The likenesses and differences reported in comparative philosophy, like all comparisons, are suspect because their perception is in the eye of the beholder and their expression is in the vocabulary of the reporter. The resulting distortions are somewhat mitigated when the comparison is made, not by characterizing and naming philosophies and doctrines, but by defining and distinguishing concepts used or theses advanced. The concept of time is well suited for such purposes of comparison, since it conveys a sense of concreteness and definiteness and suggests a possibility of escaping the inclusive abstractness and ambiguous indefiniteness of terms, which are usually chosen as more philosophical, like “being,” or “reality,” or “God,” or “truth.” Yet “time” shares the same difficulties and dangers, for we approach the task of comparing and contrasting concepts of time or doctrines of time with convictions concerning what time really is and what it is truly said to be and with supporting snippets of the history of false conceptions and theories refuted and discarded. It is difficult to avoid the established clichés, which are the product of the accepted and repeated history of the periods and turns in the development of thought and the conventional geography of its transitions from place to place. Everybody knows, since he has learned and relearned, in school and in books, that the Middle Ages in the West was otherworldly, and, therefore, had no sense of time and no knowledge of or acquaintance with history. It is generally believed that one reason why East and West will never meet is that the Indians had no history until Greek historians taught them how to mark off historical periods by dates and how to trace consequences to causes and so transform poetical and mythical accounts of the Indian past into histories, and that the Chinese who, although they had histories which recorded the past and clocks which measured the lapse of time, had no knowledge of the nature of time and developed no science of mechanics.

Nonetheless time is not an entity which is encountered, or a concept which is perceived, in isolation. Indeed the history of thought about time includes theories which deny the existence of time and the perception of time. Even if it exists and can be experienced, time comes into being and knowledge only in connection with something else. “Time and temporality” is a formula to designate time in its circumstances, substantive and cognitive, and it may be used as a device by which to develop and examine the variety of circumstances in which “time” acquires its variety of meanings in the context of a variety of problems, philosophical in nature but with consequences detectable and traceable in history, science, art, and social and cultural structures. It is a device which the ancients called a “commonplace” or “topic” and used to discover arguments and relations among ideas and arguments. It was the

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device used and developed both in the arts of invention and in the arts of memory.

Time and temporality, time and the circumstances in which time is perceived as a problem or as a structure, is a formula which takes many forms and particularizations. They are easily recognized in the pairs of terms used in the treatments of time by philosophers, past and present, Eastern and Western—"time and eternity," "time and motion," "time and duration," "time and space." The list could be extended indefinitely to bring in other problems of time and other definitions of time, but they are all interrelated, and the pattern that a few of them form provides a structure for comparative analysis and consequential inquiry.

"Time and eternity" opens up the topic of time and change in the context of unchanging being. If time is, as Plato defined it, the moving image of eternity, time reflects in the sequences of change a structure of intelligibility, of intelligence, and of being. Cosmic order and cosmic motion are prior to, and order, the motions of things and the sequences of phenomena both as occurrences and as appearances. Moreover, the motion of the world-soul, which combines the motion of the same and the motion of the other, is prior in nature to the motions of bodies. Time enters into the analysis of the making of the world by the way of reason; space enters into the construction of bodies by the way of necessity. Substance and eternity, according to Spinoza, are conceived by intellect alone; quantity and duration may be conceived concretely and adequately by the intellect or abstractly and superficially by the imagination. And when we abstract quantity from substance, and duration from the mode by which it flows from eternal things, time and measure result—time to determine duration, and measure to determine quantity.

