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The Evolutionary Approach to the History of Culture*

The Meaning of the Terms "Culture" and "Evolution"

Here I am using the term culture in the widest sense, following the example of most cultural anthropologists, ethnologists, archeologists, some modern historians and philosophers. Briefly speaking, culture includes all the products of human actions and all human actions which must be learned from other human agents.

Products of human actions are usually subdivided into two general categories: material and nonmaterial or ideational.

Material products are located in space, fully accessible to sensory experience, and used in physical activities. Here belong tools and machines, clothes, buildings, furniture, boats, carriages, roads, products of horticulture, of agriculture, and of animal husbandry, food prepared for consumption, etc. All material products are also natural objects and can be investigated as such. They are components of culture, if and in so far as they owe their existence to purposive human activities.

Ideational products cannot be located in space and are used not in physical, but in mental (or intellectual) activities. They include mythical beings and events: fictitious and half-fictitious products of imagination: philosophic and scientific ideas and theories; standards of values and norms of conduct—moral, political, religious, technological, logical, aesthetic, etc.—with which human agents are supposed to conform; ideals expected to be realized in the future; and conceptions which human individuals have of other individuals, of their own selves, and of the social groups to which they belong. We include also words of language, since a word has a meaning, and meaning is not a material phenomenon: We can locate sounds emitted by an individual who pronounces a word, or the written or printed signs which symbolize this word in a manuscript or a book, but the word with its meaning cannot be located in any particular place. The same may be said of a poem or a musical composition: It remains the same cultural product wherever and by whomever read or heard. There is an intermediary type of cultural products—works of painters, sculptors, and ar-

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chitects. They are material in the sense that they are located in space, and yet they have an ideational significance in that their aesthetic form and content influence the experience, feelings, and ideas of all those people who have seen and appreciated them.

So far as human actions are concerned, obviously all those have to be learned which deal with ideational products, all those which purposely produce material objects, and these, which use material products in conformity with definite ideational standards and norm.

Since culture in this sense did not exist a million years ago and has been growing in the course of human history, many famous thinkers have tried to discover some continuity and order in this growth.

We must remember that historical studies of culture, as here defined, started as studies of human collectivities located within limited territories, most of them politically united, each sharing a common language, oral or written, distinct customs, mores, religious beliefs and practices, many specific technical products and performances, some poetry and art. In other words, they studied not culture in general, but particular concrete cultures, developed and maintained by particular human collectivities or societies. This still is the predominant historical approach.

Already in classical antiquity investigators were aware that these collectivities stood on different cultural levels and that some of them had risen from lower to higher levels. A popular old distinction (still surviving) was made between "savages" on the lowest level, "civilized" people on the highest, and "barbarians" on the intermediary level. From the eighteenth century on, some philosophers (e.g., Vico, Turgot, Comte, and Hegel) conceived all collectivities on the same level as essentially alike in certain basic characteristics of their total cultures, and the history of every advanced collectivity as a gradual passage from the lowest to the highest level. This passage was often conceived as a kind of historical necessity, determined by forces inherent in mankind or in the metaphysical essence of the universe. Herbert Spencer, under the influence of biology, developed a theory of orderly *evolution* of total human societies as a continuation of biological evolution and subjected to the same universal laws.

These taxonomic and phylogenetic theories have been invalidated by the progress of historical and anthropological research, which resulted in the discovery of the vast cultural diversity of particular societies at every period of their existence. The emphasis of some investigators on this diversity culminated in the doctrine of the uniqueness of every society and the impossibility of any generalizations about them. Such extreme, particularism was in some degree counteracted by attempts to develop *typologies* of concrete human societies, on the assumption that particular societies approximate certain types at certain periods of their existence, and a society in the course of its duration may change from one type to another. However, such typologies, like all typologies, differ widely and partly overlap.

The most consistent, methodical attempt to overcome those difficulties and discover a continuity in the entire cultural development of humanity, based on historical studies of total cultures or civilizations, is the cooperative series of works entitled *L'Evolution de l'Humanité*. After several introductory works dealing with natural

conditions and the origin of mankind and culture, the subsequent works are devoted to synthetic historical surveys of particular civilizations.

Indubitably, each such survey of a civilization promotes an understanding of its origin, its inner unity, and its relationships with other civilizations, earlier, contemporary, and later. But the vast diversity, complexity, and changeableness of those relationships seem to make a systematic scientific theory of human evolution, "based on the idea that there is a historical unity in the history of the groups of mankind," impossible to achieve. Take, e.g., the history of Mesopotamia, culminating in the Babylonian and Assyrian civilizations and including their changing mutual relationships, their relationships (direct and indirect) with several civilizations in Asia Minor and with the Egyptian and, later, the Persian civilizations.

As a matter of fact, however, in analyzing each of these synthetic works, we find that it contains separate sections dealing with specific realms of culture—political organization, mores and laws, religion, art, technology, economy, poetry, eventually philosophy and science. Indeed, sometimes a whole volume is devoted to one of these realms within a total civilization. And in this respect these works resemble a different, well-known approach to culture, used by investigators who *abstract for comparative purposes* cultural phenomena of a certain category from the total cultures of those collectivities within which they are found.

This approach has been applied in all realms, by investigators of material techniques, economists, sociologists, religionists, political theorists, historians of law, of literature, art, music, philosophy, and science; and their comparative generalizations have proved increasingly effective when judged by scientific standards. This does not mean that they ignore connections between the various categories within any particular collectivity. It means only that they try to reach generalizations about each category before ascertaining how the categories are interconnected.

From the point of view of this approach, the cultural history of mankind is a combination of the histories dealing with the gradual development of each of these categories of culture.

