

Exercise 5.1

Questions to answer about your reading:

1. What efforts does the author make towards showing how their theory may be falsified?
2. What efforts do they make to show how their theory could be made to accommodate competing evidence? Is this ad hoc?
3. To what extent is Popper's criterion of falsifiability (and thus good science) being met? Why (not)?
4. Are there some straightforward ways that this theory can be made falsifiable?
5. Do you think that falsifiability is necessary for a theory to be scientific? Why (not)?

Homework 4

Please briefly write up your thoughts on Exercise 5.1. You can answer the questions one by one, or if you'd prefer you may write a mini-essay summarizing your conclusions about falsifiability and pseudoscience, as illustrated by the text you were reading.

Edgar Hardcastle

The Materialist Conception of History (1978)

The first thing to ask is: What is the Materialist Conception of History?' and I assume that all of you have read something about it, for example the Party's pamphlet on the subject and other material. The Materialist Conception of History is an attempt to explain great social changes that have taken place in history, for example, why Feudalism gave place to Capitalism, and why such upheavals as the French Revolution took place. What was behind these events, and what is the part played in History by struggles between different classes, that is, one class trying to bring about a change and another class doing their utmost to resist the change?

The MCH is not the only attempt to explain History. Opposed to it is the view that what changes society are ideas, and that changes in society are the result of the application of the ideas that people put forward. For example, at a certain stage in British history, people came to accept the idea that slavery should be abolished because, in their language, it was morally wrong. The MCH will ask the question "Why did something that was formerly regarded as being morally right, come to be regarded as morally wrong, after a certain passage of years?"

Engels made an interesting statement about the MCH when he spoke at Marx's funeral. He said "History was for the first time placed on its real basis. The palpable, but previously overlooked fact that men must first of all eat, drink, have shelter and clothing, and therefore must work, before they can fight for domination, pursue politics, religion, philosophy etc., this palpable fact at last comes into its own right".

Marx summarised the MCH in his preface to the *Critique of Political Economy*. It is worthwhile going through that brief statement, and it is useful to break it up into its various sections and note how the argument moves forward stage by stage. He starts off by saying that in the social production of their life men enter into definite relations with each other, corresponding to stages of development of the material powers of production. The sum total of these relations of production constitute the economic structure of society. That this economic structure is the real foundation of society on which is built up the corresponding legal and political superstructure, and "definite forms of social consciousness, the social, political and spiritual processes of life". Marx then goes on to say that it is not their consciousness that determines men's existence but their social existence that determines their consciousness.

Then at a certain stage of development of the material forces of production, these come into conflict with the existing relations of production, particularly property relations. Then there is a phase of social revolution. The economic foundations are then changed, and with them the entire superstructure is more or less rapidly

transformed. No social order ever disappears before all the productive forces for which there is room, have been developed. New, higher relations of production never appear before the material conditions of their existence have matured in the womb of the old society.

This should be read in conjunction with another statement Marx made, which ...comes from Marx's own Preface to *Capital*. "Even when a society has got upon the right track for the discovery of the natural laws of its movement, it can neither clear by bold leaps, nor remove by legal enactments, the obstacles offered by the successive phases of its normal development." This point I shall return to later. Finally, of course, Marx envisaged that the next phase of the evolution of society would be from Capitalism to Socialism.

Another point to look at is how Marx arrived at the MCH. In the speech that Engels made at Marx's funeral he described it as having been that "Marx discovered the law of evolution in human history", This could suggest that Marx achieved this by himself, but Engels went on to put the matter in some perspective when he said "Just as Darwin discovered the law of evolution in organic nature, so Marx discovered the law of evolution in human history."

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The summary of the Materialist Conception of History in the *Preface to the Critique of Political Economy*, is a compressed statement which should be read together with further explanations in Marx and Engels' writings. I would like to deal with what is meant by "the relations of production". The reference from the Preface to the Critique is as follows: "In the social production of their life, men enter into definite relations that are indispensable and independent of their will, relations of production which correspond to a definite stage of development of their material productive forces". ... In other words, Engels was saying that economic relations must not be interpreted narrowly, that they go into a whole field, that they take in not merely the technique of production, but a number of other things as well. In the same letter, Engels emphasised the point that whilst it is the economic conditions which ultimately condition historical development, it should not be overlooked that all the derivative factors, political, juridical, philosophical, religious and artistic, not only interact with each other but also "react upon the economic basis".

