Savage Minds Occasional Papers No. 4

Culture and Ethnology

By Robert Lowie

Edited and with an introduction by Alex Golub

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Savage Minds Occasional Papers

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Lowie, Robert. 1917. Culture & Ethnology. Boni & Liveright: New York.

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Introduction

Robert Lowie was one of the most polemical of the Boasians -- the phrase 'attack dog' has been used, I believe -- and is remembered today for many things: his role in creating the Berkeley department of anthropology, his ethnography of the Crow, and his work on the nascent field of kinship studies. Undoubtedly, however, it Lowie's defense of Boasian orthodoxy that stands out. In his book *Primitive Society* he forcefully repudiated the Victorian evolutionary theorists that Boas opposed, and towards the end of his life he sparred with Leslie White in the pages of American Anthropologist over the prospects of a revised evolutionary perspective. His undeservedly under-read *The History of Ethnological Theory* is the sort of thing that, frankly, one would expect to see in some sort of Victorian Twitter flipout.

The most widely read piece of Lowie's is the final chapter of *Primitive Society.* It is a chapter that bears rereading and deserves its place in anthropological history, even if his quote about the 'shreds and patches' nature of culture is usually read out of context. But Lowie also deserves to be remembered for *Culture and Ethnology,* a little volume that appeared in 1917. Like many of the Boasians, Lowie aimed to be a popularizer and produced many books designed to appeal to a wide audience by summarizing the findings of the Boasians. *Culture and Ethnology* is one of the many books produced by Boas's first students in the late teens and 1920s which summarized that paradigm that solidified in that time period and which was exemplified in Boas's *The Mind of Primitive Man.*

This number of the Savage Minds Occasional Paper Series presents and edited version of Robert Lowie's *Culture and Ethnology. Culture and Ethnology* is worth reading today because it captures in a nutshell the fundamental arguments of Boasian anthropology and presents them in condensed form. It was originally a series of three lectures given at the American Museum of Natural History in 1917. A fourth and final chapter which focused on kinship was then added to these and the whole were published as a small book. In the book Lowie asks a simple question: how can we study culture, and what causes cultural phenomena? His answer is that culture is a 'sui generis' (Latin for 'of its own kind') force. Each chapter takes up a potential cause of culture -- first psychology, then race, and then environment -- and demonstrates that none of them can explain culture on its own. Culture, he argues, cannot be reduced to any of these things, even though it interacts with them. Neither, he argues, can culture be explained by any universal tendency for all societies to move through the same evolutionary stages.

What causes culture? The answer, for Lowie, is: History. In order to understand the state of any particular culture, we must understand the unique historical circumstances that produced it. These circumstances always include diffusion of culture traits across time and space. For him, to explain the culture of a particular peoples is to write a history of the influences that have shaped it. In making this claim Lowie draws on arguments that were familiar to all Boasians at the time. But while the Boasians are often depicted as particularist to a fault, it is worth noting that Lowie emphasizes that there are recurrent patterns and trends in the ethnographic data that make it possible to help explain particular cases, and which may someday lead to general formulations about culture process.

Culture and Ethnology is now almost one hundred years old, and our knowledge of the human record has increased immensely. It is telling, then, that Lowie's fundamental claims continue to hold up even as the evidentiary ground has shifted under them. Culture cannot be reduced to individual psychology -- in fact, increasingly today philosophers and psychologists understand the individual to be a necessary but not sufficient condition for mind. Lowie's denunciation of biological theories of racial supremacy seems tepid given what we know about biology today. And in an era when our choices of energy consumption threaten the environment itself, it is quaint to think that it may determine us rather than the other way around.

At the same time, American culture still predisposes it adherents to be attracted to reductive, biologistic, and individualistic theories of human conduct. For this reason, Lowie's message is still always already relevant. And for a discipline with the decades of theoretical crust gathered around its core, it is useful to remember what our core argument is -- or at least what it has been for the American anthropological tradition.

For this reason, this book will appeal to graduate students, new faculty, or adjunct lecturers seeking to craft introductory courses in anthropology for undergraduate students. Indeed, you can basically teach this book as it stands -- perhaps with the examples changed to fit your interests and the current state of scholarship -- as the basis for a lecture class on introductory anthropology. For readers interested in anthropology, this book can serve as an introductory course in and of itself, provided one understand that the arguments are correct even if the evidence used to make them now seems out of date.

This number of the Savage Minds Occasional Paper Series presents an edited version of *Culture and Ethnology*. Already a short book, I have compressed it here to nineteen pages. This has been achieved by pruning Lowie's somewhat convoluted style. This piece has been edited for brevity, concision, and clarity. In a few cases I have altered verbs and nouns for agreement when editing the text caused them to disagree. These are indicated with brackets. I have also shortened the text by removing multiple examples used to make a point where only one example is truly necessary. Most importantly, I have omitted the long last chapter on kinship. This is a technical, and not particularly clearly written piece written before standard kinship terminology was settled on. It is difficult to read and, Lowie's claims to the contrary, does not fit very well with the previous four chapters. Readers interested in the history of kinship theory should definitely return to Lowie's original text to read this last chapters. Most readers, however, will not miss it.

I hope that this paper, like the others in this series, will help present early anthropological theory in a form that is accessible to everyone. There is today a tremendous amount of material which is open access, but it is difficult to find, inconvenient to read, and many people do not know where to start looking for it. By curating a selection of important open access work, I hope to make open access resources better known and to raise awareness of the actual history of anthropological theory.

-R
25 Oct 2013
Honolulu

Culture and Ethnology

By Robert Lowie

I. Culture and Psychology

With the beginning of the European war the word 'culture' acquired a sense in English usage which had long prevailed in ethnological literature. Culture is, indeed, the sole and exclusive subject-matter of ethnology, as consciousness is the subject-matter of psychology, life of biology, electricity of a branch of physics. Culture shares with these other fundamental concepts the peculiarity that it can be properly understood only by an enlarged familiarity with the facts it summarizes. There is no royal shortcut to a comprehension of culture as a whole by definition. Every explanation of particular cultural phenomena adds to our insight into the nature of culture. We must, however, start with some notion of what we are to discuss, and Tylor's definition will do as well as any: "Culture ... is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society."

For purely practical reasons ethnology has concerned itself with the cruder cultures of peoples without a knowledge of writing. But this division is an illogical and artificial one. As the biologist can study the human organism as well as the amoeba, so the ethnologist might examine modern America as well as the Hopi Indians. I shall therefore draw upon illustrations from the higher civilizations where these seem most appropriate.

Indeed, it may be best to commence with an enumeration of instances of cultural activity in our own midst. Since there is a tendency to associate with culture art science, and technology, it is well to insist at the outset that these loftier phases are by no means necessary to the concept of culture. The fact that your boy plays 'button, button, who has the button?" is just as much an element of our culture as the fact that a room is lighted by electricity. So is baseball enthusiasm, moving picture shows, bar-rooms, Ziegfeld Midnight Follies, evening schools, the Hearst papers, woman suffrage clubs, the single-tax movement, Riker drug stores, touring-sedans, and Tammany Hall.

These represent the type of phenomena comprised under the caption of culture. They exist and science cannot ignore them. But a question ominous for the worker who derives his bread and butter from ethnological investigation arises. All the phenomena mentioned relate to man as an organism endowed with a higher mentality. Tylor's definition expressly speaks of 'capabilities and habits'. But there is a science that deals with capabilities and habits, to wit, psychology. Can we not simply merge the cultural phenomena in those of psychology?

