

Evolution and Culture

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Forward by Leslie A. White

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Neoevolutionism is the movement for which this book, *Evolution and Culture*, is a primary source. It is a collection of essays. The article that comes before the book summary has the same names in it as the collection, which is also named in the article. The order of the movements leading up to Neoevolutionism go, Evolutionism, Social Darwinism, Functionalism. After comes Diffusionism, Sociobiology Interaction between genetic and Memetics, Siobiology and anthropology, social psychology, economic competition, universal selection theory.

Neoevolutionism

Neoevolutionism was the first in a series of modern multilineal evolution theories. It emerged in the 1930s and extensively developed in the period following the [Second World War](#) and was incorporated into both [anthropology](#) and [sociology](#) in the 1960s. It bases its theories on empirical evidence from areas of [archaeology](#), [palaeontology](#) and [historiography](#) and tries to eliminate any references to systems of [values](#), be it moral or cultural, instead trying to remain objective and simply descriptive.[22]

While 19th-century evolutionism explained how culture develops by giving general principles of its evolutionary process, it was dismissed by the [Historical Particularists](#) as unscientific in the early 20th century. It was the neo-evolutionary thinkers who brought back evolutionary thought and developed it to be acceptable to contemporary anthropology.

Neo-evolutionism discards many ideas of classical social evolutionism, namely that of [social progress](#), so dominant in previous sociology evolution-related theories.[22] Then neo-evolutionism discards the [determinism](#) argument and introduces [probability](#), arguing that accidents and free will greatly affect the process of social evolution.[22] It also supports [counterfactual history](#)—asking "what if" and considering different possible paths that social evolution may take or might have taken, and thus allows for the fact that

various cultures may develop in different ways, some skipping entire stages others have passed through.[22] Neo-evolutionism stresses the importance of [empirical](#) evidence. While 19th-century evolutionism used value judgments and assumptions for interpreting data, neo-evolutionism relies on measurable information for analysing the process of sociocultural evolution.

[Leslie White](#), author of *The Evolution of Culture: The Development of Civilization to the Fall of Rome* (1959), attempted to create a theory explaining the entire [history of humanity](#).[22] The most important factor in his theory is [technology](#).[22] *Social systems are determined by technological systems*, wrote White in his book,[23] echoing the earlier theory of [Lewis Henry Morgan](#). He proposes a society's [energy consumption](#) as a measure of its advancement.[22] He differentiates between five stages of human development.[22] In the first, people use the energy of their own muscles.[22] In the second, they use the energy of [domesticated animals](#).[22] In the third, they use the energy of plants (so White refers to [agricultural revolution](#) here).[22] In the fourth, they learn to use the energy of natural resources: coal, oil, gas.[22] In the fifth, they harness [nuclear energy](#).[22] White introduced a formula, $P=E*T$, where E is a measure of energy consumed, and T is the measure of efficiency of technical factors utilising the energy.[22] This theory is similar to Russian astronomer [Nikolai Kardashev](#)'s later theory of the [Kardashev scale](#).

[Julian Steward](#), author of *Theory of Culture Change: The Methodology of Multilinear Evolution* (1955, reprinted 1979), created the theory of "multilinear" evolution which examined the way in which societies adapted to their environment. This approach was more nuanced than White's theory of "unilinear evolution." Steward rejected the 19th-century notion of progress, and instead called attention to the Darwinian notion of "adaptation", arguing that all societies had to adapt to their environment in some way. He argued that different adaptations could be studied through the examination of the specific resources a society exploited, the technology the society relied on to exploit these resources, and the organization of human labour. He further argued that different environments and technologies would require different kinds of adaptations, and that as the resource base or technology changed, so too would a culture. In other words, cultures do not change according to some inner logic, but rather in terms of a changing relationship with a changing environment. Cultures therefore would not pass through the same stages in the same order as they changed—rather, they would change in varying ways and directions. He called his theory "multilineal evolution". He questioned the possibility of creating a social theory encompassing the entire evolution of humanity; however, he argued that anthropologists are not limited to describing specific existing cultures. He believed that it is possible to create theories analysing typical common culture, representative of specific eras or regions. As the decisive factors determining the development of given culture he pointed to technology and economics, but noted that there are secondary factors, like political system, ideologies and religion. All those factors push the evolution of a given society in several directions at the same time; hence the application of the term "multilinear" to his theory of evolution.