Abstract of a Letter from C. DARWIN, Esq., to Prof. ASA GRAY, Boston, U.S., dated September 5th, 1857. [Published with Alfred Wallace, 1858]

1. It is wonderful what the principle of selection by man, that is the picking out of individuals with any desired quality, and breeding from them, and again picking out, can do. Even breeders have been astounded at their own results. They can act on differences inappreciable to an uneducated eye. Selection has been *methodically* followed in *Europe* for only the last half century; but it was occasionally, and even in some degree methodically, followed in the most ancient times. There must have been also a kind of unconscious selection from a remote period, namely in the preservation of the individual animals (without any thought of their offspring) most useful to each race of man in his particular circumstances. The "roguing," as nurserymen call the destroying of varieties which depart from their type, is a kind of selection. I am convinced that intentional and occasional selection has been the main agent in the production of our domestic races; but however this may be, its great power of modification has been indisputably shown in later times. Selection acts only by the accumulation of slight or greater variations, caused by external conditions, or by the mere fact that in generation the child is not absolutely similar to its parent. Man, by this power of accumulating variations, adapts living beings to his wants—may be said to make the wool of one sheep good for carpets, of another for cloth, &c.

2. Now suppose there were a being who did not judge by mere external appearances, but who could study the whole internal organization, who was never capricious, and should go on selecting for one object during millions of generations; who will say what he might not effect? In nature we have some *slight* variation occasionally in all parts; and I think it can be shown that changed conditions of existence is the main cause of the child not exactly resembling its parents; and in nature geology shows us what changes have taken place, and are taking place. We have almost unlimited time; no one but a practical geologist can fully appreciate this. Think of the Glacial period, during the whole of which the same species at least of shells have existed; there must have been during this period millions on millions of generations.

3. I think it can be shown that there is such an unerring power at work in *Natural Selection* (the title of my book [i.e., *Origin of Species*]), which selects exclusively for the good of each organic being. The elder De Candolle, W. Herbert, and Lyell have written excellently on the struggle for life; but even they have not written strongly enough. Reflect that every being (even the elephant) breeds at such a rate, that in a few years, or at most a few centuries, the surface of the earth would not hold the progeny of one pair. I have found it hard constantly to bear in mind that the increase of every single species is checked during some part of its life, or during some shortly recurrent generation. Only a few of those annually born can live to propagate their kind. What a trifling difference must often determine which shall survive, and which perish!

4. Now take the case of a country undergoing some change. This will tend to cause some of its inhabitants to vary slightly— not but that I believe most beings vary at all times enough for selection to act on them. Some of its inhabitants will be exterminated; and the remainder will be exposed to the mutual action of a different set of inhabitants, which I believe to be far more important to the life of each being than mere climate. Considering the infinitely various methods which living beings follow to obtain food by struggling with other organisms, to escape danger at various times of life, to have their eggs or seeds disseminated, &c. &c., I cannot doubt that during millions of generations individuals of a species will be occasionally born with some slight variation, profitable to some part of their economy. Such individuals will have a better chance of surviving, and of propagating their new and slightly different structure; and the modification may be slowly increased by the accumulative action of natural selection to any profitable extent. The variety thus formed will either coexist with, or, more commonly, will exterminate its parent form. An organic being, like the woodpecker or misseltoe, may thus come to be adapted to a score of contingences—natural selection accumulating those slight variations in all parts of its structure, which are in any way useful to it during any part of its life.

5. Multifarious difficulties will occur to every one, with respect to this theory. Many can, I think, be satisfactorily answered. *Natura non facit saltum* [Nature does not make a leap] answers some of the most obvious. The slowness of the change, and only a very few individuals undergoing change at any one time, answers others. The extreme imperfection of our geological records answers others.

6. Another principle, which may be called the principle of divergence, plays, I believe, an important part in the origin of species. The same spot will support more life if occupied by very diverse forms. We see this in the many generic forms in a square yard of turf, and in the plants or insects on any little uniform islet, belonging almost invariably to as many genera and families as species. We can understand the meaning of this fact amongst the higher animals, whose habits we understand. We know that it has been experimentally shown that a plot of land will yield a greater weight if sown with several species and genera of grasses, than if sown with only two or three species. Now, every organic being, by propagating so rapidly, may be said to be striving its utmost to increase in numbers. So it will be with the offspring of any species after it has become diversified into varieties, or subspecies, or true species. And it follows, I think, from the foregoing facts, that the varying offspring of each species will try (only few will succeed) to seize on as many and as diverse places in the economy of nature as possible. Each new variety or species, when formed, will generally take the place of, and thus exterminate its less well-fitted parent. This I believe to be the origin of the classification and affinities of organic beings at all times; for organic beings always *seem* to branch and sub-branch like the limbs of a tree from a common trunk, the flourishing and diverging twigs destroying the less vigorous—the dead and lost branches rudely representing extinct genera and families.