In seeking light on this subject we must understand what sort of problems arise from cultural facts and connect them with the principles of psychology. A few concrete examples will illustrate the situation.

One trait of our material culture that is indispensable for the propagation of knowledge is the existence of paper. How did we get the art of paper-manufacture? Now we shall search in vain our psychological literature in quest of an explanation. An answer, nevertheless, exists. Europe learnt the art of paper-making from the Arabs, who as early as 795 A.D. had established a paper

factory in Bagdad. These in turn got their knowledge from the Chinese, who must be regarded as the originators of the technique. The answer is satisfactory, is obviously not couched in psychological terms: it is historical.

An objection may be raised here. Though an explanation has been given, it does not account for all aspects of the phenomena we are considering. There is a psychological basis for the invention by the Chinese, the borrowing of this invention by the Arabs, and its transmission from Arab to European. The two last-named processes may not suggest the necessity of a special explanation at all. One may think that all that was required was for the Europeans to watch the Arabs and for the Arabs to watch the Chinese, and presto! the thing was done. But the case is far from being so simple. We know of many instances corresponding to what the biologist calls symbiosis— a condition where distinct communities or countries persist in a division of labor for mutual benefit, each trading some of its intellectual or material products for equivalents secured from the other. In northern Arizona the Hopi Indians occupying three eminences not more than eight miles distant from one another have no perfect uniformity of industrial knowledge. Pottery, which flourishes on the eastern Mesa, is wholly unknown as an art, though constantly used in its specimens, by the people of the central Mesa; a certain type of basketry plaque is made only at Oraibi village; another type is manufactured exclusively on the central Mesa. Conditions more ideal a priori for a transfer of knowledge than among the practically homogeneous neighboring Hopi groups could not be conceived. Nevertheless, it has not taken place. Cultural diffusion, therefore, cannot be taken for granted. We cannot take one people, place it alongside of another, and effect a cultural osmosis in the same way in which we produce a chemical reaction when two substances are brought together under proper conditions of temperature. We are face to face with a psychological condition. But I when we turn to text-books of psychology, we find nothing that fits the case. About choice in general we get ample information. But we may rummage all the psychological seminar rooms in the world and yet shall find no reason why the Arabs learned the technique of paper-making from the Chinese instead of ignoring it or only importing Chinese paper.

Nor are we more fortunate when we turn to psychology for an account of how the original Chinese inventor came to conceive his epoch-making idea. This fact falls under the heading of 'imagination', and about imagination psychologists have much to tell us. We learn that imagination is the power of forming new concrete ideas. Since even the concrete individual idea is complex, being a product of association, its elements may be linked differently so as to produce new combinations. The scientist tries all possible combinations among his elements of experiences, forming a succession of individual ideas, which are rejected until the one appears that adequately represents reality.

We need hardly go farther to realize the impotence of psychological science for illuminating the psychology as well as the history of the paper-making art. The formulation of psychological science is admirable, but it is too general. It explains the invention of the steam-engine and the phonograph, the sewing-machine and the harvester no less than the origin of paper-making. We, however, do not want to know merely what ultimate psychological processes the invention of paper-making shares with all other inventions, but the differential conditions that produced this unique result under the given circumstances. It is as though we asked about a man's character and were told that he was a vertebrate. The type of psychological explanation we want, we shall find in histories of literature, science, and art. When we inquire why Newton closes his treatise on optics with a statement as to the vanity of human things, our curiosity is satisfied when this

expression appears as only one instance of the blending of theological and scientific thought current in his day. It is nonsense to say that these explanations are purely historical; they are psychological, for they take fully into account the subjective attitudes involved in the phenomena studied; and it is hopeless to expect this sort of explanation from psychological science, which deals with a far more generalized form of mental activity.

It is clear that cultural phenomena contain elements that cannot be reduced to psychological principles. The science of psychology does not grapple with the influence of society on individual thought, feeling and will. It deals exclusively with innate traits of the individual. There are phenomena that are acquired and in no sense innate, that are socially and not individually determined. When a Christian reacts in a definite way to the perception of a cross, it is clearly not because of an individual psychic peculiarity, for other Christians react in the same way. On the other hand, we are not dealing with a general human trait since the reactions of a Mohammedan or a Buddhist will be quite different. Individual thought, feeling and volition are co-determined by social influences. In so far forth as the potency of these social factors extends we have culture; in so far as knowledge, emotion, and will are neither the result of natural endowment shared with other members of the species nor rest on an individual organic basis, we have a thing sui generis that demands for its investigation a distinct science.

Does it follow that psychological results are a matter of utter indifference to the ethnologist? In their desire to vindicate for their own branch of knowledge some ethnologists have come very near [to] such a conclusion. To me the case appears in a somewhat different light. Whatever division of labor may be desirable for the economy of scientific work, knowledge as a whole knows nothing of watertight compartments. For specific purposes, the student of culture can call for aid upon all of the other branches of learning. It is a very important cultural problem whether the natives of South America knew the bronze technique, i.e., whether they consciously produced the observed alloy of copper and tin. But how can the ethnologist solve this problem? Only by requisitioning the services of the chemist.

Few would deny that services of the kind rendered by chemistry can also be rendered to by psychology. Indeed, most people would at once admit that the relationship with psychology is likely to be far more thorough-going. A few concrete examples will illustrate how this relationship may be conceived.

The Turkish tribes of western Siberia have a religion based on the belief that certain individuals enjoy the hereditary privilege of acting as intermediaries between their ancestral spirits and the people at large. With the aid of his sacred drum the shaman, as such an intermediary is called, is able to summon the supernatural beings, cure the sick, foretell the future, separate his own soul from his body and send it to the upper realms of light or the nether regions of darkness. Now, although a particular individual inherits the shaman's office from his father, he receives no formal instruction nor does he make any active preparation for his mission. His call comes in the form of a sudden paroxysm. He is seized with a feeling of languor and a fit of violent convulsions, with abnormal yawning, and a powerful pressure on the chest, which causes him to utter inarticulate screams. He begins to shiver with cold, rolls his eyes, suddenly leaps up and madly circles about until he falls down covered with perspiration and writhing in epileptic spasms on the ground. His members are devoid of sensation, his hands grasp without discrimination red-hot iron, knives, pins; he swallows such objects without suffering the slightest injury, and again ejects them from his mouth. Finally, the prospective seer seizes a shaman's

drum and assumes the shaman's office. Disobedience to the spirit's call would spell disaster, madness and death amidst the most horrible tortures.

How can an individual be seized with such a spasm as that described? How is it possible for him to become devoid of sensation? Nevertheless, nothing is more certain than that the account given is substantially correct. It is simply a particular form of nervous affliction very common throughout Siberia and attested by dozens of trustworthy eyewitnesses. Abnormal psychology teaches us that such trances are involuntary and not the result of fraud, that they occur in our own civilization and are accompanied with extraordinary lack of sensibility to pain, in short, psychiatry classifies the observed phenomena and tells us what we are really dealing with.

When, however, abnormal psychology has so far enlightened us, it has by no means exhausted even the purely subjective aspect of the case. How does the prospective shaman seized with his fit know about the shamanistic drum that forms a necessary accessory of his office? How does he know what mode of activity is expected from him? These are not things which he can get directly from his trance for we shall hardly accept the aboriginal theory that he is inspired by the ancestral spirits. He can derive his knowledge only as the member of a group holding certain definite views as to the shamanistic office. The cultural phenomenon, then, even on its psychological side, comprises a very appreciable plus over and above the facts that psychology can explain, and these additional data accordingly require treatment by another science.

