



AN ENCOUNTER WITH THE
NATURAL SCIENCES
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I came to the Wiko with the intention of completing the study of one part of a larger project that deals with the reception and transformation of Aristotle’s theory of demonstration in Late Antiquity – the late ancient commentators’ conception of knowledge and proof in the natural sciences. In so doing, I focused on one of the more innovative contri-

butions of the late ancient commentators to the methodology of science in the Aristotelian tradition – the notion of sign-based proofs (*teikmēriōdēs apodeixeis*). By introducing this notion, the late ancient commentators go beyond Aristotle in (1) viewing non-explanatory proofs as an acceptable type of proof in the Aristotelian framework and (2) searching for a means for proving the principles (i.e. the first premises) of demonstration, which are in Aristotle's view indemonstrable. In my study of this notion, I tried to understand, among other things, the philosophical motivation for considering non-explanatory proofs demonstrative, the modifications of Aristotle's notion of proof that facilitated this expansion of the theory of demonstration, and the reasons why this type of proof befits the natural sciences rather than any other branch of knowledge. I started this study before my arrival at the Wiko, and already on my way to Berlin I seriously considered calling it off. After almost a year of analysing the relevant sources, I had merely a fragmentary picture in my mind. Particularly, the two main sources, which according to the received view present one and the same account of sign-based proofs, not only seemed to propound two accounts, but these accounts also seemed to me absolutely unrelated to one another.

Despite my desperation, I presented this subject in my Tuesday Colloquium talk. The need to present my subject to an heterogenic audience forced me to focus on the basic question that motivated my research, i.e. why do the ancient commentators admit non-explanatory proofs into the Aristotelian model? This effort was proved fruitful in the case of one of the accounts found in the late ancient sources – Simplicius. While preparing this talk, I managed to trace the origins of Simplicius' account of sign-based proofs to Alexander of Aphrodisias, and this in turn enabled me to understand the conceptual change that gave rise to the introduction of these proofs. I realized that considerations regarding the argumentative force of proofs led thinkers in later Antiquity to claim that, in addition to the requirements that Aristotle lists in his *Posterior Analytics*, the principles of proofs should be easily accessible to the human mind or in Aristotelian terms better known to us. A major implication of this view is that it is epistemologically and methodologically preferable to base proofs on things that are better known to us when these do not coincide with things that are better known by nature. This implication leads in turn to a distinction between two types of proofs: (1) explanatory proofs that proceed from premises that are both better known by nature and to us and (2) non-explanatory proofs that proceed from premises that are better known to us but not by nature, or in other words, sign-based proofs.

While these results facilitate a general understanding of Simplicius' notion of sign-based proofs, it does not suffice to explain its details. Therefore, I concluded my Wiko talk with a list of questions regarding the differences between Simplicius' and Alexander's conceptions of causality and explanation of natural phenomena. Particularly, why does Simplicius think that Alexander's view fails to account for the regularity of natural processes? To answer this question, I started to examine the explanatory role of substantial forms, definitions, the rotation of the heavenly bodies, and ultimately the prime mover in Alexander's philosophy. However, I did not pursue this examination systematically. Why? I guess that I am not the first Wiko Fellow who has asked himself or herself this question and I am not the first to find the answer in the lively and stimulating social and intellectual interaction that the Wiko offers. Yet, instead of carrying me away from my subject, this interaction led me back to the issue which was the source of my desperation when I arrived in Berlin, i.e. the relationship between the two accounts of sign-based proofs found in our late ancient sources. As I began to see more correlations between modern and ancient debates on the explanation of natural phenomena, I also found the point of contention that led the two late ancient commentators – the aforementioned Simplicius and Philoponus – to develop two different and incompatible accounts of sign-based proofs: that is, the question whether nature operates mechanistically or teleologically. Having understood this, I began to see how specific arguments in one of these commentator's works were devised to avoid the criticism found in the other and vice versa. This result summarizes my Wiko experience and not only from a professional point of view. Both in my research and in my personal interaction with the other Fellows I learned to see connections and links in places where I could not see them before.