[Marshall Sahlins](#), co-editor with Elman Service of *Evolution and Culture* (1960), divided the evolution of societies into 'general' and 'specific'.[\[24\]](#) General evolution is the tendency of cultural and social systems to increase in complexity, organization and adaptiveness to environment.[\[24\]](#) However, as the various cultures are not isolated, there is interaction and a [diffusion](#) of their qualities (like technological [inventions](#)).[\[24\]](#)

This leads cultures to develop in different ways (specific evolution), as various elements are introduced to them in different combinations and at different stages of evolution.[24]

In his *Power and Prestige* (1966) and *Human Societies: An Introduction to Macrosociology* (1974), Gerhard Lenski expands on the works of Leslie White and Lewis Henry Morgan,[24] developing the ecological-evolutionary theory. He views technological progress as the most basic factor in the evolution of societies and cultures.[24] Unlike White, who defined technology as the ability to create and utilise energy, Lenski focuses on information—its amount and uses.[24] The more information and knowledge (especially allowing the shaping of natural environment) a given society has, the more advanced it is.[24] He distinguishes four stages of human development, based on advances in the history of communication.[24] In the first stage, information is passed by genes.[24] In the second, when humans gain sentience, they can learn and pass information through by experience.[24] In the third, humans start using signs and develop logic.[24] In the fourth, they can create symbols and develop language and writing.[24] Advancements in the technology of communication translate into advancements in the economic system and political system, distribution of goods, social inequality and other spheres of social life. He also differentiates societies based on their level of technology, communication and economy: (1) hunters and gatherers, (2) agricultural, (3) industrial, and (4) special (like fishing societies).[24]

Talcott Parsons, author of *Societies: Evolutionary and Comparative Perspectives* (1966) and *The System of Modern Societies* (1971) divided evolution into four subprocesses: (1) division, which creates functional subsystems from the main system; (2) adaptation, where those systems evolve into more efficient versions; (3) inclusion of elements previously excluded from the given systems; and (4) generalization of values, increasing the legitimization of the ever more complex system.[25] He shows those processes on 4 stages of evolution: (I) primitive or foraging, (II) archaic agricultural, (III) classical or "historic" in his terminology, using formalized and universalizing theories about reality and (IV) modern empirical cultures. However, these divisions in Parsons' theory are the more formal ways in which the evolutionary process is conceptualized, and should not be mistaken for Parsons' actual theory. Parsons develops a theory where he tries to reveal the complexity of the processes which take form between two points of necessity, the first being the cultural "necessity," which is given through the values-system of each evolving community; the other is the environmental necessities, which most directly is reflected in the material realities of the basic production system and in the relative capacity of each industrial-economical level at each window of time. Generally, Parsons highlights that the dynamics and directions of these processes is shaped by the cultural imperative embodied in the cultural heritage, and more secondarily, an outcome of sheer "economic" conditions.

Evolution and Culture

THE BOOK SUMMARY

The chapter icons are in the shape of dice

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v. Franz Boas has been anti-evolution for ever. William James also dissed the evolutionary approach for obscuring individual initiative and being a creed of oriental fatalism. Then there was Scopes.

But evolutionary thinking is on the march again!

Sahlins will write about specific and general evolution. General is like the large flow of history. Specific evolution is a sequence of history where the forms are functionally interrelated: one gives rise to another.

Thus we account for both multilinear (specific) and unilinear (general) evolution; the big and little pictures.

All the essays are “nonpsychologistic” and “culturalogical.” They stay away from discussions of “free will” and other metaphysics. Rather they look at the harnessing of free energy.

Chapter One - Introduction / page 1

Evolutionary theory has stalled after a brilliant beginning by Spencer, Morgan, and Tylor due to Franz Boas.

It also shrank outside of anthropology, so not all is Boas fault; there was a trend.

In the time of rebirth, though, we should worry about faddism.

Rather than neo-evolutionary, this book seeks to build directly on the work of 19th century evolutionary thinkers like E. B. Tylor. Tylor, for example, made the above distinction between general as stages and specific incidents.

Among evolutionary thinkers, some will and some will not use the word “progress.”

What of the relation between biological and cultural evolution?

7 - Leslie White puts forward a “Grand-movement” view of evolution. Boyd summed this up saying “Evolution, essentially, is nothing but a change in gene frequencies.”

7 - When we choose between wide or narrow we may ask, which perspective is more helpful in understanding the facts normally considered evolutionary?

They choose the wide because it helps to specify precisely the relation between biological and cultural evolution. And it helps to make clear that there are two kinds of evolution; specific and adaptive as well as general or progressive.

Inorganic evolution follows the second law of thermodynamics towards homogeneous random distribution of matter. Life goes towards organization and heterogeneity.