My conclusions as to the relation of psychology to culture are the following: The cultural facts, even in their subjective aspect, are not merged in psychological facts. They must not contravene psychological principles, but the same applies to all other principles of the universe; culture cannot construct houses contrary to the laws of gravitation nor produce bread out of stones. But the principles of psychology are as incapable of accounting for the phenomena of culture as is gravitation to account for architectural styles. Over and above the interpretations given by psychology, there is an irreducible residuum of huge magnitude that calls for special treatment and by its very existence vindicates the raison d'etre of ethnology. We need not eschew any help given by scientific psychology for the comprehension of specifically psychological components of cultural phenomena; but as no one dreams of saying that these phenomena are reduced to chemical principles when chemistry furnishes us with an analysis of Peruvian bronze implements, so no one can dare assert that they are reduced to psychological principles when we call upon psychology to elucidate specific features of cultural complexes. The 'capabilities and habits acquired by man as a member of society' constitute a distinct aspect of reality that must be the field of a distinct science autonomous with reference to psychology.

II. Culture and Race

If culture is a complex of socially acquired traits, it might appear that race could not possibly have any influence on culture, since racial characteristics are innate by virtue of ancestry. This, however, by no means follows. In order that certain traits be acquired, a certain type of organic basis is a prerequisite; a bat is not able to acquire human culture through social environment. From an evolutionary point of view it appears very plausible at first blush that within the human species differences in organization should be correlated with the cultural manifestations of varying degree and complexity. There was, undoubtedly, some stage in human evolution where the organic basis for culture had not yet been acquired. Can the several races be regarded as

transitional forms, each possessed of capabilities determining and limiting its cultural achievement? This question can be viewed in two ways. Comparative psychology may give us direct information as to qualitative and quantitative racial differences that would affect cultural activity. Or, we may infer such differences as the only possible causes for cultural differences. Both modes of approach are helpful for a comprehension of the problem.

Until recent years the psychological evaluation of primitive tribes rested largely on the off-hand judgments of travelers and missionaries. With the advent of more exact psychological laboratory methods, these have been applied by competent investigators to aboriginal populations. Unfortunately, the results are somewhat meager. There are technical difficulties, among them the necessity of examining fairly large numbers of individuals in order to get a good sample of the population. Worse still, laboratory methods are most effective in regard to what may be called the lower mental operations, which partake almost more of a physiological than of a strictly psychological character. Clearly, what we should be most desirous of knowing is how primitive compares with civilized man in logical thought and imagination. But these are precisely the things not readily tested, and they can hardly be examined at all without a far more intimate knowledge of the native languages than the investigator is likely to command. Nevertheless, something has been done and I will present the essential results, following Thorndike's convenient summary.

Although some observers have attributed unusual acuity of sense perception to the more primitive peoples of the globe, the investigations of Rivers, Woodworth, and others establish the psychic unity of mankind in this regard. For example, though the Kalmuk are renowned for their vision, only one or two of the individuals tested exceeded the European record, and while Bruner found Indians and Filipino inferior in hearing a watch tick or a click transmitted by telephone, the fairness of these tests for natives unused to such stimuli has been challenged. In their reaction-time tests, widely different groups were very similar. Optical illusions were shared by all races tested, which indicates that simple sorts of judgments as well as sensory processes are common to the generality of mankind. Woodworth subjected his subjects to an intelligence test, demanding that blocks of different shapes be fitted into a board with holes to match the blocks. In speed the average differences between whites, Indians, Eskimo, Ainu, Filipino, and Singhalese are small and there is considerable overlapping. On the other hand, the Igorrote and Philippine Negrito, as well as a group of supposed Pygmies from the Congo proved remarkably deficient. "This crumb," concludes our investigator, "is about all the testing psychologist has yet to offer on the question of racial differences in intelligence." We can simply say that experimental psychological methods have revealed no far-reaching differences in the mental processes of the several races. Even the Igorrote and Negrito deficiency may be due, Woodworth suggests, to their habits of life rather than to their native endowment.

Since exact methods tell us nothing of those higher operations we are most eager to know about, it might be advisable to fall back on estimates by competent observers. Unfortunately, the personal equation enters here to an extent that completely nullifies the value of individual judgments. Travelers in foreign lands are likely to make quite unusual demands on the capacities of the natives with whose aid they are working, and in this way too frequently arrive at an unfair conclusion as to their mental characteristics. It is, at all events, remarkable that unbiased observers who are fairly sympathetic and remain in long contact with a primitive people usually entertain a rather favorable opinion of their powers. Still, these are merely personal opinions and

we must turn to our second method for possibly more objective, if indirect, evidence on the subject. Are, then, cultural differences necessarily the result of racial differences?

In investigating the relations between race and civilization we may employ the method of variation. Making the racial factor a constant, we may inquire whether culture, too, is thereby made a constant, and whether a change in racial propinquity is correlated with a proportionate change of culture. On the other hand, we may start with culture as a constant and inquire whether a change in culture is accompanied by a corresponding change of race.

To begin with the latter method, which may be briefly disposed of: Taking our own type of culture, as represented in western Europe and North America, we find that it is shared by the Japanese, who have already made important contributions to the general civilization of the world in biology and scientific medicine. An obvious objection is that the Japanese are not the originators of our cultural foundation but have borrowed it and merely added a few additional stones to the superstructure. This fact cannot be questioned, but historically the origin of our own modern civilization, too, is largely the product of numerous cultural streams, some of which may be definitely traced to distinct races or sub-races. Our immediate indebtedness to Rome and Greece has been drilled into us with such emphasis in our schooldays that the less said about it the better. That the Greeks were merely the continuators and inheritors of an earlier Oriental culture, must be considered an established fact. Our economic life, based as it is on the agricultural employment of certain cereals with the aid of certain domesticated animals, is derived from Asia; so is the technologically invaluable wheel. The domestication of the horse certainly originated in inner Asia; modern astronomy rests on that of the Babylonians, Hindu, and Egyptians; the invention of glass is an Egyptian contribution; spectacles come from India; paper was borrowed from China. What is right for the goose, is right for the gander; and if the Japanese deserve no credit for having appropriated our culture, we must also carefully eliminate from that culture all elements not demonstrably due to the creative genius of our race before laying claim to the residue as our distinctive product.

In short, the possessors of a culture are not necessarily its originators; often they are borrowers of specific elements of the greatest significance. The same culture may thus become the property of distinct races, as is rapidly becoming the case in modern times. Owing to the extensive occurrence of diffusion the question what a particular people or race has originated becomes extremely complicated; while it is an established fact that important additions to human civilization have been made by diverse stocks.

It may not be out of place to point out that not only the more tangible elements of culture, but very much subtler ingredients are shared by distinct groups of mankind. Common to the ancient Romans, the modern Germans, and the modern Japanese, is the talent for rationalistic organization of administrative affairs. We cannot assume under the circumstances that the Japanese are organically nearer to the Germans than to other Asiatics. These instances seem the more valuable because here borrowing is excluded. The racial factor may in some way be involved. But obviously the same cultural traits may be coupled with different racial characteristics.

