment(s), mutations, and neuro-anatomical changes.

Very interesting is the application of the social-scientific techniques of network analysis and the determination of macrostructures. The goal of this exercise is the characterisation of similarities and differences in the social lives of monkeys versus apes:

- The apes appear as relatively solitary, freedom loving and capable of aggression. The

ability to cooperation is not really well developed.

- Daughters marry out the 'family of origin'. This prevents both close mother-daughter relations and also anything close to female-female relations in the 'family of destination'. A central thesis of the authors is that homo sapiens sapiens who is an evolved ape shares these characteristics, which were also present in the last common ancestor of apes.

The Evolution of Types of Human Societies

The central explanandum is the evolution from Societies of Hunters & Gatherers, through Horticultural and Agrarian Societies to Industrial and Post-Industrial Societies.

Differentiation: The Outcome of Spencerian Evolution

The explanations suggested are in terms of social mechanisms borrowed from the 19th century evolutionary sociologist Herbert Spencer. The mechanisms invoked are in essence not evolutionary. They describe balance-restoring processes, which result in multitudes of differentiation. Spencerian evolution builds on differentiation.

A variety of evolutionary processes can be put in motion by so-called selection pressures. Note that Turner and Maryanski use the term selection pressure as an explicit analogy to the Darwinian idea of natural selection. The idea "that there is a limited number of forces that drive the formation of social structures and the cultures that regulate them." (p. 123) These forces originate in one or more of the following features of a society: population, production, distribution, regulation and reproduction. They require people to make adjustments if they are to sustain themselves in their environment. For example, productivity growth may cause distributional problems, the answer to which lies in the selection of a more differentiated system of distribution, etc. Failure to select an adequate system may lead to the disintegration and disappearance of the society that faces selection pressures. Thus, Spencerian evolution also has to do with survival. For that reason the authors coin the concept of Spencerian natural selection. Note

however that Spencerian selection pressures typically are met by behavioral responses of members of the societies involved.

The explanatory strategy

The authors attempt to explain the evolution of the distinguished societal types by assessing which selection pressures were most intense: "For example, in the transition to .. horticulture ... population growth escalated pressures for regulation and production, leading to new forms of economic and political organisation. (p. 124)

The explanations run essentially as follows: The authors reason back from the structure that is known to have differentiated as compared to the older societal type. In the process they suggest selection pressures that plausibly may have caused the observed change.

To give an example, the egalitarian family characteristic for the hunters and gathers is very different from the generally solitary life that we see among apes. It is seen as a response to selection pressures from production: "... in order to protect immature infants and juveniles, selection had to strengthen bonds among males, females, and their offspring. (157)

The structures of kinship, polity, law, religion, economy and stratification are repeatedly differentiated in the transitions to horticultural, agrarian and (post) industrial societies. The mostly plausible explanations result from the line of reasoning illustrated above.

Not all explanations are equally convincing. As examples we will discuss two explanations: one offered for the decisive role of markets for industrial capitalism: the other propounded as the explanation of democracy.

Markets and Industrial Capitalism

The explanation of the immense evolutionary significance of an elaborated system of free markets builds on the historical interpretations and speculations by writers as Fernand Braudel, Max Weber and Georg Simmel. In his books Turner frequently uses complex causal schemes in order to illustrate

important mechanisms. These schemes usually contain retro-causal arrows. We present a simplified version of the explanation. Production growth leads to growth of the volume of trade. This necessitates the further development of law, trade courts and other bureaucracies. The scheme offers a succession of mild selection pressures, the most important ones being productivity and markets.

Democracy

The effects of markets on the selection of political leaders explain democracy, “because in order for markets to be dynamic, they must be relatively free, giving individuals and corporate actors choices in what they buy and sell. (280) Selection pressures from the economy are decisive here.

IV. A Comparative Appraisal

Some General Points

Both books are very useful. We have more criticisms about the Turner and Maryanski book but that might have to do with the fact that they set themselves more difficult problems to solve. To readers with a social science background the book by Cliquet offers the best available, comprehensive introduction to modern evolutionary biology and its implications for human societies. It could be useful to consult additional social science texts (Hopcroft, Nolan & Lenski, Sanderson) After the ‘oversocialised conception of man’ and ‘rational choice theory’ we now have a modestly realistic theory of human behavior, useful for social science explanations. Cliquet avoids the pitfall of biological reductionism that we so often come across these days. An example: The unwarranted leap from the correct observation that all human behavior goes together with brain activity to the statement that all behavior is caused by brain activity.