And the first, most important conclusion which can be drawn from such studies as have already been made by historians is that, whenever sufficient evidence is available, every step in such development proves to have been a result of *purposive innovation*. Many of these steps are known to have been started by particular individuals, while the initiators of many others remain unknown. Certain innovations were highly important and influential; whereas most of them were of minor significance, but were followed by a sequence of other minor innovations which together exerted considerable influence.

In some collectivities during certain periods, innovations were few and slow; in other collectivities or in the same collectivity during later periods, they were many and fast. Sometimes in the same collectivity during the same period innovations in one realm of culture were much faster than in others. But in any case, this historical evidence invalidates completely the doctrine that the cultural history of mankind is determined by some forces beyond the control of conscious human agents.

Thus, since every category of culture has grown in the course of history by new creative additions to whatever existed before, we should like to use the term *creative*

evolution to denote this historical process. There is an obvious analogy between this process and the evolution of life on the earth, which is due to the gradual emergence of new kinds of living organisms from those which existed before. Henri Bergson called this organic evolution "creative," but his theory had some metaphysical implications. Since only in the world of culture can new kinds of phenomena be proved by factual evidence to be *purposely created* by conscious agents, we think that this adjective should be applied only to the evolution of culture. However, serious difficulties must be overcome in order to develop a general, consistent theory of creative cultural evolution which can be tested by factual evidence.

Classification of Cultural Phenomena

Just as the possibility of reaching generalizations about biological evolution depended on an adequate classification of living organisms, which it took centuries to develop, the possibility of reaching generalizations about cultural evolution depends upon an adequate classification of cultural phenomena. We cannot ascertain what new kinds of phenomena creative innovators introduce into the world of culture, unless we know what kinds of phenomena existed before.

A historical survey of the sciences which deal with those specific categories of culture mentioned above indicates that their theoretic generalizations are becoming gradually more exact and systematic. This is primarily due to the fact that investigators, instead of studying mainly, as they did in the past, such cultural data as technical objects, religious myths, words of language, literary works, paintings, sculptures, musical compositions, philosophic, or scientific theories, are now gradually concentrating on comparative studies of *human actions*. They are investigating actions of technical production; active use of technical products; economic exchange between producers and users; religious cultus of mythical beings; active use of words in speaking and writing; production of works of literature or musical compositions, and their use by readers, actors, or musicians; artistic actions of painters and sculptors, and intellectual actions of those who observe, interpret, and evaluate their works by aesthetic standards; intellectual actions of thinkers who produce philosophic theories or scientific generalizations and of those who learn to understand them and apply them to data and facts of their own experience; and social actions of those who tend to influence human individuals and groups.

We can summarize only briefly the main results of comparative studies of human actions. Every action includes certain objects, which are *values to the agent*, and introduces certain changes into these objects. Every action has a beginning and an end: It begins with the formation of a purpose and ends with the realization of this purpose (unless impeded by external influences). Actions can be relatively simple (like cooking a dish or declaiming a sonnet) or complex (like weaving a rug or composing a drama). They may be performed by one individual, e.g., a craftsman making a piece of furniture or a believer saying a prayer; or by a number of cooperating individuals, e.g.,

skilled workers building a modern house, or a congregation carrying on ceremonial cultus of a deity in a temple on a holy day.

Now, actions which are relevant for the investigation of cultural evolution tend to conform with certain standards, by which their objects are defined and evaluated, and with certain norms, which regulate the ways of dealing with these objects. To use a term coined by anthropologists, they follow definite *cultural patterns*. In so far as they do, they can be classified according to the standardized values with which they deal and according to the norms which regulate their course. By a comparative analysis, their similarities and differences can be graded in importance; consequently a systematic taxonomy is possible. Thus, a comparative analysis of the general category of technical actions, i.e., those dealing with material objects, shows the existence of many culturally patterned classes and subclasses, differing according to the kinds of objects with which they deal and the kinds of technique which they use. The general category of social actions, i.e., those which deal with men as objects, also includes many classes and subclasses which differ, depending on the standards by which human individuals or groups are defined and evaluated and on the norms with which agents conform in trying to influence them. Within the category of actions called "religious cultus," we find culturally patterned classes of actions propitiating differently conceived deities in various normatively regulated ways.

Now, creative innovations in every realm of culture consist, first of all, in initiating new variants of culturally patterned actions. The mere fact, however, that somebody dealing with a material object or a human individual or a mythical being performs an action that does not conform with those standards and norms with which such actions are supposed to conform may be entirely irrelevant from the point of view of history of culture. As a matter of fact, innumerable actions which deviate from established cultural pattern are performed all the time, and the vast majority of them are repressed as undesirable transgressions of established rules, or, if not repressed, ignored and forgotten. Only if such a deviant action is recognized by others as desirable, and similar actions are repeatedly performed hereafter by other agents, does a new cultural pattern of actions emerge.

A survey of such innovations is, however, only the first step toward a general study of cultural evolution. For human actions are not isolated, but interrelated in various ways. The most important of these relations are those of *functional interdependence*, when the realization of the purpose of one depends on the realization of the purposes of others, and vice versa. Such functionally interdependent actions become integrated into *organized systems*, which range widely in duration, size, and complexity. A complex action composed of differently patterned, but functionally interdependent actions is already such a system, though it lasts only until its original purpose is realized. This is exemplified by the complex performance of building a house, when differently patterned actions of masons, carpenters, painters, and plumbers are inter-dependents and form an organized, dynamic system, which ceases to exist after the house has been built. Other systems, however, can last indefinitely; for instance, a modern industrial system, where functionally interdependent actions of numerous workers continually

produce specific goods, or a religious system where believers of successive generations carry on organized cultus of the same deity.