But what results from making race a constant? Essential organic change has taken place in the human race during the historic period. Accordingly, when we concentrate on a definite people and follow their fortunes during historic times, we are dealing with a constant from the racial

point of view. It requires no great acquaintance with history to note startling cultural diversity correlated with this stability of organic endowment.

The culture of the Mongol about the beginning of the thirteenth century was that of an essentially primitive people, sharing the shamanistic beliefs of their general habitat and ignorant of writing. Suddenly we find them attaining an extraordinary political importance, dominating Asia and menacing Europe, conversant with several forms of script, practicing the art of printing, and becoming exponents of Buddhism. Today they appear fallen from their high estate, devoid of political power, and their semi-sedentary nomad life again give[s] the impression of primitiveness. These changes are not only independent of the racial factor, but can directly traced to other causes. Buddhism was derived ultimately from India. Under Jenghis Khan both Chinese characters and an alphabet derived from the Syrian, which had been spread through central Asia by Nestorian missionaries, came into use; while another system of writing was based on that of Tibet, and the art of printing was learned from the Chinese. The political predominance of the Mongols was due to a few powerful personalities; and economic factors have been potent agents in the degenerative process of Mongol civilization. In short, we have a group of determinants that are not even remotely connected with hereditary racial traits.

[Another] striking illustration is furnished by the Arabs. Here we have a people of crude civilization suddenly emerging from an unimportant position in the world's affairs to blossom forth not only as a military and political, but a cultural power as well, deriving from Persia and Babylonia the impulse to philological and historical studies, from Byzantium the technique of naval warfare, the art of paper-manufacture from the Chinese, Euclid from the Syrian outposts of Greek culture, and from India the decimal notation. We find further that they were not passive assimilators, but original elaborators and active transmitters of the received elements, to whom European science is under a lasting debt of gratitude and whose art constitutes a highly creditable and individual achievement.

The conclusion suggested by these examples is very strongly corroborated by an examination of our own race. It is clear that all those startling technological advantages that most sharply divide us from other peoples are a mushroom growth little over a century old. In the first half of the nineteenth century matches were unknown and the processes of fire-making were not superior to those of many primitive tribes. The steam-engine and the industrial revolution are of very little greater antiquity. The difference between ourselves and our forefathers is so tremendous that it would seem to be explainable only by very great mental differences, yet nothing is more certain than that their innate mentality was exactly the same. The cultural difference becomes more and more glaring as we proceed backwards. Our Middle Ages compare unfavorably with contemporaneous Arabian or Chinese civilization.

Certainly the racial factor, which is a constant, cannot account for the amazing changes in culture which we encounter in passing from one period of our era to another. If we are interested in explaining these cultural phenomena, we must cast about for some other determinants.

In a subject that is constantly confused by partisanship it is important to make no greater claims than the facts absolutely warrant. It is fair to say that culture cannot be adequately explained by race, and that the same race varies extraordinarily in culture even within a very narrow space of time. But we have not furnished proof that, say, the Central African Pygmies would have been capable of attaining unaided to the level of our civilization. What we can say, however, is this: The Chinese and some of our American Indians did attain a very high level,

which may be equated with that of Europe at a relatively recent period. The difference between European culture then and now cannot be due to hereditary causes, and it would, therefore, be unjustifiable to allege that such causes account for the difference between Europe of today and China or ancient Central America. Generally, the so-called primitive tribes are anything but primitive in the strict sense of the term. Ingenious contrivances, such as the boomerang, occur among the Australians, usually regarded as one of the lowliest of races, and here we also find a remarkable complexity of social organization. The Negroes of Africa are not only conversant with the art of metallurgy, which is possibly their own invention, but are conspicuous for their ability to form large and powerful political states and have shown at least the ability of assimilating the culture of Islam.

As the highly civilized Manchu of today have for their next racial kin very crude Siberian populations, so the white race embraces very primitive as well as highly advanced groups. We cannot wholly isolate the racial factor from others, and we cannot give a demonstration of what the several inferior races, so-called, are capable of achieving under the most favorable conditions. But with great confidence we can say that since the same race at different times or in different subdivisions at the same time represents vastly different cultural stages, there is obviously no direct proportional relation between culture and race. And if great changes of culture can occur without any change of race whatsoever, we are justified in considering it probable that a relatively minute change of hereditary ability might produce enormous differences. An analogy may render the matter clearer.

Suppose that it is of vital importance to lift a heavy weight, say 400 pounds, to which only a single individual has access at the same time. Then a very slight difference in muscular power will either accomplish or fail in producing the desired effect, and the ultimate effect (say in repelling an attack on a fortress under relatively primitive conditions) will be entirely incommensurate with the additional strength required to produce it. So we may readily understand how a slightly greater mechanical aptitude might render one race able to launch a remarkable series of inventions for which another, by barely missing the required degree of development, would be forever debarred. This is only a special form of the Darwinian doctrine of the survival value of small variations, applied to the creation of new cultural values.

Mental endowment is a variable phenomenon within any particular people or tribe. However democratic our ideals, the doctrine that all individuals are born equal can no longer be seriously maintained. Every race must, therefore, be regarded not as representing a continuum of mental values with a certain range of variation. In comparing the different races we must apply the canons used by statisticians in comparing series of variable measurements. Two series may have the same average value and yet differ considerably in range. Now it is obvious that, where the number of individuals considered is small, excessive values are less likely to occur than in a larger series. In a gathering of a hundred men, we are not likely to find a man above 6 feet 6 inches in height; the average stature of all New Yorkers will not be any greater than that of one hundred men selected at random, yet in the entire city we shall find a number of individuals of gigantic stature. When we apply this fact we see at once that extraordinary deviations from the norm cannot be expected to occur in a tribe of 500 or even 5,000, while among the vast populations of India, China or the Caucasian countries of America and Europe such variants are likely to occur with considerable absolute frequency. These variations need not even be excessive to produce significant cultural results. Again, we may urge the principle of minimal variations. A little greater energy or administrative talent may be just sufficient to found a

powerful state; a slightly greater amount of logical consistency may lead to the foundation of geometrical reasoning.

This puts an entirely different construction on the facts. Assume that racial differences are at the bottom of some cultural differences. This fact would not necessarily mean that the average ability of the inferior races is less, but only that extreme variations of an advantageous character occur less frequently among them. But precisely because the population of the several races differs so enormously, we are without a fair standard of comparison. We have no means of ascertaining empirically what the extreme variations of which Australians are organically capable.

This leaves the ultimate problem of racial differences unsolved. Nevertheless, our considerations have not been in vain. They show how many factors have to be weighed in arriving at a fair estimate of racial capabilities, factors which are ignored in most discussions of the subject. Whatever differences may exist have been grossly exaggerated. In the simpler mental operations, studies indicate a unity of mankind. Differences in culture are not proportionate to mental differences, i.e., relatively slight differences in native ability may well have produced tremendous cultural effects. Since, finally, cultural differences of enormous range occur within the same race, the ethnologist cannot solve cultural problems by means of the race factor. Even if an ultimate investigation should definitely fix the cultural limits to which a given race is hereditarily subject, such information could not solve the specific problem why the same people a few hundred years earlier were a horde of barbarians and a few hundred years later formed a highly civilized community. The supposed explanation by racial potentialities would be far too general to interpret the actual happenings. Racial psychology, no less than general psychology, thus fails to solve the problems of culture.