Cultural and biological evolution do not only suggest analogy, they suggest homologous resemblances. Life and culture are energy capturing systems.

Homologous features are like the eye that shows up in many species. Even those who reject the ‘analogy,’ use the same terms: adaptation, specialization, and ecology.

Chapter Two – Evolution: Specific and General / page 12

E. B. Tylor in 1871 distinguished between evolution ‘stage by stage’ and ‘along its many lines.’

In Specific Evolution we have diversity through adaptive modification: new forms from old.

General evolution creates higher forms from lower ones.

Life diversifies, this is part of its adaptation strategy.

Evolution looks at changing phylogeny and taxonomy.

For some species getting larger may be moving forward; for another, getting smaller. We see better than fish, but they swim better.

15 - Improvement is relative to the adaptive problem needing solving. Thus we are led, by American anthropologists to cultural relativism.

17 - A Graph showing Diversity and progress among major lineages of animal life; from protozoa to invertebrates to fish to amphibians to reptiles off of which come birds and mammals.

We also have progress in the four types of primates: prosimian, New World monkey, then Old World, with hominoid as the highest. They are successive, implying more successful adaptations.

A mouse and lizard are contemporaneous, but mouse more recent and so better. What of Eskimo, Sioux, and English?

19 - The well-known biological definition of specific evolution is "a change in the gene frequencies." Specific studies the species as a whole.

Specific and general evolution can be at odds, like when it is better to produce one educated person than 10 uneducated.

20 - "Now to a most important point: to embrace general evolution is to abandon relativism."

Thermodynamic efficiency can be the ratio of input to output. But for them, the key to advance is not how efficiently energy is harnessed, but how much. But how to measure this?

"Level of integration" has three parts: 1) an organism has more parts; 2) when its parts are more specialized; 3) and when the whole is more effectively integrated.

Higher organisms are freer from environmental control than lower. They adapt to a greater variety of environments. They are more intelligent in that they have freer range of motions. Finally, they have greater dominance ranges than other species.

SPECIFIC AND GENERAL CULTURAL EVOLUTION

Cultural evolution too has specific and general types. The anthropologist is dazzled by all the specifics. Culture has diversified as it has encountered different niches in which to adapt.

Herbert Spencer noted that life diverges and then re-diverges.

24 - "Culture provides the technology for appropriating nature's energy and putting it to service, as well as the social and ideological means of implementing the process."

We will look at the culturological mechanics of “invention,” “diffusion,” and “cultural adaptation.”

26 – We speak of the statues of Easter Island or Paleolithic cave art as part of the “cultural outlook,” but to what end is it?

Viewed specifically, a Grecian urn, Chinese vase or Hopi pot all do the same thing.

And many great civilization has fallen, even in the midst of material plenty while the Eskimos tenaciously maintained themselves. When we look at specifics, we are relativists.

27 – Biological and cultural evolution are different in that culture can diffuse between different lines. And different lines may converge by coalescence. Lower ones can borrow and leapfrog advanced ones. Biology cannot reverse itself. Culture does quickly.

In culture we too see parallelism, the same form being invented in different regions.

General evolution discussion follows: Let’s take war for example. Specifically, all tribes have different methods. All are adaptive to the environment. Scales, armies, casualty numbers increase. (using war btw, shows progress does not equate with good).

Is feudalism a stage on the way to modern economies? Feudalism is a stage only in specific evolution; cultures progress and regress. In the general perspective it is an advance and not necessary as cultures leapfrog.

In general evolution, the cultural system proper is the unit of taxonomy. But, how to put one above the other? Thermodynamics and energy sources are two. New energy sources may not be more efficient, but they are more powerful.

Technical innovation can raise efficiency, yet still not stimulate the progressive development of a culture. A culture may choose not to use it. And, then they might and then population goes up and there is fission.

35 – “Progress is the total transformation of energy involved in the creation and perpetuation of a cultural organization. A culture harnesses and delivers energy; it extracts energy from nature and transforms it into people, material goods, and work, into political systems and the generation of ideas, into social customs and into adherence to them. The total energy so transformed from the free to the cultural state, in combination perhaps with the degree to which it is raised in the transformation (the loss in entropy), may represent a culture’s general standing a measure of its achievement.

37 – Chiefless bands are unsegmented (except for families) and usually pre-agriculture. The more developed are segmented into clans, lineages. Also, these are diverse, and the nation state is integrated.

38 – To summarize, “general cultural evolution is passage from less to greater energy transformation, lower to higher levels of integration, and less to greater all-around adaptability.”