In the course of cultural history the development of new species of culturally patterned actions has usually been followed or accompanied by the integration of such diversified actions into newly organized systems. These systems grow in size and complexity by the addition of other innovations; and eventually they may become subdivided into separate new systems with different functions. Or else separate systems may become functionally interdependent and be integrated into more complicated systems.

This is well exemplified by the evolution of the machine industry. Successive inventions of new *instruments* and *methods* of production lead to a growing differentiation of productive actions and their integration into complex industrial systems, while the invention of new *products* leads to the evolution of new industrial systems specializing in those products. When inventions multiply, the complexity of an industrial system may grow beyond practical limits, and it becomes subdivided; on the other hand, increasingly specialized systems may become functionally interdependent and be integrated.

The Duration of Cultural Data

This classification of cultural phenomena into culturally patterned actions and systems of actions has two main advantages.

The first is that it enables us to take into account the vast differences in temporal duration of cultural data and thus to overcome the difficulties which arise when history is divided into separate periods defined in terms of astronomical time. For a cultural datum remains a significant human value only so log as it is actively used, though its use may be temporarily interrupted and later resumed. When it forever ceases to be used, it either disappears altogether from the realm of human experience or remains only an object which, whether accessible or not to observation, has no significance whatsoever as a component of the dynamic course of human lives. This is what happened to the cultural products of the past which archeologists and historians discover. As a result of their rediscovery, such products to acquire a new significance as empirical data for scientific research, but this is obviously not the significance they originally had to the people who produced and used them.

We must make a distinction between the duration of material products and that of ideational products. So far as the first are concerned, their very use inevitably limits their duration (independently of any influences of the natural environment to which they may be subjected). How long they last depends upon the kind of culturally patterned actions in which they are intended to be used. Compare, for instance, the duration of such products as food, clothes, domestic implements, various kinds of instruments, machines or weapons, private homes, agricultural fields and gardens, and public buildings. When their duration is relatively short, similarly patterned actions repeatedly produce similar values for the same kind of use; sometimes, however, new

varieties of products take the place of older varieties. On the other hand, products intended to last for a long time may be purposely destroyed.

Every investigator of material culture within an inhabited area must take these differences into account; he should not survey this culture merely at one particular time of its duration, but throughout a long historical period. This is, for instance, what investigators of tribal and rural cultures are doing when they combine contemporary observation, orally transmitted knowledge of the past, and archeological research.

Ideational products have no such temporal limits; their duration can be prolonged identifinitely, especially when they are symbolized in writing. This applies to religious doctrines, ethical and political ideals, philosophic and scientific theories, and works of literature.

Compare, for instance, the duration of two religious doctrines: Egyptian and Mosaic. Both of them evolved in the course of history through many contributions of theological thinkers. But the Egyptian, after many centuries of duration, disappeared, because active religious cultus of Egyptian deities gradually ceased to be carried on under the impact of Roman rule of Christianity and of Moslem invasion. Whereas the Mosaic is still very much alive, because it has been continually used to guide the religious cultus and the social organization of many Jewish communities. Or take the ideal of a world society, first promulgated by the Stoics, accepted and gradually developed by numerous thinkers, most fully during the last hundred years. Its long duration and creative growth is due to the fact that throughout twenty centuries political, religious, and ethical leaders attempted and are now attempting to promote its realization. By contrast, Plato's ideal of a small, perfect republic, isolated and changeless so as to remain perfect, soon lost all practical significance for the present and future of humanity.

On the other hand, however, Plato's general philosophy, which he tried in vain to apply to political problems, remains significant, since it is the first consistent theory of idealistic metaphysics, radically opposed to materialistic metaphysics; and both idealistic and materialistic metaphysics have been used for centuries and are still being used by thinkers who try to integrate all the growing human knowledge into one systematic theory of the universe. The historical duration of Greek epics and dramas is due to their admirers who through centuries actively transmitted their understanding and appreciation by education and/or used them as models for planning and judging new literary works, while many literary productions of the near past are forgotten, simply because they had no such active admirers.

Territorial Extension of Cultural Data

The second, even more important, advantage of this dynamic approach to cultural phenomena is that it enables us to integrate studies of independent evolution going on within each separate, territorially limited collectivity and studies of what anthropologists call "cultural diffusion." We know that some specific varieties of cultural data are shared only by people living within relatively small areas, while some other kinds are

shared by people inhabiting vast regions, or even distributed over several continents. This wide geographic extension of certain cultural data is due to the fact that new cultural patterns and systems of action, originally developed in a particular collectivity, expand beyond its limits, become accepted by agents in other collectivities, and there continue to evolve creatively. Obviously, the range of this territorial expansion, as well as the length of temporal duration, increases when written communication is used.

A very old type of such expansion starts with the transference of ready-made products of specialized craftsmanship from one collectivity to another, and implies that the cultural pattern of using these products becomes accepted and applied by the people who take them. But such transference is seldom one-sided. The products are usually exchanged, directly or indirectly, for products of the other collectivity; and this presupposes that within the latter some specialized craftsmanship has already developed, different from that of the former. Furthermore, in the course of time imported products may be reproduced with some innovations by the craftsmen within the community which imported them, or else new products may be invented and exported. Such expension is, as we know, inseparably connected with the growth and expansion of economic systems of organized trade and banking; and both technological expansion and economic expansion are genetically connected with the modern creative evolution of industrial systems.

The combination of creative evolution and expansion is noticeable in the history of religious systems. Thus, Egyptian religion evolved from diverse local and regional religions which spread beyond their early limits, became systematized in several centers of organized cultus, and finally integrated into one system. In the course of this evolution it included also some cultural patterns imported from more distant areas or introduced by foreign invaders. And however exaggerated the doctrine is that the development of all historical cultures above the preliterate level is due to the diffusion of Egyptian culture, it is undeniable that, as Egyptian religion grew creatively, it contributed to the development of some religious systems outside of Egypt and also influenced the later evolution of other cultural systems which were originally parts of the religious system—mathematics, the fine arts, medicine, and legislation.