III. Culture and Environment

The influence of geographical environment on culture seems a matter of direct observation. We know that cotton is raised in the South, that our wheat belt lies in Minnesota, that the Rocky Mountain states are the seat of the mining industry while Florida and California form our tropical fruit orchards. With these obvious facts are combined correlations [which are] very convincing to the mind as yet undebauched by ethnological learning. What seems more natural than that culture in its highest forms should develop only in temperate regions, that the gloomy forests of the North be reflected in a mythology of ogres and trolls, that liberty should flourish amidst snowy mountain tops and languish in the tepid plain, or that islanders should be expert mariners?

This geographical theory of culture bears a resemblance to associationist theory in psychology. According to that doctrine, the mind is a wax tablet on which the outer world produces impressions. Modern psychology regards this system as an historical curiosity. The association of ideas itself is conceived merely as a special manifestation of the synthetic nature of consciousness. In short, the tables are completely turned, and association, instead of explaining consciousness, is interpreted in terms of consciousness. The analogy with the geographical view of culture will become apparent in the course of our discussion.

To begin with the culture of our own country: The environmental features of southern California, of Nevada, and the South have not changed during the last few centuries. Yet, what do we find on considering the aboriginal cultures of these regions? Southern California and

Nevada were unreclaimed desert wastes inhabited by a roving, non-agricultural population, the natural mining resources of the latter state remained untouched, no attempt was made to grow cotton in the Southern cotton area. How can such facts be interpreted on a geographical basis? Quite obviously, the reverse holds. The utilization of the environment, instead of being an automatic response, [requires] a certain type of culture. Granted the existence of an agricultural technique, attempts may be made to apply it in a forbidding arid climate, where a more primitive culture would not be able to develop it. The unfavorable environment may have checked such development, and exerted cultural influence at one stage, but it is unable to check it at another stage where the preexisting culture, instead of 'remaining put', molds the environment to its own purposes.

The case I have chosen is an extreme one because I have correlated environment with extremes of culture—one of the lowest forms of aboriginal North American culture and our modern advanced scientific methods of subduing nature to our will. But if we consider only the cruder forms of civilization the same point appears with equal clearness. Professor Kirchhoff believes in a far-reaching influence of the environment and cites the resemblances between inhabitants of arid territories. Unfortunately for his argument we have glaring instances in which desert-like conditions coexist with disparate modes of culture not only in similar but in identical regions of the globe.

The Hopi and Navajo Indians have both occupied the same part of northeastern Arizona and on the environmental theory we should expect among them the same mode of life. However, we are disappointed. The Hopi are intensive farmers who succeed in raising crops where white agriculturists fail; the Navajo also plant corn but to a lesser extent and have developed into a pastoral people, raising sheep for food and wool. Though the same building material is available, the Hopi construct terraced sandstone houses, while the Navajo dwell in conical earth-covered huts. North American ceramic art attains one of its highwater marks among the Hopi, while the pottery of the Navajo is hopelessly crude in comparison. Cotton was raised by the Hopi, but there is no trace of its use by the neighboring people. With the Hopi it is the man's business to spin and weave while this work falls to wom[e]n among the Navajo. The Hopi were always strict monogamists, while among the Navajo polygamy was permissible. Hopi ceremonialism centered in the magico-religious production of rain; the Navajo applied often the identical ritualistic stock-in-trade to the cure of sickness. The Navajo social code forbids conversation between son-in-law and mother-in-law; the Hopi view the taboo as a Navajo idiosyncrasy. The general cast of Hopi psychology is eminently peaceable; the Navajo recall in their bearing the warlike and aggressive tribes of the Plains. Where resemblances occur, we are able to prove that the parallelism is due not to an independent response to environmental stimuli, but to contact and borrowing. But quite apart from such cases, the basic differences in Hopi and Navajo civilization show that the environment alone cannot account for cultural phenomena.

Instead of comparing the effect of environment as a whole on different peoples, we can also isolate its single factors, such as the presence of particular species of plants or animals. One of the strongest cases against the creative influence of environment on culture lies in the domestication of animals in the Old and the New World. The one animal domesticated in both hemispheres is the dog. Why was not the bison of the great Plains tamed like the buffalo of southern Asia or the various races of cattle in the Eastern Hemisphere? No valid reason can be advanced on geographical grounds. More striking still is the difference between the hyperborean populations of Asia and North America. The Chukchee of northeasternmost Siberia and the

Eskimo share the same climatic conditions and their territories are both inhabited by the reindeer (caribou). Yet the Chukchee breed half-tamed reindeer on a large scale, using the animals for food and draught with sledges, while no attempt in this direction was made by the Eskimo. The same external condition fails to produce the same cultural result. Even among the Chukchee there is evidence that the use of reindeer did not take place in response to an environmental stimulus. It appears that the development of reindeer breeding is a relatively new thing with the Chukchee, who were formerly hunters of sea-mammals like the Eskimo. Before the recent efflorescence of their reindeer culture, the Chukchee waged war on their southern neighbors, the Koryak, for the purpose of carrying off their herds; and altogether it seems that both Chukchee and Koryak adopted the idea of taming the reindeer from tribes of the Tungus stock living to the west and south. We are, then, dealing with another instance of acculturation due to contact.

Even where the same animals have been domesticated by different peoples the use to which they are put may differ widely. Siberian reindeer-breeders [such as] the Tungus and Lamut use their animals only for transportation, not for slaughter, and many bands ride on their reindeer instead of harnessing them to sledges. It is true that Chukchee do not ride reindeer-back since their variety seems physically unfit for the saddle. That, however, is not the point. We should like to know how the Tungus came to use the saddle while other tribes did not do so, and for this positive reaction to their faunal environment geography furnishes no clue. A similar group of questions arises in connection with the horse. Wild horses were game animals in Solutrean times in Europe. Domestication set in at a much later period and its economic consequences vary with different peoples and in different times. The Kirgis milk their mares. The ancient Babylonians, Chinese, and East Indians used the horse as a draught animal harnessed to war-chariots. Its use for riding was an invention of Central Asiatic nomads. The consumption of horse flesh is a matter of course among the poorer classes of continental Europe, revolting as the idea is not only to the white American but to some of the Plains Indians as well. There is thus no such thing as the presence of the horse determining its cultural use in a definite sense.

As the physical environment is overshadowed in cultural significance by a neighboring culture, so it may vanish into nothingness in the face of cultural inertia — the tendency of a preexisting cultural trait of indigenous growth to assert itself. A familiar example of this tendency is the exact imitation of forms of implements in quite different and often refractory material. Thus, the Central Eskimo generally make lamps and pots out of soapstone. In Southampton Island, where this material is lacking, they have not devised a new form but have at the expenditure of much ingenuity and labor cemented together slabs of limestone so as to produce the traditional shape. Grooved copper axes have been found in parts of the United States; their shape is patterned exactly on the stone axes characteristic of the same localities. The beginnings of the copper and bronze ages in Europe are equally suggestive in this regard. The incipient metallurgist does not automatically make the most of his material but slavishly follows his stone or bone models. His copper ornaments imitate bear's teeth or bone beads, his implements resemble the stone celts and hammers of an earlier era. An equivalent development may be traced in the history of the Chukchee tent. This type of habitation is extremely clumsy and not at all well adapted to the roving life of the Reindeer division of the tribe, considerably hampering their progress. It represents, however, a variety of the older form of stationary house used when the Chukchee were a purely maritime people.