Cliquet has shown that much more is going on: biosocial interactions. His book is about bio-cultural co-evolution in its many appearances. The part of the Turner and Maryanski book on the evolution of primates is very useful and contains original elements. The

reconstruction of the typical social life of apes is a strong example in this respect. It is an example of sociology helping biology. The attention – not discussed above – given to the evolution of emotions and their connection to cognitive functions in homo sapiens is also very interesting if only if it underwrites the value of the sociology of emotions.

The part on the evolution of societal types is a quest for the precise mechanisms that shaped new types. The point of departure is the general agreement that ‘later’ types are much more differentiated than the ‘earlier’ ones.

However, their success in filling the explanatory gap is questionable. Most explanations offered are plausible. Supporting archaeological knowledge is scarce if provided at all. The historical knowledge advanced is mostly impressionistic and not precise.

The Hominisation Process

Cliquet’s view of the hominisation process combines scientific description and valuation. It displays not a belief in progress but a measure of optimism in that regard.

The positively evaluated elements include diminishing sexual dimorphism; improvement of cognitive performance, emotional life and sociability; a considerable decrease of aggression and aggressive competition; increasing inter-group and inter-individual cooperation; and of course, a thorough rethinking of societal values and norms. Turner and Maryanski on the other hand consider homo sapiens sapiens an evolved ape in a specific sense: solitary, aggressive, and not very cooperative. They do not use the more elaborated concept of human nature that can be found in evolutionary psychology. As a consequence they miss the fact that we are capable of both conflict and cooperation. The authors argue that the modern ‘free market’ and ‘democratic’ society is well adapted to the preferences of their ‘evolved ape’.

Diagnoses of Modern Societies

Cliquet is very explicit about his values. His rejections of aggressive competition in modern society and the affirmative attention given to

the treatment of losers, e.g. in social security, safety nets and similar programmes identify him, to be sure with our consent, as a protagonist of the North European welfare state.

Cliquet concurs with the results of extensive economic historical and comparative research. Peter Lindert has demonstrated that, going by the economic growth realised, these European welfare states did fare about as well as the 'liberal' economies of the USA and Britain. Moreover, these welfare states also reduced inequalities to a pleasant extent.

It appears as somewhat paradoxical that by our evolved nature we have behavioral predispositions for both cooperation and competition and despite that a modern society did emerge in which aggressive competition strongly prevails.

The Spencerian explanations that Turner and Maryanski offer for the 'rise of well developed markets' and 'democracy' do not match the results of recent quantitative research. This should not be too surprising as the conjectures of Turner and Maryanski are based on historical speculations by some great authors who did not conduct the meticulous research needed to answer the questions involved.

Our position is based on some of the main results of historical and quantitative research by the econometrician Daron Acemoglu and colleagues. They found that rise of Europe towards the Industrial revolution was made possible by the fact that the commercial elites of England and the Dutch republic took over political power and improved their countries scores on the central growth promoting variables that emerged from econometric analyses. These are: 'limits to the power of the executive', and 'protection of property rights'. According to the logic of multivariate research their validity is not limited to the above-mentioned countries. They must also be considered independent of the level of differentiation of societies.

The argument can be extended. The main rivals to England and the Dutch Republic were Spain and Portugal. These late feudal countries were much more differentiated than both small Western European countries. At the time they did not really respond to strong

Spencerian selection pressure that may be assumed. We know this is possible according to the conceptual apparatus used by Turner and Maryanski. Nevertheless a lack of refutability can be observed here.

Turner and Maryanski argue that the modern 'free market' and 'democratic' society is well adapted to the preferences of their 'evolved ape'. We suspect some American ideology is invested in the 'market' and 'democracy' story of Turner and Maryanski. Moreover, their 'evolved ape' was virtually absent from the evolution of societal types during period between the 'hunters & gatherers' and modern societies. During that long time only a tiny minorities could afford the advantages of being an 'evolved ape' as described by Turner and Maryanski. We doubt whether these minorities even did that. Do evolved apes constantly forge strong coalitions against the rest of the population? This reduces the credibility of the conclusions by Turner and Maryanski.

Differentiation

Cliquet does not discuss this issue. That successful adaptations do not always involve differentiations can also be inferred from Jared Diamond's *Guns, Germs, and Steel*. The book contains a marvellous natural experiment. A group of hereditary homogeneous people migrated from Southern Asia. Parts of them ended at different distances from the region of departure. The longest trajectory covered ended past New Guinea in the Pacific. Diamond observed that all groups responded very well to the different environments they found themselves in. Societies ranging from hunters & gatherers, to simple agrarian societies were brought about. The levels of differentiation were different, and also different from the differentiation characteristic for the society of departure. Conclusion: Optimal Adaptations do not always show further differentiation.