Another well-known example is the expansion of Buddhism from India to Thailand, Tibet, Burma, China, Korea, and Japan, with some innovations in each of these regions. The most significant, however, from the point of view of the history of religious systems is the expansion of Christianity, originally created by the leader of a small religious sect and his followers—one of many sects in Western Asia. During the early period of this expansion, several different new systems evolved, each integrating some original Christian principles with some principles of other religious systems developed, ideologically rather similar, but socially separated—Greek Orthodoxy and Roman Catholicism. Roman Catholicism became one of the most inclusive and best integrated religious systems in history; yet, later, more than two hundred new Christian systems evolved, each based on a different interpretation of some of the doctrines contained in the Bible. A few of them have disappeared, but the vast majority are still active.

The history of philosophy also shows clearly a combination of creative evolution and expansion. Greek philosophy started with attempts to substitute a rationally coherent system of general knowledge about the *cosmos* for the divergent, contradictory or self-contradictory theological doctrines—Greek, Egyptian, Phoenician, Babylonian, and Persian—with which Greek thinkers were acquainted. But from the very first, every philosophical system which evolved was sooner or later completely or partly contradicted by some other or several others. We mentioned above two contradictory metaphysical theories which evolved in Greece and still continue to evolve—the idealistic and the materialistic. But Greek philosophy, as it grew creatively, was not limited to universal metaphysics. Philosophers developed special (though partly interdependent) branches of systematic knowledge—logic, epistemology, methodology, ethical and political theories, and aesthetics. As the philosophic systems created by Greek thinkers gradually expanded into various areas outside of Greece, thinkers within those areas sooner or later reached new generalizations and developed new systems.

This process started first eastward, in consequence of Macedonian conquest; next westward, after the Roman occupation of Greece. With the spread of Christianity and of Islam, a few Greek philosophic systems expanded over the wide areas which these religions dominated, but creative innovations were considerably impeded by theological doctrines. Only from the fifteenth century, after Western European thinkers had become gradually independent of the theologians, the creative growth of new philosophic theories increased at an unprecedented rate, especially as the philosophers had to take into consideration the development of scientific research. The vast multiplicity and diversity of those philosophic systems which evolved during the last five hundred years in various European countries and later in America are recorded in the modern histories of philosophy.

The creative evolution of scientific systems is now well known. Unlike a philosophic system, a scientific system is intended to change by problematizing existing theories, seeking for new discoveries, formulating and testing new hypotheses, and integrating them into new theories. The emergence of new scientific systems is due to the unlimited and continually growing wealth and diversity of discovered data and facts which lead to increasing specialization of scientific research, while cooperation between specialists stimulates further growth of new discoveries.

We cannot survey here the history of scientific evolution, though some studies made by historians of certain sciences will be mentioned later. But considerable proof is available that it has been connected with the expansion of new creative contributions beyond the limits of the particular collectivity to which the scientists who made the contributions belonged. We know that already in classical antiquity some astronomical, mathematical, physical, chemical, and zoological knowledge expanded from particular countries into other countries. From the sixteenth century on, communication between scientists functioning in different countries has been steadily increasing. The most conclusive proof, of course, is the development of international congresses and associations of scientists during the last hundred years for the common goal of promoting the creative growth of their sciences.

The connection between creative evolution and expansion is somewhat different in the realm of poetry—using this term in the widest sense, which covers epics, dramas, legends, fictitious stories, and lyrics, whether in verse or prose.

Poetic products orally transmitted are found in every tribal or folk community, but their authors are mostly unknown. This does not interfere with their high valuation by participants in the community. On the contrary. Those products of unknown authors which cultural anthropologists or folklorists have hypothetically traced to a distant past are considered by the people who share them as much more valuable than the new products of contemporary authors whom they know.

Only with the invention of writing did purposive individual creativeness fully develop. Obviously writing facilitates both the perpetuation of new poetic works for future use and their expansion, since a literary language, once developed, can be learned by people speaking different local or regional folk languages and dialects. Inasmuch as writing was most fully developed, thus not always invented, by priests, the content of poetic literature originally included much that was derived from religion, e.g., such Babylonian poems as that of the Creation and of Gilgamesh; the Sanscrit epics, Mahabharata and Ramayana; in some measure, the Iliad, the Odyssey, and the Greek tragedies. But gradually poetic literature—just as philosophy and science—became secularized. This was partly due to the creation of new literary works which had no religious content, but partly also to the expansion of works which, though originally influenced by some religion, spread beyond the range of that religion. Thus, when classical Greek and Roman literatures were revived in Christian countries long after these religions had disappeared, they possessed no religious significance whatsoever for their readers and were valued exclusively by aesthetic standards.

The expansion of these literatures during the Renaissance, however, had another important influence. It required, of course, the expansion of the Latin and Greek languages. Meanwhile, new literary languages had begun to emerge from spoken dialects. This was at first due mainly to authors who began to produce poetic works derived from folk poetry and put them in writing, following the example of the sacred books. And as these works grew, they became modeled upon the aesthetic patterns of classical poetry. Gradually authors began to strive for originality, and their striving was stimulated by acquaintance with foreign creative works, either through learning the foreign languages or through translations. As a result, thirty-four different, more or less original national literatures evolved in Europe in the course of the last six centuries.