It might be objected that maladjustments of this sort are transitional, that just as the copper and bronze workers ultimately freed themselves from the influence of the preexisting stone

technique so the Chukchee would finally have abandoned their inconvenient tent and developed a new and more readily transportable lodge. This sounds very plausible but misses the point. Undoubtedly, a more and more perfect adaptation to elements of the physical surroundings has repeatedly taken place. But the very fact that culture history implies this progressive adjustment also implies that the cultural phenomena at different periods of time differ where the same environmental stimuli persist and therefore cannot be explained by them.

Indeed, environment is not only unable to create cultural features, in some instances it is even incapable of perpetuating them. In the Torres Islands of Melanesia the natives have no canoes for traversing the channels which separate their islands from one another but are obliged to use unseaworthy bamboo rafts inadequate even for fishing purposes. Yet there is evidence that the Torres Islanders once shared the art of canoe-making with their fellow-Oceanians and that it has died out in recent times. It is difficult to conceive of any people less likely a priori to lose the art of navigation than a South Sea Island group; yet, their maritime environment proved inadequate to preserve so vital a feature of their daily life.

To sum up: Environment cannot explain culture because the identical environment is consistent with distinct cultures; because cultural traits persist from inertia in an unfavorable environment; because they do not develop where they would be of distinct advantage to a people; and because they may even disappear where one would least expect it on geographical principles.

Shall we then banish geography from cultural considerations? This would be going beyond the mark. Geographical phenomena can no more be discarded than can psychological phenomena. They represent in the first place a limiting condition. Cultures cannot override geographical factors. The Eskimo do not eat coconuts nor do the Oceanians build snow-houses; where the horse does not occur it cannot be domesticated. This minimum recognition of environment as a purely negative factor, however, does not do full justice to it. The environment enters into culture, not as a formative but rather as an inert element ready to be selected from and molded. It is, of course, a matter of biological necessity for a people to establish some sort of adaptation to surrounding conditions, but such adaptation is no more spontaneously generated by the environment than are strictly biological adaptations. There are alternatives to adaptation—migration and destruction. It is true that when some kind of adjustment has once been established it will tend to persist in the region of its origin. This, however, illustrates not so much the active influence of environment as rather the tremendous force of cultural inertia which tends to perpetuate an old muddling-along adjustment, however imperfect, provided only it has bare survival value.

The environment furnishes the builders of cultural structures with brick and mortar but it does not furnish the architect's plan. There is a variety of ways in which the same materials can be put together, nay, there is always a range of choice as regards the materials themselves. The development of a particular architectural style and the selection of a special material from among an indefinite number of possible styles and materials are what characterize a given culture. Since geography permits more than a single adjustment to the same conditions, it cannot give the interpretation sought by the student of culture. Culture can no more be built up of environmental blocks than can consciousness out of isolated ideas; and as the association of ideas already implies the synthesizing faculty of consciousness, so the assemblage and use of environmental

factors after a definite plan already implies the selective and synthetic agency of a preexisting or nascent culture.

IV. The Determinants of Culture

Psychology, racial differences, geographical environment, have all proved inadequate for the interpretation of cultural phenomena. The inference is obvious. Culture is a thing sui generis which can be explained only in terms of itself. This is not mysticism but sound scientific method. The biologist does not depart in his workaday mood from the principle that every cell is derived from some other cell. So the ethnologist will do well to postulate the principle, Omnis cultura ex cultura. This means that he will account for a given cultural fact by merging it in a group of cultural facts or by demonstrating some other cultural fact out of which it has developed. The cultural phenomenon to be explained may either have an antecedent within the culture of the tribe where it is found or it may have been imported from without. The extraneous determinants of culture summed up under the heading of 'diffusion' have been repeatedly referred to in the preceding pages. A detailed examination seems desirable, for it is difficult to exaggerate their importance.

"Civilization," says Tylor, "is a plant much oftener propagated than developed;" and the latest ethnographic memoir that comes to hand voices the same sentiment: "It is and has always been much easier to borrow an idea from one's neighbors than to originate a new idea; and transmission of cultural elements, which in all ages has taken place in a great many different ways, is and has been one of the greatest promoters of cultural development." A stock illustration of cultural assimilation is that of the Japanese, who in the nineteenth century adopted our scientific and technological civilization ready-made, just as at an earlier period they had acquired wholesale the culture of China. It is essential to note that it is not always the people of lower culture who remain passive recipients in the process of diffusion. This is strikingly shown by the spread of Indian corn. The white colonist "did not simply borrow the maize seed and then in conformity with his already established agricultural methods, or on original lines, develop a maize culture of his own," but "took over the entire material complex of maize culture" as found among the aborigines. The history of Indian corn also illustrates the rapidity with which cultural possessions may travel over the globe. Unknown in the Old World prior to the discovery of America, it is mentioned as known in Europe in 1539 and had reached China between 1540 and 1570.

The question naturally arises here whether diffusion could have been of importance during the earlier periods of human history when means of communication were of a more primitive order. Methods of transportation progressed very slightly from the invention of the wheeled cart until the most recent times. As Montelius suggests, the periods of 1700 B. C. and 1700 A. D. differed far less in this regard than might be supposed. Yet we know the imperfection of facilities for travel did not prevent dissemination of culture in historic times.

The great Swedish archaeologist [Montelius] has given us a fascinating picture of the commercial relations of northern Europe in earlier periods and their effect on cultural development. We learn with astonishment that in the ninth and tenth centuries of our era, trade was carried on with great intensity between the North of Europe and the Mohammedan culture sphere since tens of thousands of Arabic coins have been found on Swedish soil. But intercourse

with remote countries dates back to a far greater antiquity. One of the most powerful stimuli of commercial relations was the desire of southern populations to secure amber, a material confined to the Baltic region. Amber beads have been found not only in Swiss piledwellings but also in Mycenaean graves of the second millennium B.C. Amber work was exchanged for copper and bronze. The composition of Scandinavian bronzes indicates that their material was imported from the faraway regions of central Europe. Considering the high development of the bronze technique in Scandinavia and the fact that every pound of bronze had to be imported, it would be difficult to exaggerate the extent of contact with the southern populations. But intercourse was not limited to the South. Swedish weapons and implements have been discovered in Finland. Crescent-shaped gold ornaments of Irish provenance have been found in Denmark, while a Swedish rock painting represents with painstaking exactness a type of bronze shield common at a certain prehistoric period of England.

Historical connections of the Bronze Age also obtained in the Neolithic era. Swedish hammers of stone dating to the third pre-Christian millennium and flint daggers have been found in Finland, and earthenware characteristic of Neolithic Scandinavia also turns up on the Baltic coast of Russia. Stone burial cists with a peculiar oval opening at one end occur in a limited section of southwestern Sweden and likewise in England. They point to a direct intercourse between Britain and western Sweden at about 2,000 B.C. A still older form of burial unites Scandinavia with other parts of the continent. Chambers built up of large stones set up edgewise and reaching from the floor to the roof are highly characteristic of Sweden, Denmark, the British Isles, and the coasts of Europe from the Vistula embouchure to the coasts of France and Portugal, of Italy, Greece, the Crimea, North Africa, Syria, and India. Specific resemblances convince the most competent judges that some of these widely diffused 'dolmens' are historically connected with their Swedish equivalents, and since the oldest of these Northern chambers go back 3,000 years before our era, we thus have evidence of cultural diffusion dating back approximately five millennia.