We can go further. The list of important dedifferentiations from Tilly clearly refutes the position of Turner on the general relation between evolution and differentiation. The list goes as follows: "linguistic standardisation, the development of mass consumption, and the agglomeration of petty sovereignties into national states" Tilly adds: " Differentiation

matters little to other important social processes such as capital concentration and the diffusion of world religions.” (Tilly, 1984, p. 48)

Functionalism

Cliquet is not explicit on functionalism. His treatment of religion offers some clues. The major monotheistic religions emerged during a particular stage of the evolution of mankind and still bear the signs of that origin. This frequently leads Cliquet to criticisms of their maladaptive positions in modern society (e.g. on fertility control and gender relations). Cliquet bases his views on what modern societies require for their functioning. Is this functionalism rejuvenated? If it is, then we must say that this functionalism, unlike that in sociological ‘grand theory’, is parsimonious and empirical founded. Functionalist thinking has always had a stronger foundation in biological sciences.

Turner and Maryanski knowingly situate themselves in the evolutionary-functionalism sociological tradition. We read the book as an improvement of Talcott Parsons’ (1966) argument. Parsons presents a theory of the evolution of human societies. Key concepts are differentiation, evolutionary universals and evolutionary upgrading. The formal style of the book is outspoken Spencerian. The substantive arguments are almost completely borrowed from Max Weber.

The book by Turner and Maryanski builds on more (sociological) authors than just Weber. The ugly lawlike concepts of evolutionary universals and evolutionary upgrading have disappeared. Nevertheless, the book is still Spencerian, which can be seen in the proud use of the concept of Spencerian natural selection. We consider that concept unwarranted immodest and for that matter misleading. We must admit, though, that the differentiation of societal types is an accepted fact and waiting for satisfactory explanations. Thus, Turner and Maryanski asked the right questions, but failed to come up with the right answers.

Future progress is surely to be expected from continued mutual enhancement of evolutionary biology, archaeology,

anthropology, sociology and the new discipline of world history. Both books reviewed here are part of that movement.

References

- Daron Acemoglu and others, 2001, The Colonial Origins of Comparative Development: An Empirical Investigation, *American Economic Review*, 91, pp. 1369-1401
- Daron Acemoglu and others, 2005, The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth, *American Economic Review*, 95, pp. 546-579
- Robert Cliquet, 2010, *Biosocial Interactions in Modernisation*, Brno, Masaryk University Press, pp. 693
- Robert Boyd and Joan B. Silk, 2009, *How Humans Evolved*, W.W. Norton & Company, New York. London, 5th edition, pp. 474
- Robert Cliquet, 2010, *Biosocial Interactions in Modernisation*, Brno, Masaryk University Press, pp. 693
- Jared Diamond, 1997, *Guns, Germs, and Steel: The Fates of Human Societies*. W.W. Norton & Company, pp. 480
- Rosemary L. Hopcroft, 2010, *Sociology – a Biosocial Introduction*, Paradigm Publishers, Boulder and London, pp. 362
- Frans Kerstholt, mei 2006, Afbraak verzorgingsstaat brengt duurzame sociale averij: de kosten en baten van verschillende typen verzorgingsstaten (Destruction of Welfare State entails social damage: costs and benefits of different types of welfare state), *Socialisme & Democratie*, 63, pp. 53-57
- Gerhard Lenski, 2005, *Ecological-Evolutionary Theory: Principles and Applications*, Paradigm Publishers, Boulder and London, pp. 251
- Peter H. Lindert, 2004, *Growing Public: Social Spending and Economic Growth Since the Eighteenth Century*, 2 Volumes, Cambridge University Press
- Peter H. Lindert, 2007, *Welfare States, Markets, and Efficiency: The Free Lunch Puzzle Continues*, Presented at Van Leer Jerusalem Institute, 17 December