In the realm of fine arts—architecture, sculpture, and painting—creative evolution was also at first mainly due to the evolution of religious systems. Most of the artistic works in preliterate collectivities observed by anthropologists or uncovered by archeologists had a magic-religious significance, though some secular, purely decorative art was also found. Religious art grew with the foundation of temples as holy centers, where architecture, sculpture, and painting contributed to the ceremonial cultus. While the content and meaning of artistic works were determined by religious dogmas, some creative innovations in aesthetic patterns were allowed, provided they did not interfere with the religious significance of the products.

Secular art developed later, with the growth of political centers—palaces of powerful rulers and public buildings used for juridical or administrative purposes. The task of secular artists was to make these centers as magnificent as possible, to exalt and perpetuate important persons in sculpture and portraits, to compose drawings and paintings representing historical events. Here also some aesthetic innovations were allowed, but only within limits. Eventually, the demand for this secular art spread among well-to-do classes, where it had no public significance, but served to enhance the social prestige of private individuals and families.

Slowly and gradually, purely aesthetic innovations became increasingly appreciated and stimulated, as such innovations expanded beyond the area where they originated, and fresh innovations appeared in other areas. This is well illustrated in the history of Western art since the Renaissance. It began with the spread throughout Italy of innovations made by artists in particular cities, and continued as Italian art expanded throughout various areas of Western and Central Europe. New artistic styles evolved in Spain, Holland, Germany, England, and especially France; and these influenced artists in other countries. In recent times, a significant example of this connection between creative evolution and expansion is the development of original art in the United States and Latin American countries, following the expansion into these countries of various aesthetic patterns of European origin. Somewhat similar trends are found in the history of music.

General Synthesis of the Results of Research in Cultural Evolution

The common postulate of theorists of cultural evolution is that there must be some kind of historical continuity in the *total sequence* of all kinds of cultural innovations; just as the common postulate of theorists of biological evolution is that there must be a phylogenetic continuity in the total sequence of emergence of new genera and species of living organisms. The problem is: How to discover this continuity? Should investigators start with the earliest stage in a distant past, when the evolution began, and proceed to study its course up to the latest stage; or begin with the latest stage and trace its origin back?

Biologists had to begin at the latest stage for the simple reason that, when the theory of evolution started to develop, the simplest, presumably earliest, form of life—the monocellular organism—was almost unobservable, whereas contemporary complex organisms were already classified; their anatomical composition could be compared with that of earlier genera whose remnants were discovered by paleontologists; and the contemporary emergence of some new species could be observed. But in the domain of culture the predominant tendency was to proceed from the distant past to the present.

Quite a few theorists went back to the pre-cultural stage, on the assumption that human collectivities had evolved from animal collectivities. Since, however, there was no evidence concerning the animal collectivities from which they evolved or concerning the stage when human cultures were only beginning to emerge, any gen-

eralization about the origins of culture were purely conjectural. Consequently, the majority of cultural evolutionists started with comparative studies of relatively small, culturally backward communities and eventually combined these studies with archeological discoveries. After the Spencerian doctrine of an orderly, uniform sequence in the evolution of total societies had been invalidated, the only scientifically promising approach was to seek for universal, primary components of these under-developed cultures and try to discover how the other components of more advanced cultures had evolved from them.

This approach was applies, first of all, to so-called preliterate societies or communities, as we prefer to call them, on different cultural levels. Investigators assumed that those which have more developed cultural systems—e.g., technical systems with some degree of functional specialization and integration, public religious cultus distinct from private magic, and a social organization under common leadership—must originally have been on the same level as those which have no such systems, and that these systems emerged in the course of cultural evolution. But even if this assumption is true, as it probably is, we have little historical evidence showing *how the evolution proceeded*. Investigators have observed, indeed, the changes which these communities undergo *after* they have been subjected to the influence of modern civilizations, but not those changes which occurred long before this influence was exerted.

Moreover, since the communities studied by anthropologists have no written language or literature, no philosophy, science, "art for art's sake," industrial factories, or governmental bureaucracy, how is it possible to draw from their investigation any conclusions as to the historical emergence of these later categories of cultural phenomena? Only when documentary evidence concerning cultural innovations of the past becomes available can the *processes* of cultural evolution be adequately investigated.

Nonetheless, some cultural anthropologists still insist that the study of those rather small and simple communities with some cultural patterns allegedly universal and presumably as old as mankind provide the key for the understanding of large and complex modern societies, with their multiple and diverse cultural patterns and systems of relatively recent origin. The justification for this insistence is the doctrine that these studies enable investigators to reach conclusions about the universal traits of "human nature" in the sense of the psychological or psychobiological nature of human individuals as participatns in culture. We are familiar with various rather naive attempts to deduce the essence of modern societies from psychological generalizations based upon anthropological studies. They have obviously nothing to contribute to the study of cultural evolution.

Much more reliable is the opposite approach of investigators who start, not with the least developed, but with the most developed cultural phenomena, many of which are accessible to direct observation, and use documentary evidence to trace back the processes of their evolution. It has actually been used by historians of specific categories of culture, although, because of the old concentration of most historians on the study of total collectivities, its use has not been as consistent as it might have been.

One obstacle is the old tradition that historical events must be studied in their chronological sequence, in the order in which chroniclers record them. When historians follow this order, they do it because earlier events are supposed to determine later events. The trouble is that a vast multiplicity and diversity of events occur in every human collectivity during a certain period of its duration, and historians have to select those which are presumably most influential in determining or conditioning later events, also multiple and diverse. Such selections were frequently based on assumptions as to the *causative force* of certain events, especially actions performed by agents endowed with some kind of superior power and producing effects which they intended to produce. But this use of the principle of causation differs from that of modern scientists who, in studying cause-effect relationships, investigate first the supposed effects and then search for their causes; after discovering what they hypothetically assure to have been the causes, they test their hypotheses by ascertaining whether similar causes are regularly followed by similar effects.