The development of culture seems to have actually taken place in southern Sweden. Beginning with the earliest periods, we find the coastal regions inhabited by a population of fishermen and hunters. At a subsequent stage coarse pottery appears with articles of bone and antler, and there is evidence that the dog has become domesticated. In the later Neolithic era perfectly polished stone hammers and exquisitely chipped flint implements occur, together with indications that cattle, horses, sheep and pigs are domesticated and that the cultivation of the soil has begun. Roughly speaking, we may assume that the culture of Scandinavia at the end of the Stone Age resembled in advancement that of the agricultural North American and Polynesian tribes as found by the first European explorers. A long period of essentially indigenous cultural growth followed towards its close by intimate relations with alien populations. It was the more extensive contact of the Bronze period that rapidly raised the ancestral Swedes to a cultural position high above a primitive level, with accentuation of agriculture, the use of woolen clothing, and a knowledge of metallurgy. It was foreign influence that brought the knowledge of iron and in the third century of our era transformed the Scandinavians into a literary people, flooded their country with art products of the highest then existing Roman civilization, and ultimately introduced Christianity.

The case of Scandinavia is typical. We have first a long-continued course of leisurely and undisturbed development, which is superseded by a tremendously rapid assimilation of cultural elements from without. Through contact with tribes possessing a higher civilization the ancient

Scandinavians came to participate in its benefits and even to excel in special departments of it, such as bronze work, which from lack of material, they would have been physically incapable of developing unaided. Diffusion was the determinant of Scandinavian cultural progress from savagery to civilization.

The question naturally obtrudes itself: If the Scandinavians obtained their civilization from the Southeast, how did the Oriental cultures themselves originate? When we examine these higher civilizations of the Old World, we are again met with indubitable evidence that one of the conditions of development is the contact of peoples and the consequent diffusion of cultural elements. This appears clearly from a consideration of the ancient civilization of Babylonia.

If we turn to the region of Mesopotamia, possibly the oldest seat of higher civilization in Asia, we find again that the culture of Babylonia under the famous lawgiver Hammurabi (about 2,000 B.C.) is not the product of purely indigenous growth but represents the resultant of at least two components, that of the Sumerian civilization of southern Babylonia and the Accadian culture of the North. The Accadians adopted the art of writing from the Sumerians and were also stimulated by this contact in their artistic development. The evolution of Sumerian civilization is lost in obscurity but on the basis of well established historical cases we should hesitate to assign to them an exclusively creative, and to other populations an exclusively receptive, role. The early splendor of Sumerian civilization was also in large part due to stimuli received through foreign relations. That cultural elements of value may be borrowed from an inferior as well as from a higher level has already been exemplified by the case of maize.

Contact of peoples is thus an extraordinary promoter of cultural development. By the free exchange of arts and ideas among a group of formerly independent peoples, a superiority and complexity is rendered possible which without diffusion would never have occurred. The part played in this process by the cruder populations must not be underestimated. They may contribute both actively and passively; actively, by transmitting knowledge independently acquired, as in the case of the felt technique the Chinese learned from the northern nomads; passively, by forming a lower caste on which the economic labors devolve and thus liberating their conquerors for an enlarged activity in the less utilitarian spheres of culture.

Nevertheless, before peoples can communicate their cultures to others they must first evolve these cultures. The question thus remains, what determines this evolution? In order to gain a proper perspective in this matter, we must for a moment consider the progress of human civilization as a whole. Archaeological research shows that the modern era of steel and iron tools was preceded by an age of bronze and copper implements, which in turn was preceded by a stone age. For more than eight-tenths of its existence, the human species remained at a cultural level at best comparable with that of the Australian. It was during this immense space of time that dispersal over the face of the globe took place and that isolation fixed the broader diversities of language and culture. The following Neolithic period of different parts of the globe terminated at different times. However, from the broader point of view here assumed, it was not relieved by the age of metallurgy until an exceedingly recent past. The earliest estimate I have seen does not put the event back farther than 6000 B.C. During nine-tenths of his existence, then, man was ignorant of the art of smelting copper from the ore. Finally, the iron technique does not date back 4,000 years; it took humanity ninety-six hundredths of its existence to develop this art.

We may liken the progress of mankind to that of a man a hundred years old, who dawdles through kindergarten for eighty-five years of his life, takes ten years to go through the primary

grades, then rushes with lightning rapidity through grammar school, high school and college. Culture, it seems, is a matter of exceedingly slow growth until a certain 'threshold' is passed, when it darts forward, gathering momentum at an unexpected rate.

In view of the evidence, it seems nonsense to say that early European civilization, by some law inherent in the very nature of culture, developed in the way indicated by archaeological finds. Southern Scandinavia could not have had a bronze age without alien influence. Discontinuity was the result of cultural contact. It may be that the lack of definite direction observed throughout the Stone Age may in part be due to similar causes, the migrations and contact of different peoples, as Professor Sollas suggests. But it is important to note that discontinuity is a necessary feature of cultural progress. It does not matter whether we can determine the particular point in the series at which the significant trait was introduced. Somewhere in the observed cultural effects there is the momentous innovation that leads to a definite break with the past.

If culture, even when uninfluenced by foreign contact, progresses by leaps and bounds, we should naturally like to ascertain the determinants of such 'mutations.' A priori it is conceivable that an undisturbed culture might necessarily develop by what biologists call 'orthogenetic evolution', i.e., in a definite direction through definite stages. This is, indeed, what is commonly known as the classical scheme of cultural evolution, of which men like Morgan are the protagonists. Now, how do the observed facts square with this theoretical possibility?

As Professor Boas and American ethnologists generally have maintained, many facts are quite inconsistent with the theory of unilinear evolution. That theory can be tested by comparing the sequence of events in two or more areas in which independent development has taken place. For example, has technology in Africa followed the lines ascertained for ancient Europe? It has not. Similarly, I have already pointed out that the possession of the same domesticated animals does not produce the same economic utilization of them. While the Tungus rides his reindeer, other Siberians harness their animals to a sledge; the Chinaman will not milk his cattle, while the Zulu's diet consists largely of milk. That a particular innovation occurred at a given time and place is no less the result of definite causes than any other phenomenon of the universe. But often it seems to have been caused by an accidental complex of conditions rather than in accordance with some fixed principle.

For example, the invention of the wheel revolutionized transportation. Now, why did this idea develop in the Old World and never take root among the American Indians? We are here face to face with one of those ultimate data that must simply be accepted like the physicist's fact that water expands in freezing while other substances contract. So far as we can see, the invention might have been made in America as well as not; and for all we know it would never have been made there until the end of time. This introduces a very important consideration.

A given culture is, in a measure, at least, a unique phenomenon. In so far as this is true it must defy generalized treatment, and the explanation of a cultural phenomenon will consist in referring it back to the particular circumstances that preceded it. In other words, the explanation will consist in a recital of its past history; or, to put it negatively, it cannot involve the assumption of an organic law of cultural evolution that would necessarily produce the observed effect.

Facts already cited in other connections may be quoted again by way of illustration. When a copper implement is fashioned not according to the requirements of the material, but in direct

imitation of preexisting stone patterns, we have an instance of cultural inertia: it is only the past history of technology that renders the phenomena conceivable. So the unwieldy Chukchee tent, which adheres to the style of a pre-nomadic existence, is explained as soon as the past history of the tribe comes to light.

