A Review on “*Sociobiology or the Standard Social Science Model?*”

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Introduction

The article is the 11th chapter of *“Philosophy of social science”.* In this chapter, Rosenberg elaborated the context of the recently increasing influence of biology in social science. As stated in previous chapters in this book, holism, together with functionalism, faces the same problems that need to be explained urgently. In the absence of divine or human designers, we are not able to explain where the functions of social facts came from, and the explanation proposed by holists and functionalists are often considered teleological that use future effects to explain its very cause.

The doubt about how social facts arose led Durkheim and his followers to conceive of social wholes of various kinds as quasi-organism, and its “cells” are composed of individual person in it. The application of theories vindicated in biology to social science has prompted a revolution on the paradigm of social science. In this critique, I suggest that some properties of these biology-vindicated theory are not totally consistent with human society, and thus the application of them on social science should be more careful and explaining perspective should be more thorough.

Darwinian Explanation of Functions

To show why biology theories has strong impact on social science, we have to first examine the idea proposed by Charles Darwin, namely its world famous theory of blind variation and natural selection. Natural selection had successfully found out a solution to why human beings or other creatures have certain traits, or “functions” but not others in terms of evolutionary fitness. There are 3 main ideas in his theory:

1. There is descent, in which later generations have hereditary traits more similar to their predecessors than others.
2. There is always variation in every generation among these hereditary traits.
3. There are differences in the fitness to the environment of these hereditary traits.

His theory was important because it provided the only scientifically acceptable way to explain how anything can have a function. But when natural selection came to the explanation of social facts it would be confronted with some problems. Human actions are mainly through learning, and human seem to cooperate most of the time, which disobeys the principle of natural selection that maximize individual’s own profits. In order to apply his theory to social science, Darwin argued that natural selection can operates at different levels, both in individual level which encourage selfishness and in group level which encourages cooperation, and in human case the latter won out. However some biologists had found weakness of Darwin’s explanation of natural selection in human case due to the inappropriate analogy of group traits and individual traits. They argued the selection at individual level determines the properties of the group, but not other way around. Such methodological individualism is also widely believed by most economists.

As stated above, application of biological concept on social science became so popular was mainly because the Darwinian natural selection was the only scientifically acceptable way to explain functions. But I would doubt that why natural selection is considered as an acceptable explanation of functions. The assumption of natural selection is that every creature are desperate to survive and reproduce, so the natural selection can apply. But it doesn’t explain “why creatures are desperate to survive and reproduce”. Is this the “function” of the universe? Or…? In my view, I think that natural selection is not so different from other explanation for functions in their essence, they mainly differ in “time scale” that natural selection provides a large time scale and cross-generation explanation of biology (or social) facts. Large time scale explanation is thus hard to disapprove, however some details might be lost in such large time-scale theory. So I’m still not convinced that natural selection do provide a contradiction-free explanation to function.

Game Theory-Based Explanation of Cooperative Actions

In order to explain the cooperative behavior of human begins, an important model often being researched in game theory can be discussed. This kind of game is called “prisoner’s dilemma”, in which if two players involved in this game both choose to act selfishly, according to rational choice, the payoff would be much lower than to both act cooperatively. Such conditions are ubiquitous in everyday life. If we adopt the concept of fitness that Darwin proposed, then for both player they would choose to act selfishly. But this would be a contradiction to the common phenomenon of cooperative behaviors in human society. However, fortunately, in real life, nature won’t rarely impose single prisoner’s dilemma on interacting organisms. In most scenario, we are confronted with iterated, repeatedly occurring prison dilemmas. Some scientists thus put effort on research of such scheme. And, as Robert Axelrod and others showed, tit for tat, or conditional cooperative, is the fittest strategy in most iterated PD games. Some other games, such as ultimatum game or stag hunt game, other than iterated PD games, also suggest that cooperative strategy be the fittest. What these evolutionary game theory models show about cooperation, fairness, and equality in behavior is that they could have arisen by natural selection operating on strategy employed by human agents or other creatures.

Adoption of evolutionary game theory seemed to successfully address the problem arose in the explanation of cooperative action. However, there is a question I wonder is that according to above argument, natural selection was backed up by game theory, a rational choice based reasoning approach, and a rational choice based reasoning approach thus must be faced with problems Rosenberg mentioned in previous chapters. How can people really act rationally to maximize their profits? Will the defects in rational choice bring about a more serious problem to the legitimacy of the application of biological concept on social science?

The Rise of Nativists

The debate over newly prospered “nativist” scientist and traditional scientist who adopt a so called standard social science model, or SSSM, was heated up due to the increasing importance and influence of nativist explanation on social science. Such nativists argued that human behavior are mainly led by their hardwired genes in certain environment, not by the process of learning, as contrast to SSSM. In nativists’ view, brain is composed of many functionally specialized *modules.* Such mental modules engage in computational processes, just like biological computers. They are designed to efficiently and quickly solve significant problems in very specific domains. They are hardwired in brain, and therefore can’t be much affected by environmental information, which means that their epistemic powers are bounded. There are already many experimental results supporting nativism, including the detection of free riding behavior in cooperation, the hardwired fast first language-learning capability of newly born children, the capability to feel certain emotions under common conditions…etc.

As a response to so called nativist approach, another question I am curious about is that in real lives, environment are constantly changing. According to natural selection, we are hardwired genetically to play “certain” strategies through our life, and what we will do are mostly predetermined by the reaction of our gene to environment. Then, won’t we fail to survive because our gene are good for survival in environment in “last generation”, but are not for “our generation”? Don’t such “genetically hardwired” reaction to environment is indeed an obstacle for us to get fit into constantly and rapidly changing environment?

Unstoppable Debates Over Nativist and SSSM

The debate over nativism and SSSM never seems to stop. But why is the controversy so heated and widely disputed? According to Rosenberg, it is because the prevalence of nativism will unavoidably affects the public policy and other social institution or ideology people adopt. In such nativists, or socio-biologists’ view, some social facts that are often considered as discrimination or repression, such as sexism, racism, homophobia… , indeed have their “function” for the wellbeing of human society, and actually there are reasonable explanation to such social facts using natural selection and other biological concept.

But in my opinion, even we can find reasonable explanation of the alleged function of these controversial social facts, it doesn’t mean that we can ignore the context of current society. The history of human is relative short, compared with the evolution history of every creature ever, and I think there would be some difficulty for natural selection to be applied in such short period of time (in terms of “genetic evolution between generations”). Everyone who had ever studied senior high school biology would know that the effect of natural selection can only be observed in a large time-scale, say tens or hundreds of generation. However, in the human case, human beings living in different generations led totally different patterns of life, e.g. : Industrial revolution in 19 century and information revolution in recent decades. So, how can we just say the traits programmed in our gene are meant to survive in current generation or society? Aren’t they traits that are appropriate for Homo sapiens that lived hundreds or thousands years ago? Also, evolution is a dynamic approach, providing it was the case. Thus we are all still involved in the process of natural selection, so it is too premature to say that the “functions” of our brain or our society are just what we have now and are best for us.

Conclusion

To sum up, even natural selection and sociobiology do had shed some light on the explanation of how functions, or social facts can exist, and is confronted with relative less problems about its scientificness, its usage on explaining some social facts should be much more careful. Sociobiology is an approach that still have much potential need to be discovered, but we should take a more overall view angle of human history along with the context of current society to come up with not “just-so story” but more thorough explanations.