Although we are not concerned here with causal, only with genetic problems, we believe that this method should be applied to the solution of these problems, in the same way as biologists are using it in their ontogenetic and phylogenetic studies. It has been effectively used, though not always explicitly formulated, in studies of the evolution of science, religion, industry, and economic organization.

Modern historians of various sciences actually start with the study of the scientific systems which are most developed at the time they carry on their investigation. They select those discoveries and theories of the past which have contributed most to this stage of scientific evolution, take fully into consideration original independent innovations made by scientists in particular societies, the expansion of those innovations, and any later innovations following this expansion. This enables them to reach certain general conclusions concerning the processes of growth of their sciences and to explain their evolution from earlier to later stages, sometimes even to predict hypothetically their future evolution. Historians who take up such studies at a later stage can supplement them by surveying the further innovations which have occurred since their predecessors completed their studies, and can test their predictions, if any.

Such systematic studies were initiated at the beginning of the nineteenth century. They were at first almost exclusively concerned with the historical evolution of natural sciences, especially astronomy, physics, chemistry, and biology, since these were the only contemporary sciences already well developed and generally recognized as such. Subsequent historical works included later innovations which contributed to the further growth of these sciences. Toward the end of the nineteenth century and at the beginning of the twentieth century, some historical studies of psychology, economics, sociology, and history itself were undertaken by investigators who were aware that these disciplines had also been gradually evolving and reached a stage where they could be recognized as sciences. As a result of such studies, numerous innovations made by creative thinkers of the past, but hitherto ignored, are now taken into consideration.

That the study of the evolution of industrial systems should start with investigation of the systems which are most fully developed and then go back to past contributions

to this development is well exemplified by the history of American industry. It would be scientifically impossible to begin the study of its development by surveying technical products and actions within the area of the United States at the end of the eighteenth century and selecting out of the innumerable and widely diverse technical patterns transferred by the immigrants from Europe, borrowed from the Indians, and invented by the pioneers, those which contributed to the gradual growth, multiplication, differentiation of industrial systems, the emergence of new from older systems, and the separation of others. Only by starting with the study of these systems as they exist now and tracing back their origin can the processes of their evolution be reliably ascertained.

Or take the evolution of communist economic systems. Can we assume, as communist historians claim, that they have evolved out of capitalist systems by practical application of the principles formulated by Marx and his followers? If so, then why in the Soviet Union, where communism is most developed, does it differ so much from the Marxian conception of a future communist society? If we begin, instead, with a through survey of communism within the Union, as it exists now, we find that we cannot explain its origin without taking into consideration the history of Russia. For its growth is inseparably connected with the revival and further development of three main components of the old Tsarist regime: autocratic form of government, imperialistic military expansion, and aggressive Russian nationalism aiming to dominate and gradually absorb other nationalities.

A study of the historical evolution of religious systems, e.g., of the many Christian systems, also indicates that scientifically the most promising approach is to take each of them at the time when it reached full development and trace its evolution back to its origin. For only then can we understand their ideological differences, explain why some of them are relatively simple and others highly complex; and why in some of them hundreds of millions of believers participate, while in others only several thousands.

This approach is especially effective when applied to cultural systems of the past which, after reaching a rather high degree of development and integration, ceased to exist; for much documentary evidence is usually available about this highest stage, and less or none about the earlier stages. For instance, the study of the religious system of ancient Egypt started with the stage concerning which written documents were numerous, and only gradually were earlier stages reconstructed with the help of documents previously unknown, but recently discovered, and archeological evidence. The same method was used in reconstructing the evolution of the Roman political system, by contrast with the opposite method which had been used by Levy and some other Roman historians.

By comparing the results of these historical studies, we should be able to discover similarities and differences between the ways in which the creative evolution of various kinds of cultural phenomena proceeded. For instance, if we survey the historical evolution of the sciences, we find that the processes of this evolution manifested a general similarity, which distinguished them from the evolution of religious systems, material techniques, fine arts, poetry, and even philosophic theories. On the other

hand, the ways in which cultural sciences evolved differed considerably from the older evolutionary processes in the course of which natural sciences grew. There were also differences between the ways in which special sciences evolved, e.g., astronomy and biology, or economics and theory of literature. A survey of the history of religious systems indicates that, in spite of considerable differences in the ways in which various religions evolved, the processes of their evolution were sufficiently similar to distinguish them from the evolution of other categories of cultural phenomena.

These results of historical research, based mainly on documentary evidence, can be used to explain the origin of cultural systems where no evidence about their past evolution is available. Thus, in many contemporary tribal communities we find organised collective religious cultus under the guidance of priests, systems of interdependent technical actions performed by several agents, aesthetically patterned craftsmanship, some poetry, and music. We can assume hypothetically that they evolved in ways similar to those religious, technical, artistic, and poetic activities whose evolution historians have investigated. This means that, contrary to the assumption of cultural anthropologists mentioned above, it is the investigation of "civilized" societies which provides the key for the understanding of the cultural life of "primitive" societies.

Cultural Destruction

We have seen that cultural products cease to exist as components of culture when they are no longer actively used. But why have certain varieties of culturally patterned actions and systems of actions producting and using specific values disappeared from the domain of culture, in the sense that they have ceased to function, while other continued to function, and new varieties evolved from them? The problem is analogous to that which biologists face when they try to explain the disappearance of certain genera and species of living organisms.

This problem cannot be solved by the doctrine of such philosophers of history as Spengler, according to whom every civilization, after a period of growth, gradually and inevitably decays. For even if this doctrine were applicable to the history of particular total civilizations, it cannot be applied to specific categories of cultural systems, in view of the fact that these systems can expand from one civilization to another, and there continue to evolve. Thus, before Egyptian and Babylonian civilizations disappeared, the influence of some of their creative achievements spread and contributed to the later creative evolution of religion, literature, art, philosophy, and science in other civilizations.