Phenomena that persist in isolation from their original context are technically known as 'survivals', and form one of the most interesting chapters of ethnology. They suggest another aspect of our general problem. In every culture different traits are linked together without there being any essential bond between them. All nations which use milk for their diet have epic poems, while those which abstain from milk have no epic literature. This type of chance association [is] due to historical causes. But survivals show that there may be an organic relation between phenomena that have become separated and are treated as distinct by the descriptive ethnologist. In such cases, one trait is the determinant of the other, possibly as the preceding cause, possibly as part of the same phenomenon.

A pair of illustrations will elucidate the matter. Primitive terms of relationship often reveal differences of connotation from their nearest equivalents in European languages. On the other hand, they are remarkably similar in many other regions of the globe. The most striking peculiarity of this system of nomenclature lies in the inclusiveness of certain terms. For example, the word we translate as 'father' is applied indiscriminately to the father, all his brothers, and some of his male cousins; while the word for 'mother' is correspondingly used for, the mother's sisters and some of their female cousins. This system is connected with the one-sided exogamous kin organization. In short, the terminology simply expresses the existing social organization. In a world-wide survey of the field Tylor found that the number of peoples who use the type of nomenclature and are divided into exogamous groups, is about three times that to be expected on the doctrine of chances: in other words, the two apparently distinct phenomena are causally connected. Accordingly, it follows that there is a functional relation between these phenomena, although it is conceivable that both are functionally related to still other phenomena, and that the really significant relationship remains to be determined.

Cultural traits may be functionally related, and this fact renders possible a parallelism of cultural development in different parts of the globe. The field of culture, then, is not a region of complete lawlessness. Like causes produce like effects here as elsewhere, though the complex conditions with which we are grappling require unusual caution in definitely correlating phenomena. It is true that American ethnologists have shown that unlike antecedents converge to the same point. However, at the risk of being anathematized as a person of utterly unhistorical mentality, I must register my belief that this point has been overdone and that the continued insistence on it by Americanists is itself an illustration of cultural inertia. Indeed, the vast majority of so-called convergencies are not genuine, but false analogies due to our throwing together diverse facts from ignorance of their true nature, just as an untutored mind will class bats with birds, or whales with fish. When, however, full knowledge reveals absolute identity of cultural features, it would be miraculous, indeed, to assume that such equivalence somehow was shaped by different determinants. When a Zulu of South Africa, an Australian, and a Crow Indian all share the mother-in-law taboo with exactly the same psychological correlate, it is rash to decree that this custom must, in each case, have developed from entirely distinct motives. In contradistinction to some of my colleagues and to the position I myself once shared, I now believe that it is pusillanimous to shirk the real problem involved, and that in so far as any explanation admits the problem, any explanation is preferable to the flaunting of fine phrases

about the unique character of cultural phenomena. When, however, we ask what sort of explanation could be given, we find that it is by necessity a cultural explanation. We have here clearly one cultural phenomenon as the determinant of another.

It is not difficult as might at first appear to harmonize the principle that a cultural phenomenon is explicable only by a unique combination of antecedent circumstances with the principle that like phenomena are the product of like antecedents. The essential point is that in either case we have past history as the determinant. It is not necessary that certain things should happen; but if they do happen, then there is at least a considerable likelihood that certain other things will also happen. Diversity occurs where the particular thing of importance, say the wheel, has been discovered or conceived in one region but not in another. Parallelism tends to occur when the same significant phenomenon is shared by distinct cultures. It remains true that in culture history we are generally wise after the event. A priori, who would not expect that milking must follow from the domestication of cattle?

When we find that a type of kinship terminology is determined by exogamy we have given a cultural explanation of a cultural fact; but for the ultimate problems how exogamy came about, we may be unable to give a solution. Very often we cannot ascertain an anterior fact for another cultural fact, but can merely group it with others of the same kind. Of this order are many of the parallels that figure so prominently in ethnological literature. For example, that primitive man everywhere believes in the animation of nature seems an irreducible datum which we can hardly reduce to simpler terms. All we can do is to merge any particular example of such animism in the general class after the fashion of all scientific interpretation. That certain tendencies of all but universal occurrence are characteristic of culture, no fair observer can deny, and it is the business of ethnology to ascertain all such regularities. Only those who would derive each and every trait similar in different communities of human beings from a single geographical source can ignore such general characteristics of culture.

Beyond such interpretative principles for special phases of civilization, there are still broader generalizations of cultural phenomena. One has been alluded to under the caption of cultural inertia, or survival—the irrational persistence of a feature when the context in which it had a place has vanished. But culture is not merely a passive phenomenon but a dynamic one as well. This is strikingly illustrated in the assimilation of an alien cultural stimulus. As I have already pointed out, it is not sufficient to bring two cultures into contact in order to have a perfect cultural interpenetration. The element of selection enters in a significant way. The Japanese have accepted our technology but not our religion and etiquette. Moreover, what is accepted may undergo a very considerable change. It appears clear that the preexisting culture seizes upon a foreign element and models it in accordance with the native pattern. Thus, the Crow Indians, who had had a pair of rival organizations, borrowed a society from the Hidatsa where such rivalry did not exist. Straightway, the Crow imposed on the new society their own conception, and it became the competitor of another of their organizations. The preexisting cultural pattern synthesizes the new element with its own preconceptions.

Another tendency characteristic of all cultures is the rationalistic explanation of what reason never gave rise to. This is shown in the justification of opinions acquired as a member of a particular society. Among the Plains Indians almost everything is explained as the result of supernatural revelation; if a warrior has escaped injury in battle it is because he wore a feather bestowed on him in a vision; if he acquires a large herd of horses it is in fulfillment of a spiritistic

communication during the fast of adolescence. Thus, the culture acts doubly as the determinant of the explanation offered for a particular cultural phenomenon. It evokes the search for its own raison d'etre; and the type of interpretation called forth conforms to the explanatory pattern characteristic of the culture involved.

Culture thus appears as a closed system. We may not be able to explain all cultural phenomena or at least not beyond a certain point; but inasmuch as we can explain them at all, explanation must remain on the cultural plane.

What are the determinants of culture? We have found that cultural traits may be transmitted from without and in so far forth are determined by the culture of an alien people. The extraordinary extent to which such diffusion has taken place proves that the development of a culture does not conform to innate laws necessarily leading to definite results. Even where a culture is of relatively indigenous growth one step does not necessarily lead to another, an invention like the wheel or the domestication of an animal occurs in one place and does not occur in another. We must abandon the quest for general formulae of cultural evolution and recognize as the determinant of a phenomenon the unique course of its past history. However, there is not merely discontinuity and diversity but also stability and agreement in the sphere of culture. The discrete steps that mark culture history may not determine one another, but each may involve as a necessary or at least probable consequence other phenomena which in many instances are simply new aspects of the same phenomenon, and in so far forth one cultural element as isolated in description is the determinant or correlate of another. As for those phenomena which we are obliged to accept as realities without the possibility of further analysis, we can, at least, classify a great number of them and merge particular instances in a group of similar facts. Finally, there are dominant characteristics of culture, like cultural inertia or the secondary rationalization of habits acquired irrationally by the members of a group, which serve as broad interpretative principles in the history of civilization.

In short, as in other sciences, so in ethnology -- there are ultimate, irreducible facts, special functional relations, and principles of wider scope that guide us through the chaotic maze of detail. And as the engineer calls on the physicist for a knowledge of mechanical laws, so the social builder of the future who should seek to refashion the culture of his time and add to its cultural values will seek guidance from ethnology, the science of culture, which in Tylor's judgment is 'essentially a reformer's science.'