"Time and motion" places time in the context of change. In this commonplace some philosophers have identified time with the motion of the universe, or with the universe itself, or with motion, while others have held that it is distinct from but associated with motion as the measure of motion. As measure, time is involved in problems and paradoxes which place it in further commonplaces. One is the paradox of the measure and the measured: time may be said to measure motion, or motion may be said to measure time. Another is the paradox of the continuous and the discrete, of time and the moment or the now. The now provides the boundaries, the beginnings and the ends, of time which mark off discrete periods of time; the now also provides the continuity of time, joining the past to the future. Time is a continuity divided paradoxically into three parts: the past which is a continuity but no longer exists, the future which is a continuity but does not yet exist, and the present, the now, the moment, which exists but is discrete. There are such consequent logical paradoxes in the modalities of time as the sea
fight tomorrow, which Aristotle propounded and which is still the subject of debate among logicians today. It is necessary that it either take place or not tomorrow, but it is not necessary that it take place tomorrow and it is not necessary that it not take place tomorrow. If there is a real alternative in future events, it is necessary by the principle of contradiction that one or the other take place, but the necessity is not determinative of which shall in fact occur. If the future is contingent, the transition from the future to the present is a transition from contingency to actuality, and the transition from the present to the past is a transition from actuality to necessity. Laws of motion which project from present observations of positions and motions will be laws of probability determined by a principle of indeterminacy or contingency. If future events are necessary, the same modality applies to statements about past, present, and future; but time is then inseparably attached, not to dimensions of space, but to specific motions, things, and causes. From these places have been developed distinct antagonistic theories of time based on the examination, respectively, of the necessities of what has been, the actualities of existence, and the possibilities of what will be.

Further paradoxes develop from the topic of time and what is in time. When what is in time is kinds, or collections, or sequences of individual things, persons, and events, the order of things and the account of their characteristics, relations, or sequences are histories. Histories of discrete things, and their species, and genera may be without time, as in the classifications of natural history, or with time, as in theories of the evolution of species. Histories of continuous sequences of things, events, persons, or institutions make use of time in a variety of ways constituting different kinds of histories embodying different theories of time. When what is in time is particulars identified by the universal characteristics they embody as particulars or by universal characteristics of the sequences in which they occur and are known, it is bodies with powers and functions acting and reacting in positions, or places, or space, and time is an ordering principle in the resulting physics, or physiology, or psychology. Finally, time may be conceived as an order separate from what is ordered in time, as Leibniz defined it, “an order of succession.” What succeeds presents a further paradox: it may be a series of things or events or ideas, and paradoxically whichever one is chosen accounts for the others—a succession of things accounts for events and ideas, a succession of events produces things and ideas, and a succession of ideas identifies and explains things and events.

“Time and duration” is a topic which has operated in the first two commonplaces. Time and eternity were distinguished by use of the faculties of the mind by which they are perceived or conceived. Eternity is conceived by the intellect or understanding; time is perceived and differentiated by
sensation and imagination and opinion. Eternity is of being; time is of becoming or existence. Duration may be perceived by the intellect as it flows from being, or it may be perceived by sense and imagination as time which measures duration. Time and motion, the second commonplace, was shown to involve the further topic of time and what is in time and thus to lead to the differentiation of successions of ideas from, or as a kind of, succession of things. Even philosophers who relate time to the motions of things acknowledge that there would be no time if there were no mind to observe and measure time. They sometimes distinguish a numbering number, supplied by the numbering mind, from a numbered number, found in things and motions; and they make time a numbered number to associate it more closely with the motion of things and to separate it from the intrusions of motions of minds. Other philosophers insist no less strongly and no less repeatedly that there would be no measuring by time unless there was something to measure, and they distinguish between duration which is perceived and lived before it is cut into moments and parts by time and measuring devices. Even if the succession of ideas is chosen in preference to the succession of things, however, a further topic remains to determine what mind or soul endures, the world mind or the individual mind. According to Plotinus, time began when the universal soul entered into movement, and it arose as a measurement of the activity of the soul. It is the life of the soul, and it consists in the movement by which the soul passes from one stage of its life to another. It is an image of eternity. According to St. Augustine, the mind in which time is measured is the individual mind. Time is a "distention of the mind," and the measurement of time is in the mind. There are three actions of the mind: memory, attention, and anticipation. They exist only as present actions. Past, present, and future exist therefore in the present—the past is the present memory of the past, the present is present perception of the present, and the future is present anticipation of the future. According to Bergson, the time of science is a spatialized time, whereas the duration of consciousness is a flowing current that has two characteristics: absolute novelty at each instant, and infallible and total conservation of all the past.