SOME IMPLICATIONS

The big implication is that progress is real!

We should stop saying that 19th century anthropological evolutionists were unilinear. They argued for progress. But their omission of specifics was omission. They did not argue against specifics. And, as Spencer quoted above, they recognized divergence as a reality.

42 – The historical orientation of twentieth – century American anthropology and of much of its current evolutionism has raised questions about the relation between ‘history’ and ‘evolution:’ 1) Is evolution to be concerned with historical developments in particular cultures or not? 2) Is environment a relevant variable factor in explaining evolution or not? 3) Is evolution ‘history’ or are these different processes?

White says evolutionists don’t do history. They do general trends. This has caused people to say he is “neoevolutionary.”

Kroeber says evolution is primarily the historic process and that historians “do” evolution. Murdock says “the only cultural processes are historical.” For the introducer, this is just a debate about general and specific to which the answer is both.

But, anthropology needs to take the general position to be complete.

Chapter Three – Adaptation and Stability / page 45

45 – “In both the biological and the superorganic realm, the adaptive process has two characteristic aspects: creative and conservative. On the one hand there is the evolution of *specialized* structures and patterns that enable a culture or a population of organisms to achieve a requisite measure of adjustment to its environmental setting. On the other hand there is a tendency towards *stabilization*, the conservation of the adaptive structures and the modes that have been achieved.”

THE MECHANICS OF CULTURAL ADAPTATION

Using the general or specific lens depends on what you're studying.

White does general. He says a culture consists of three interrelated subsystems: technological, sociological, and ideological. The technological is the primary determinant. The sociological is in the middle and the ideological / philosophical on top.

White thus makes this a closed system. But when we look at adaptation, we are looking at an open system. Specific adaptation is in relation to nature and other cultural systems.

People tend to ignore the cultural ecology. But, we cannot just look at all the groups around Pakistan and consider cultures reaction to the natural setting.

SOME CONSEQUENCES OF ADAPTATION

Culture, differentiating into cultures, has allowed exploitation of large amounts of the earth.

Crowded areas and diverse environs make for divergence. This spread and diverging is called "adaptive radiation."

Here he speaks of Keller's stripping down of the American colonists.

When people specialize, they then radiate via innovations in their area of specialty, so we get more divergence. People understand such diversity due to adaptation, than they do stability.

CULTURAL STABILITY

53 - "A culture is an integrated organization of technology, social structure, and philosophy adjusted to the life problems posed by its natural habitat and by nearby and often competing cultures."

Patents bought by corporations reflect a desire for conservation. Ideological systems too are inherently conservative and backwards-looking, deriving their authority from the past.

The Principle of Stabilization is that a culture at rest tends to remain at rest. And, as a corollary, a culture acted upon will undergo specific changes only to the extent that they can while preserving unchanged its fundamental structure and character.

The ice age and the Yakut, who were pushed out of their environment but would not give up the pastoral horse way are examples.

If change is too rapid and a culture cannot maintain any semblance of itself, it may die.

Chemists, economists, sociologists, biologists and other scientists have all used the term equilibrium. Why are some anthropologists having trouble reconciling stability and change? They don't like the idea of stagnation as it goes against their cultural relativity axiom.

Stability tends to be seen by the generalists and change by American anthropologists and their dedication to what we have called specific evolution.

[This debate correlates to Kurzweil's about change of bodies while retaining our patterns.]

Change can come from acculturation, this depends on 1) the kind of intercultural relationship and 2) their levels of development.

The corporate peasant community was a clearly demarcated sociocultural system, territorially based and self-governing. It was closed. Land was either held communally or privately with selling to outsiders prohibitions. Attitudes keep the peasant culture stable. They have a resignation in the face of poverty, 'a cult of poverty,' and local attitudes. They also had institutional envy and gossip that prevented "upward climbing."

Potlaches got changed to keep the status quo and the staving off of capitalists.

Chapter Four – The Law of Cultural Dominance / page 69

There is specific and general dominance too.

Specific evolution leads to adaptation; general to adaptivity.

71 – If one group makes a technological leap, the other group will not be able to compete until it too takes up the innovation. In nature the outcompeted group often continues to exist in an attenuated way, (reptiles for example).

Domination usually happens via monopoly over a specialization.

DOMINANCE IN CULTURAL EVOLUTION

Advance comes through more varied and effective energy-capturing devices.

There is heterogeneity with expansion, yet also homogeneity in that the system makes copies of itself. Thus we have more specializations and the world is becoming homogenous.

Hunting gatherers have been driven out by those who make more varied and efficient use of energy.