- Patrick Nolan & Gerhard Lenski, 2009, *Human Societies: An Introduction to Macrosociology*, 11th Edition, and Boulder and London, pp. 409
- Talcott Parsons, 1977 (1966), *Societies: evolutionary and comparative perspectives*, Prentice Hall, Englewood Cliffs NJ. pp. 269
- Stephen K. Sanderson, 2007, *Evolutionism and Its Critics*, Paradigm Publishers, Boulder and London, pp. 373
- Peter N. Stearns, *World History: the basics*, Routledge, London and New York, 2011
- Charles Tilly, 1984, *Big Structures, Large Processes, Huge Comparisons*, Russell Sage Foundation, New York, pp. 176
- Jonathan H. Turner, 1985, *Herbert Spencer: A Renewed Appreciation*, Sage Publications, pp. 160
- Jonathan Turner & Alexandra Maryanski, 2008, *On the Origin of Societies by Natural Selection*, Paradigm Publishers, Boulder and London, pp. 365

Summary of 2010 Didactic Seminar

At the 2010 ASA meetings in Atlanta, David Franks and Jeff Davis presented a Didactic Seminar emphasizing the social nature of the brain. Almost 40 people bought tickets at a cost of approximately \$30 a piece. Franks takes this to mean that many sociologists are becoming interested in neurosociology. Much of the content of the seminar was taken from his recently published book *Neurosociology: the nexis between neuroscience and social psychology*. Springer Press 2010. What follows below is selected from the seminar. Others selections will appear in the next issue of the news letter.

Some generalizations about the human Brain

A. The brain is highly reactive. In sensory deprivation tanks brains will create their own environments. This seems in order to

have something to which it can react. It also produced out of the body experiences.

B. Use it our lose it.

The brain is so reactive that it's cells die if they aren't used. Children allowed to indulge in temper tantrums do not learn to use their relatively weak cognitive pathways to work down and control the robust ones already existing in the so-called limbic system. Use it or lose it is as true for the young as it is for the old.

C. The brain is a tinkerer

New structures don't come from the blue as perfect solutions It must build on the past. This constrains the new and the new constrains the old. As remarkable as the brain is it is far from perfect.

D. The brain is a projector. It projects things that are not there on to its environment. This is obviously true for emotion. This renders two epistemologies dead in the water: Tabula Rasa (the brain is not an empty slate and the environment does not write itself on our brain.) This renders correspondence theory, copy theory and analytical philosophy dead in the water.

Rather it revises, selects, edits, (memory). In regard to sight our senses are transducers: they change what is really wave lengths into human hearing, sight, smell etc. We only experience what is accomodateable to the limited structures of our brain According to Buckmaster Fuller we see one millionth of what's out there. In the seminar Prof. Sanderson said;"Less than that".

E. Complexity. Cortex=1/3 of brain. According to Edelman in his *Wider than the Sky*, if you counted one synapse per second it would take you 32 million years to count just those in the cortex.

The brain is thus a 3 lb. universe consisting of several thousand miles of interconnected neurons. Macroscopically it is an infinite cosmos above and microscopically it is an infinite cosmos with.

F. What Drives the Brain? Allegedly Socrates said "Thought by itself produces nothing". In

spite of our highly vaunted Prefrontal lobes, their neuronal systems are relatively weak compared to that of the “limbic” system. (See B. above). Thus, it is usually argued that emotion drives the brain and its power to organize brain process is certainly remarkable. Nonetheless, more of the brain is given over in one way or the other to motor processes. This is critical to an understanding of mirror neurons, intersubjectivity and the social behaviorist position that action is primary. ...words subserve action not the other way around. In many ways brain science has important implications for philosophical positions. In this case, it sustains the Pragmatism of George Herbert Mead.

In What sense is the Brain Social?

A thoroughly social statement about the human brain is found in Leslie Brothers' (1997) *Friday's Footprint: How Society shapes the human mind*. Oxford Press:

“while our individual brains are singular and self-contained, the processes on which they depend for functioning are social ones.” We have seen that there is no fully working human brain without the presences of other brains. The functioning brain is social in the sense that any given brain is completely dependent on other brains for its development. Without question, the synaptic brain is contained in our individual skulls but the intangible thought-processes which these synapses make possible depend on a social environment with other actors who are engaged in everyday public discourse and interaction”. (Brothers 1997 and 2001)

“Just as chromatin proved to hold the key to the mystery of inheritance, human conversation holds the key to the mind.” (Brothers 1977:xii)

“ we take the first step in bridging the gap between minds and brains by acknowledging that culture arises from the mutual influences which humans have on each other. “This linguistic framework forms the living content of mind, so that the mind is communal by its very

nature: it cannot be derived from a single brain in isolation”. (Brothers 1997: xii.)

In the above Brother's makes clear that her basic unit of analysis is interactional. This is a major distinction between Neurosociology and social neuroscience coming out of psychology.