Many of the characteristics attributed to time, which seem to be substantive and not merely semantic, follow from the choice of commonplaces which determine inquiry and are not the products of warranted knowledge. If time is the measure of motion, time is continuous and without beginning or end; if motion is the measure of time, time begins with the beginning or creation of the world. Aristotle held that matter, motion, and time are eternal; Plato, Plotinus, and St. Augustine held that time began with the beginning of the world and of the life of the world soul. The choice moreover determines different characteristics for time: for the former time is associated with par-
ticular motions and neither space nor time are empty or characterless; for the latter time flows evenly and smoothly.

"Time and space" is a topic involved in the measurement of time, both in the theoretic and the chronometric measurement. Motion was defined and analyzed in terms of time and space even in antiquity. Galileo's construction of equations for motion and acceleration involved, to use Bergson's term, the spatialization of time, the representation of both time and distance as straight lines. He conducted experiments to determine the acceleration of falling bodies using a crude clock, water dripping from the hole of a container. He made imaginary experiments with the pendulum. It was not until Huyghens perfected the pendulum and constructed a precision clock that the measurement of the accelerations of rolling balls or swinging pendulums was possible, but the experiments were then unnecessary since the pendulum clock was at once the measuring device and the experiment. When Newton distinguished absolute motion from relative motion, absolute time was distinguished from relative time. Absolute time, like Galileo's time, flows evenly. In relativity physics the dimensions of time and space are inseparable, and motion is conditioned by the characteristics of space-time to follow the paths of geodesics. The theoretic measurement of time is inseparable from the technological measurement of time. Artificial measuring devices have been constructed from antiquity to the present, in the East and in the West. The use of natural measuring devices has had a similarly long history, observation of the positions of the planets, to physical and biological rhythms of vibration, to the rate of disintegration of radioactive elements. Similar natural measuring devices have been sought for historical time—geological formations, fossil remains, the rings of trees—and they have been supplemented by the artificial devices of archaeology and the extensions of human history from local histories and travel accounts of foreign places, to the universal histories of empires and religions, to the universal histories of arts and sciences and of culture and mankind.

If these variations in the meanings and instances of time were presented as an account of doctrines or of statements alleged to be true, they would each be in contradictory and incompatible oppositions to the others. Since they have been presented as a pattern of commonplace possibilities for analysis, inquiry, and application, they stand instead in the relation of alternatives which focus on different aspects of time brought to the attention by different temporalities from which time takes its meanings. As alternatives they open up the way to progress in the investigation of time and the way to intelligibility in the comparison of doctrines of time developed in different philosophies in different cultures and at different times in each tradition. They afford a means of transition from the times of histories to the times of sci-
ences, to the times of arts, to the times of experiences; and they suggest that there is a variety of kinds of histories, of sciences, of arts, and of experiences which deserve to be distinguished and examined as functions of time. They suggest that the commonplace used as the title of an influential modern book, *Being and Time*, might make the analysis of time developed in that topic clearer, if the topic itself were considered in contrast to alternative topics which it displaces—phenomena and time, motion and time, existence and time, nature and time. They suggest, in turn, topics in which time is related not only to objects which are determined and constituted in time, but also to faculties of the mind by which time is perceived and comprehended—sensation and time, memory and time, imagination and time, discursive reason and time, understanding and time, intuition and time. These commonplaces suggest the need to examine the commonplaces of living processes by which the processes of the observer and thinker are related to the processes observed and thought. They are devices by which comparative philosophy may uncover, in its inquiries and analyses, not rigid structures of dead, past philosophies or of opaque alien philosophies but living relations that animate past and unfamiliar inquiries and controversies and that are still relevant and operative in contemporary problems oriented to the emergence of new conceptions of time in the formulation and testing of new solutions to new problems.