THE LAW OF CULTURAL DOMINANCE

“More efficient systems spread at the expense of don’t exploit energy resources so well.”

He apologizes that they have not yet been able to come up with a way to measure the thermodynamics of systems.

Why was there no agriculture in pre-Columbian California (aside from tobacco)? Because in the plentiful CA environment, hunting and gathering created as much energy as agriculture.

Why did horse riders drive out the agricultural Indians of the plains? The availability of grass and bison.

But Europeans turned it into farmland and out produced the Plains horse riders.

Looks at China expanding South, but being challenged by Northern barbarians who – though they conquered – had to adopt Chinese ways to stay.

85 – As is said, “China cannot be ruled on horseback.” Also, “It is a poor nomad who is the pure nomad.”

Conversely, when the Chinese tried to spread North, they became nomads. The environment made this more efficient.

MECHANISMS OF DOMINANCE

87 - How does a more effective culture type actually dominate and transform less effective types?

Since cultures are naturally conservative, they won't change once well adapted to their environment, pressure must be brought for change to occur.

Sometimes this is military conquest or the threat of same. Nationalism was taken to get out the foreigners, but often used the foreigner’s political concepts and so adopted them.

Cultural ideology often spreads faster than technology. Technology requires infrastructure, but not ideas. This is, of course, written before cell phones.

Of course the French and mother countries also tried to stop colonies from industrializing. Thus many of these nations, such as Ghana, are built from the roof down, so to speak, no infrastructure, but the idea of nation.

So while dominance happens, some niches hold out because the old culture really suits the environment. But, in time, the dominant culture will win out. All areas will be varieties of it.

Chapter Five – The Law of Evolutionary Potential / page 93

Many anthropologists still shy away from evolutionary thought. They want to see how it can be used. This is fair.

How can we test the progress of specific populations and cultures?

One of the virtues of the evolutionary approach is that it makes anthropology relevant to modern life. Evolution allows us to forecast the future.

Cultures increase their efficiency by adaptive specialization. This is specific evolution. The opposite is directional without reference to local conditions.

If all cultures were to become perfectly adapted, due to the Principle of Stabilization, evolution would halt. Thus evolution happens *despite* being adapted in culture.

Paradoxically, we say higher forms have more heterodox functions. But, as one culture dominates another, we have homogeneity increasing.

The Law of Evolutionary Potential states: The more specialized and adapted a form in a given evolutionary stage, the smaller its potential for passing to the next stage. Therefore, a corollary is: Specific evolutionary progress is inversely related to general evolutionary potential.

We must note that evolution is a zig zag, not a straight line of progress. This misunderstanding is mirrored in Marx's idea that revolution will lead to progress. It lead to retrogression and assassination.

The Phylogenetic Discontinuity of Progress rule states that advanced forms do not usually lead to the next advance, it is the retarded ones.

You can see this in backwards nations that leap frog by having all new equipment and infrastructure. His example is Germany passing England.

H. Stuart Hughes noted that USA is to Western Europe as Rome was to Greece: A more primitive offshoot of an older civilization. The author wishes this had been formulated as an evolutionary law.

THE LAW ILLUSTRATED

The Egyptians had writing. It was advanced for its time, but cumbersome. The people stuck with it, however. And the Phoenicians, who had no previous writing, came up with the alphabet.

Older people do not usually make new scientific discoveries. They stick to the paradigm they championed. New guns, with nothing rise up with the new. Agriculture likely bloomed in a place that was not naturally fertile.

China has great potential because it is behind.

THE PRESENT AND FUTURE OF AMERICA.

We might get slothful due to our success. We are hated around the world. Why has the industrialization we associate with advance led to dictatorships in China and Russia? Why are they mad and out to conquer the world? Why did industrialization not lead to enlightened democracy there?

One, we evolved naturally, China and Russia skipped straight into industrialization.

Much of our growth happened with limited capital in a mom and pop way. And, we had no previously industrialized nation to rival us: Western industry was the first. Our prior Feudal system and aristocracy were broken up over long time.

They rise via revolution, not a slow evolution, they leapfrog according to the law of Evolutionary potential.

We are not used to thinking of dictatorship as having a cause. We think we bucked the normal tendency for dictatorship when our wise forefathers started our nation.

A state is as strong as it needs to be.

Our war to win the minds of these potentially exploding new nations (who need strong states to launch) will require an infrastructure to succeed. To the extent that we need others to exist, we must supplement states or see them go communist if they are to succeed. This is a concomitant to the successful spread of our ideas, and our science, leading all to want to industrialize.