Natural Philosophy in the Renaissance

Natural philosophy, as distinguished from metaphysics and mathematics, is traditionally understood to encompass a wide range of subjects which Aristotle included in the physical sciences. According to this classification, natural philosophy is the science of those beings which undergo change and are independent of human beings. This vast field of inquiry was described in Aristotelian treatises such as Physics, On the Heavens, On Generation and Corruption, Meteorology, History of Animals, On the Parts of Animals, On the Generation of Animals, On the Soul (whose Renaissance reception is not discussed in the present entry); the so-called parva naturalia (other minor writings); and some apocrypha (e.g., the Problemata), which were taught in the universities in the Middle Ages and in the Renaissance. During the Renaissance, despite the enduring centrality of the Aristotelian paradigm for the discipline, natural philosophy was enriched and expanded by a number of further approaches. By the end of the sixteenth century natural philosophy was no longer purely identified with the Aristotelian system or a standard university curriculum. At the same time, the proliferation of new contexts and ways of learning did not automatically eliminate older ones, and this fusion contributed to the birth of modern science in a period of religious and political upheaval.

Defining Renaissance Natural Philosophy

Renaissance natural philosophy defies easy definition, since descriptions of it may oversimplify, either by reducing it to its connections with medieval science or, alternatively, forcing it into a teleology that culminates in the Scientific Revolution of the seventeenth century. Hence, there have been two opposing tendencies in scholarship: one which conflates the natural philosophy of the fifteenth and sixteenth centuries with the variety practiced in the Middle Ages, even going so far as to interpret the Renaissance as a period of conservatism in this regard; another which emphasizes the role of Renaissance natural philosophy as a "precursor" of modern science, even at the cost of ignoring or removing its connections to disciplines today considered pseudo-scientific, such as physiognomy, astrology, and magic. Recent contributions, however, have helped to outline the characteristics of Renaissance natural philosophy in their own terms. Medieval natural philosophy was usually based in the corpus aristotelicum and practiced in universities. Yet this did not mean that its approach was purely static or regressive; on the contrary, thinkers like Jean Buridan, Biagio Pelacani, and Nicole Oresme took Aristotelian physics and mechanics in new directions in medieval Europe. Nevertheless, the nature of medieval universities was such that teaching was heavily controlled

by authorities, and both metaphysics and theology exercised a strong influence, limiting the number of directions in which scientific theorization could advance. Paradoxically, it was the return of another, rival school of thought—Platonism—that ultimately allowed for more freedom within the Aristotelian tradition. Though Plato's philosophy had never completely disappeared during the course of the Middle Ages, the consolidation of a Neoplatonic school in the fifteenth century led to the clear distinctions between the spheres which properly belonged to the two great thinkers of the ancient world. While Plato was regarded as a theologian and master of the metaphysical realities, Aristotle was seen as an investigator of the sublunar world subject to generation and corruption. The recovery of this ancient dichotomy had the effect of undermining the longstanding ties between Aristotelianism and Scholasticism, and opened up new spaces for philosophy unimpaired by metaphysical limitations. At the same time, also Platonism and other brands of ancient philosophy—Stoicism, Skepticism, and Epicureanism—stimulated reflection on the natural world in different ways, also in terms of method. The application of these ideas to various fields of inquiry gave Renaissance natural thought a distinctive identity, forged in continuous dialectic with Aristotelianism. Aristotelianism therefore represented the driving force behind Renaissance philosophy of nature, both because of its plurality of approaches and internal debates, and also because it served as the polemical target of those who challenged the traditional paradigm of university teaching. Finally, other factors of a non-speculative character also had an impact on natural philosophy: technological innovations such as printing, the telescope and the microscope, geographical discoveries, and developments within the universities themselves, such as the institution of botanical gardens.

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