Symmetry of STRUCTURE
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Abstracts
II.

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The history of ideas shows the building of new systems of concepts from the concepts of the past. The new concepts of scientific theories may be incommensurable with the concepts of their predecessors. Both the sense and reference of some concepts may differ, if compared. But even if concepts are new they have meanings that are analogous to ideas of the past or can be understood in relationships to old familiar ideas that form their context. How particular concepts and theories in science are related to the concepts and theories that preceded them is part of the subject of the history of science, but it is the obvious directionality of both the history of science and the history of philosophy that is the subject of this paper.

The directionality of the progress of thought is an instance of an asymmetry. It is an asymmetry that results from the creativity in the production of ideas. The direction in science is produced in part by the broadening of generalizations as it was described by Baconian induction and in part from the falling of more areas of experience within the purview of proper scientific investigation, following a scheme such as the ordering of the sciences by Comte. Either principle could be used as a criterion for the measurement of progress in science, but neither captures the intrinsic development of ideas, themselves, from one to another. In the history of philosophy the mere accumulation of concepts and theories could be used to measure progress, so that just the existence of more philosophical theories and ideas would count as progress in philosophy. But while this criterion also could be used to measure the direction and the amount of progress in the history of ideas, it is how new concepts develop out of old ones that best captures the asymmetrical directionality of the history of ideas and constitutes the dynamical process by which creativity produces an asymmetry of development within the asymmetry of time itself.
New theories are incomensurable with the ones they replace because the concepts in the new theory are not the same as the concepts in the replaced theory, but the new concepts could not come into being without some conceptual ancestors, perhaps from a different intellectual tradition or from the distant past. Einstein's theories may be incomensurable with Newton's but neither could have come into being without Euclid and Democritus. New concepts develop out of old ones, such as mass from matter, but while it can be intelligibly described there is no generalizable pattern in the process and therefore nothing regular or symmetrical with other processes of conceptual development.

There are two dimensions of the process of conceptual progress that can be distinguished. They might be called longitudinal and transverse, but both are irregular. The emergence of new ideas in the continuum of time, all the related new concepts in a field do not come into being together from their predecessors nor do they come in with any perceivable rhythmic order in time. How long a unified train of ideas will last, how rapid changes within it will be, how far back in time will ideas reach to be continuous with their predecessors will vary. Conceptual development within as well as among fields of thought appear to be woven together from uneven strands of ideas in time. If time is a derivative of events as the American philosopher, C. S. Peirce conceived it to be, then his description of time as a rope of uneven, successive, twisted structure fits the progress of thought.

If the progress of thought is viewed in transverse section, where a new idea joins its predecessors lacks any pattern. There is no designatable place or pattern of places where a new idea joins those past. There is nothing analogous to a continuation of a family's property passing through the eldest son or some other regular arrangement of offspring, only that perhaps in disanalogy to the eldest son, a perfected expression of complex ideas is often its culmination and continuations grow out from some point around it in a minor strand of the cultural context or by picking up a strand of thought from farther in the past, somewhat as new branches grow out from some apparently random point behind the leader branch.

Although we read parts of the history of philosophy as continuous, from Plato to Aristotle and from Kant to Hegel, Both Aristotle and Hegel begin somewhere else than their famous predecessors, Aristotle in Greek medicine and biology
and Hegel from theology school and Greek tragedy. Einstein draws on a different intellectual tradition from Newton. Kepler and Galileo are nearly contemporaries but worlds away from each other in thought. Visual art, once following strict traditions, now exhibits some similarities to the progress of ideas. It has drawn on the forms of modern technology as well as gone back to African and near eastern sources and some of its masters (Picasso, Chagall, Miro, and Klee) cannot be taught or gone on from, so young artists must find another point from which to continue. Not only is the progress in thought an overall asymmetrical process in time, but it is irregular in its temporal strands and in the conceptual location of the sources from which it will develop.

Symmetrical forms may be broken or compounded in ways to produce asymmetrical ones, but as C. S. Peirce said, "But everybody can see that symmetrical forms, put together symmetrically, will never make an unsymmetrical form. Why not? Because symmetry is a special kind of equality. Now equality can be built up out of inequalities; but is (sic) is evident that inequality can never result from a chain of equalities, for if one thing is equal to a second, and this second to a third, the first is equal to the third and you are precisely where you were at the outset." (C. S. Peirce. The New Elements of Mathematics. 821-822) If one begins with symmetry one will end with symmetries in the history of thought. One also tends to complete broken patterns in perception and so complete a symmetrical form. One also searches for identities that persist in time (E. Meyerson. Identity and Reality) thus adding equalities to equalities and therefore not losing the symmetries one perceives but reproducing them through time. But if the creative process in the formation of ideas lacks pattern, giving the history of ideas an asymmetrical directionality and unpredictable lines of growth, then the templates of historical understanding ought to be, themselves, asymmetrical. The understanding provided by the patterns of the past will depend on how the interpreter of the past folds the past back on to itself to produce the pattern. Just as in a Rorschach blot, the symmetry is produced by folding the blot on itself while still wet. Regularities may be produced by the process itself or if the two figures are superimposed without interacting they might reinforce some lines to form a new pattern. The possibilities for creativity of interpretation arise in the idiosyncracies of superimposition and the tolerance for asymmetrical appendages. Thus Hegel's Phenomenology of Spirit is a sometimes intelligibly patterned account with irregularities of detail that threaten to overcome it.
ENDNOTES


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