As a matter of fact, many varieties of culturally patterned actions and systems disappear as a result of competition between them and new varieties creatively growing and expanding at a much faster rate. This is exemplified by the slow, but steady disappearance of magic with the development and spread of organized religion, technology, and science. Some active components of these older varieties become incorporated into new varieties, as when certain technical patterns of craftsmanship and artisanship become included into machine industry. Much more significant, however,

from the point of view of cultural history is the problem of purposive *destruction* of cultural products and cultural systems—obviously, the reverse of creative evolution.

Best known, rapid, and relatively simple is the destruction of material products by the enemy as a military operation in wartime. Such destruction does not imply that these products as such are negatively valued. Since war is a violent struggle between organised, mutually antagonistic collectivities, technical destruction is intended to assure victory over the hostile collectivity. It is most complete and permanent when the hostile collectivity is to be eliminated forever, as exemplified by the destruction of foreign cities and the partial extermination, partial absorption of their inhabitants in antiquity, or in the Middle Ages during the Tartar invasions. In most wars, however, only those technical products are purposely destroyed which can be used by enemies in military struggle; the prospective victors often want the other material systems of their enemies to be preserved for their own use after invasion or conquest. Thus, in order to explain such destruction we have to follow political scientists and sociologists, who have been investigating wars as inter-collective *social* activities.

The destruction of ideational cultural products and systems is much more complex. It may, indeed, consist at first in destroying material products which express the results of creative intellectual activities and can be idenfinitely used to reproduce these activities and initiate new creations. Thus, though thousands of years powerful associations of religious believers have been destroying temples, images of gods, and sacred implements used in religious cultus by peoples who share religions different from theirs. This is, for instance, what the Hyksos did in Egypt about 1700 B.C., the Romans in Jerusalem, Christians trying to eliminate pagan religions from the Roman Empire, and Spanish conquerors in Mexico and Peru during the sixteenth and seventeenth centuries A.D.

But permanent destruction of ideational cultures requires also that culturally patterned actions be repressed, and the functioning of cultural systems counteracted or prevented. When a culture is well developed and has numerous active participants, this process of destruction may be slow and not always successful, as is exemplified by the failure of Roman emperors to destroy Christianity, the later failure of Christians to destroy Judaism, and the efforts of some Christian collectivities to destroy Christian systems differing from their own. As modern national culture, i.e., secular literary cultures, grew strong, it became increasingly difficult to destroy them, as is illustrated by the failure of Austrians, Prussians, and Russians to eliminate the various cultures within the territories which they controlled.

Sometimes, in order to achieve such destruction, the extermination of all the participants in the culture to be destroyed is attempted as the last resort. The most conspicuous example is the Nazis attempt to exterminate all Jews, as the only way of destroying the "Semitic" Jewish culture, considered to be dangerous to the purity, creative growth, and expansion of "Aryan" culture in its supreme German form.

How can we explain the numerous trends to destroy ideational cultures? According to a rather popular doctrine, this is due to conflicts between cultural systems, or

what has been sometimes called "culture conflicts." Cultural systems are supposed to conflict if certain values and actions which are positively judged by the standards and norms of one are negatively judged by the standards and norms of the other. Thus, religious systems presumably conflict when some beliefs and practices which, according to the dogmas of one of them, are "right," according to the dogmas of another are "wrong." Philosophic or scientific systems conflict if generalizations which are "true" according to one are "false" according to the other. Poetic or artistic systems conflict, if what is positively evaluated by the aesthetic standards and norms with which one of them conforms is negatively evaluated by the aesthetic standards and norms with which the other conforms. Technical systems conflict, if the instruments and methods considered efficient or the products considered valuable according to the standards of one are considered inefficient or worthless according to the standards of the other.

But an objective historian of culture must investigate every cultural system with what I call the *humanistic coefficient*, i.e., as it is experienced and evaluated by those agents who participate in it, not by participants in other systems. From this point of view, no religions, philosophies, scientific theories, literary or artistic works, or technical systems conflict with one another. There are many *different* systems, each independent of the others. Such systems, as we know, can coexist during the same period in certain areas without interfering with each other, as a number of separate religious systems have coexisted during certain periods in India, China, and the present United States; and diverse philosophic systems in Greece, Rome, and Western Europe from the sixteenth century on.

Moreover, it is possible to integrate at least partly such systems by developing new ideals which will be accepted and applied by their adherents. We are familiar with recent, partly successful attempts to overcome the separatism of Christian denominations, and even of Christian, Jewish and certain other religions, by leaders who formulated a universal ethical ideal which can be cooperatively pursued by the adherents of these religions, however much their theological doctrines differ. We believe that it would also be possible to integrate the many diverse philosophic systems by developing a consistent *philosophy of values* or, more exactly, of standards of valuation and norms of conduct, viewed in historical perspective, which would be acceptable to all competent thinkers, while leaving controversial issues concerning theoretic knowledge for scientists to settle.

Thus, the destruction of cultural systems has to be explained, not by conflict between these systems, but by *social conflicts* between organized associations of people who participate in them. And this is a specifically *sociological problem*. It is significant that the destructive trends in social conflicts are not necessarily connected with the degree of divergence between their respective systems. Thus, conflicts between Christian associations in the past have been more violent that those between Christians and Hindus, or Christians and Buddhists. Struggles between nationalities, when the people belonging to one nationality have tried to destroy the language which people of another nationality spoke and wrote, obviously were not rooted in any conflict between languages.

Differences in Speed of Cultural Evolution

There are other important problems which investigators of cultural history have to solve.