Inborn Brain Mechanisms Encouraging SocialConnections

Cosolino (2006: 301) reminds us that individual neurons do not occur in nature any more than working brains isolated from social interaction exist.

The normal human infant is born with a number of inborn mechanisms encouraging his or her social constitution.

Brothers cites a study of 40 infants with a median age of all of 9 minutes who more likely to follow the face-like stimuli on the top right of these four pictures.

Very young newborns imitate facial expressions like raised foreheads and open mouths. Within 36 hours after birth infants open their mouths and stick out their tongues to imitate adults.

One to two month old infants are distressed by spacial separation of face and voice. They know that voices are supposed to come from faces.

Seven to 11 week old babies have a slight tendency to shift their gaze to the expressive eyes when a face's mouth is talking and when we would expect the mouth's movement would attract their attention more.

“Motherese” with its exaggerated facial and vocal signals is a universal adult adaptation to the infant's innate curiosity about expressiveness.

Even blind infants exhibit a social smile.

In the months following birth, these motor reflexes decline presumably because they

have done their job and a very busy infant brain has a lot of other things to accomplish.

The Inherent Tendency to Construct other Persons with Subjective Selves

Brothers argues that another innate response lasting significantly longer than infancy is the tendency to project a concept of the person on others.... or the fact that we see, not bodies, but look at others as “owners of conscious subjective experiences”. In social neuroscience this is called ToM or Theory of Mind.

New Publications of Section Members

Blute, Marion. “Super Cooperators?” Review of Martin A. Nowak with Roger Highfield, *Super Cooperators: Altruism, Evolution, and Why We Need Each Other to Succeed*, Free Press. *Trends in Ecology and Evolution* 26(12) 2011.

Blute, Marion. “Condition-dependent adaptive phenotypic plasticity and gene-culture coevolution.” Commentary on Fincher & Thornhill’s “Parasite-stress promotes in-group assortive sociality: The case of strong family ties and heightened religiosity.” Forthcoming, *Behavioral and Brain Sciences* 35(1) 2012.

Blute, Marion. Review of Lucio Vinicius, *Modular Evolution: How Natural Selection Produces Biological Complexity*, Cambridge University Press. Forthcoming, *Anthropos: International Review of Anthropology and Linguistics* 107(1) 2012.

Scott Deibler, a student from Penn State Harrisburg had an article accepted for publication. The article is titled "Semantically Implied Irregular Inflection" and will be published in the *International Social Sciences Review*.

Faust, Katie.

Department of Sociology and Institute for Mathematical Behavioral Sciences
University of California, Irvine. “Animal Social Networks.” Katherine Faust. Chapter 11 pages 148 - 166 in *The SAGE Handbook of Social Network Analysis*. 2011, Edited by John Scott and Peter Carrington

Abstract:

Many species of animals are social and engage in associations and interactions with conspecifics. These associations and interactions are components of a species’ social organization and, in turn, are prerequisites for the formation of social networks among individuals of the species. This chapter outlines how features of an animal’s social network are circumscribed by its social organization including typical group sizes, demographic composition, patterns of dispersal, spatial proximity and subgrouping arrangements, characteristic types of social interaction, forms of communication, and the social contexts in which interactions take place). Since social organization varies among animal species it follows that features of social networks also vary.

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*Neurosociology: the nexus between
neuroscience and social psychology*

David D. Franks
Springer Press

Recently, neuroscientists have presented new research which has a direct impact on many areas of social psychology. These include the evolution of the social brain and the human "self", the social nature of mind, socialization and language acquisition, role-taking (theory of mind), consciousness, intersubjectivity, a balanced social constructionism, human agency and the necessity of emotion for rational decision making. This book integrates glossed-over areas of George Herbert Mead's social behaviorism with current neuroscience and demonstrates how current work on mirror neurons supports the basic tenets of the American pragmatists' focus on the priority of motor behavior and their metatheory of transactional analysis.

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Rosemary L. Hopcroft

In an era of human genome research, environmental challenges, new reproductive technologies, and more, students can benefit from an introductory sociology text that is a biologically informed. This innovative text integrates mainstream sociological research in all areas of sociology with a scientifically-informed model of an evolved, biological human actor. This grounding of sociology in a biosocial conception of the individual actor is coupled with a comparative approach, as human biology is universal and often reveals itself as variations on themes across human cultures. Tables, Figures, Photos, and the author’s concise and remarkably lively style make this a truly enjoyable book to read and teach. Makes a good companion book to Nolan and Lenski’s *Human Societies*.

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