

A Comparison of the Works of Buridan and Oresme

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John Buridan and Oresme were both important natural philosophers of the Medieval Age in their analysis of local motion. While some scholars consider the Middle Ages as a 'dark age' of little scientific progress, slowly but surely scholars continue making progress in many ways. Simply generalizing the activities of the Middle Ages as a period of refutation of previously established philosophical systems ignores the fact that scholars such as Buridan and Oresme also reinforced ideas they were able to substantiate with observed data as well as propose new ways of understanding that, while superseding previous conventions, did not simply discount them without providing an alternative explanation or reasoning. Changes in epistemology and understanding of the physical realm over time can only be fully understood by learning how both of these elements evolved in the Medieval period. By noting Buridan and Oresme's structure of arguments and methods of justification, one can begin to understand how important medieval philosophy was to the progression of the scientific understanding that has become the foundation of modern knowledge.

Both documents are arranged in a recognizably similar fashion. Each provides a systematic justification or rebuttal of a historical idea from its primary source, in most instances these are passages of Aristotle, and draws a general conclusion or theorem from them. The authors then continue to provide common sense, sometimes physical-world examples, which illustrate that this point is or is not always true. Both documents make use of observation or simple experimentation to substantiate a logical conclusion, utilizing a "scientifically systematic" style that modern science is based strongly upon.

Unlike many texts before Buridan and after Oresme which tend to defend unabridged Aristotelian physics, both Buridan and Oresme seek to redefine Aristotle's physics to form a better model of the actual behavior of the physical realm, not necessarily adhering to previously defined physical laws.

Both Buridan and Oresme accept the Aristotelian idea of a prime mover in their new justifications. Buridan, in his explanation of an imparted natural quality (impetus) states that "every motion arises from a motor being present" (Buridan, 278), and even goes on to explain the motion of celestial spheres is the impetus, a quality of the spheres, that was originally imparted by God as the prime mover. Oresme makes a similar statement, that "all motion is produced by some motive power or force" (Oresme, 506). In this way, Buridan and Oresme do no attempt to redefine an Aristotelian-based understanding of physics, as their intent is not to completely discard the current system of understanding, but rather provide justifications for what they see as correct and revisions to what they cannot support by observation. Throughout both texts, Buridan and Oresme explain or redefine Aristotle passage by passage, replacing broad statements based on common sense with logical conclusions that can instead be justified by observation. It is interesting to note that not only does the idea of a prime mover persist with Buridan's work, but perhaps also the idea of causation. Buridan's impetus resembles in part Aristotle's efficient and final causes. His proposed force of impetus, however, subtly replaces the idea that these objects are propelled by cause in part, but by using impetus, the same result is achieved through a similar understanding and with quantifiable, observable outcome.

John Buridan's examples appear to be more grounded in the physical realm than Oresme's in substantially fewer references to God (or the supernatural) when drawing generalized theories. For example Buridan makes several references to the tendencies of motion of lances and ships and uses their observed behavior as the basis for a more generalize conclusion (Buridan, 276). An example of a passage from Oresme's works find the following phrase, "A further sign that rest is best is that we pray for the dead that God may give them rest... Therefore, to rest or to be moved less is a better and nobler condition". (Oresme, 508) A notable difference is that Buridan's example uses a physical tendency and applies it towards other physical objects. This particular example by Oresme uses a metaphysical, or social, tendency and from it draws a physical argument. It is important to note this distinction when tracing the history of science as these two hypothesis testing methods could yield very different results; however, it is not appropriate to assume that Buridan is more "correct" or "scientific", for the quotations alone do not take into account the historical context, that these two extrapolations may have been viewed as equally acceptable, though modern scientists would note a major difference. There is perhaps a distinction in intent, as Buridan's writings seem to give empirical support or corrections to already existing physical ideas, while Oresme's constant references to God and Scripture seem to indicate he is rather reconciling a new physical understanding with Christianity.

While the period of time from the beginning of the Early Middle Ages to the end of the High Middle Ages has had many individual natural philosophers that have proposed revisions to established systems of understanding of the world, Buridan's and

Oresme's works not only provide new systems of understanding, but also enforce their or existing principles with observed data, providing a solid framework, able to be built upon by future scholars. Moreover, a systematic way of breaking down historical arguments and scrutinizing them works to establish a foundation for a methodic approach to epistemology. Both natural philosophers' works build upon a previously established system of understanding, at some points providing revisions, which constructed a strong foundation for future scholars.

Bibliography

Grant, Edward. A Sourcebook in Medieval Science. Cambridge, MA: Harvard UP, 1974. pp 276,278 (Buridan), pp 506, 508 (Oresme).