First of all, why has the cultural evolution in various human collectivities been so uneven? Why have many of them failed to develop technical, economic, religious, artistic, literary, philosophic, and scientific systems which others have successfully developed? The explanation of this cultural lag by racial inferiority has been completely invalidated by comparative scientific research, and the evidence of mass migrations has proved that the explanation of geographical conditions is inadequate. Moreover, archeological evidence indicates that about ten thousand years ago hardly any human collectivity was culturally above the level of most of the present tribal communities.

Some philosophers of history—e.g., Herder and Condorcet—advanced a significant general theory concerning the increase and rapidity of the growth of culture. They claim that cultural innovations are rooted in past innovations; and, as the products of innovations agglomerate, subsequent innovations multiply. Although this theory may be considered hypothetically valid, it does not explain the differences mentioned above. Their explanation must be sought in *social conditions*.

Multiplication of innovations usually means multiplication of innovators, each of whom contributes something different to the existing culture; end this requires not only a large number of individuals who participate in the same culture, but a considerable degree of individual specialization. Very few original innovations are possible in a tribal community composed of only several hundred or, at most, a few thousand people, where, apart from the division of functions between the sexes, little specialization exists. Only in a large and complex collectivity of many thousands, or even millions, of people with many specialized functions is there opportunity for numerous individuals to introduce innovation. Thus, *social integration* of smaller communities into larger societies is an essential condition of a rapid creative growth of culture.

But in surveying the history of these large societies, we are faced with the problem of differences in speed between the evolution of various categories of cultural phenomena during the same period, and the increase or decrease in speed of evolution of the same category in different periods.

For instance, throughout centuries in China, India, and most European countries technical evolution in agriculture was very slow, even during periods when religious, artistic, and literary evolution proceeded rather rapidly. Industrial evolution in many countries, though faster than agricultural evolution, was also often lagging behind the evolution of ideational systems; and then, from the beginning of the eighteenth century, its speed increased in Europe and America so much that in the opinion of some thinkers all other categories of culture are now lagging behind it. Somewhat later, agricultural evolution also speeded up as never before.

Analogous trends occurred in the realm of poetry. In most European countries from the early Middle Ages on, popular poetry existed, but its growth was very slow, as compared with the growth of religion, political organization, and even art. But after

it began to be written, it started to grow creatively at an increasingly rapid rate, first in Italy, then in France, Germany, Spain and England, later in Poland, still later, but perhaps most rapidly, in Russia.

On the other hand, in the course of history the creative evolution of specific cultural systems, rather rapid during certain periods, slowed down or almost stopped, though these systems continued to function. Thus, many religions, after reaching full development and integration, remained almost changeless for long periods, e.g., orthodox Judaism, Islam, Greek Orthodoxy, and Roman Catholicism. Any important innovations during such periods resulted in the formation of new systems, separated from the original system; and after a time most of these new religious systems also almost ceased to evolve.

This slowing down and eventual stopping of creative evolution occurred in other realms of culture, e.g., Greek poetic literature after the Hellenic period, Roman poetic literature after the second century A.D., Byzantine art, which gradually stopped growing creatively in Constantinople, and after expanding together with Greek Orthodoxy to other countries remained there almost changeless for centuries.

Sometimes, indeed, we find a fluctuation between periods of creative growth and periods of stagnation. This is well exemplified by the history of astronomy, which started and then ceased to develop in China, Babylonia, and Egypt; grew creatively in Greece, almost ceased to develop after Ptolemy, following its earlier growth in Babylonia and started to grow again at an increasingly rapid rate in the Western world since the fifteenth century. No such fluctuation, however, occurred in astrology, which has persisted with only minor changes through four thousand years.

Similar fluctuations, though on a smaller scale and during shorter periods, have occurred in the realm of art. After a new style has developed, it often remains almost changeless for some time; artists simply followed the models originally created by their predecessors. Then, sooner or later, some creative artists initiate a new style which, after it reaches a certain stage, also sometimes ceases to grow.

In order to explain these differences, we must take into consideration the fact that the duration of cultural systems depends upon social cooperation between active participants, who form associations intended to maintain these systems in existence for longer or shorter periods of time. Now, such a cooperating association can either promote or impede creative innovation. If a cultural system lasts beyond the life-span of individual participants, as many religious, literary, scientific, artistic, and economic systems do, the tendency to promote or to impede innovation can decrease, increase, or change into the opposite tendency, as a new generation of active participants takes the place of the older generation.

But what about the impact upon creative evolution of the expansion of cultural systems which we discussed before? Is not this sufficient to explain at least the increasing speed of creative growth of religious systems, sciences, modern industry, national literatures, and the fine arts?

However, this expansion itself manifests considerable differences, which need explanation. If we compare the vast range of expansion of such religious systems as Roman Catholicism or Islam with the narrow range of various minor religious sects,

we find that it cannot be explained by differences between these religions, but by the existence of large, well-organized associations among the believers of the first two religions which assumed and performed the function of converting numerous unbelievers in various countries, whether by peaceful or violent methods; whereas those minor sects had no such effective social organization for expansive purposes. The world-wide expansion of communism during the last thirty years, in comparison with other types of socialism, also can be explained only by the rapid growth of numerous, well-integrated associations whose main task has been to spread communism.

On the other hand, the acceptance of cultural systems developed in one country by inhabitants of another country can be impeded by associations which oppose innovations initiated by foreigners, or on the contrary stimulated by associations which evaluate these systems positively and use them to promote the creative growth of their own culture. In short, just as the very existence of cultural systems seems to depend on organized associations which either preserve or destroy them, so their creative evolution seems to depend upon associations which either promote or impede it. Thus, the study of associations and their evolution is essential for the development of a consistent general theory of cultural evolution, and this is a task which sociologists are performing.