



The great chain of knowing

Jan Faye: The biological and social dimensions of human knowledge.
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Naturalistic epistemology has a bit of an odd status in philosophy nowadays. Most philosophers would probably agree that knowledge is a natural phenomenon, albeit with a distinctive normative nature, and that, as such, epistemology should take into serious consideration the relevant results of natural sciences. Nevertheless, naturalistic epistemology seems to have somehow acquired a bad reputation among philosophers, up to the point that it has become quite rare to find contemporary epistemological works that explicitly situate themselves in this tradition. Jan Faye's book, instead, clearly states this intellectual heritage in its first sentence: "What you are about to read is a naturalistic account of human knowledge in a biological and social setting" (v).

Faye's naturalistic account of human knowledge centers around the division between biological and social forms of knowledge. Biological forms of knowledge encompass all forms of experiential knowledge that we share with many animals. These kinds of knowledge are non-linguistic, and they are justified non-propositionally via the evolutionary reliability of the cognitive mechanisms that produced them. Social forms of knowledge, instead, encompass all linguistic forms of knowledge, and they are, for the most part, typically human. Their justification is based on epistemic norms that are ultimately conventional in character. In this way, Faye divides human knowledge into two different dimensions, a biological one, in which knowledge is understood as a pure cognitive adaptation to the environment, and a social one, in which knowledge is a cultural product of humans' self-reflection ability.

The nine chapters of the book take us on a journey through the different types of biological and social knowledge. We start with very basic forms of experiential knowledge and, chapter after chapter, we make our way to the pinnacle of human

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knowledge, namely, science. The book can be naturally divided into two parts: a first part, encompassing Chapters 1 to 4, and a second part, encompassing Chapters 5 to 9.

The first part of the book describes the biological forms of knowledge. Chapter 2 starts with the most basic form of knowledge of the external world that humans and animals share, i.e., image-based knowledge. This denotes the disposition of organisms to adapt their behavior to specific sensory images. Such a simple, automatic recognition of some part of the environment by an organism does not involve any belief or concept. Yet, it is the most widespread form of knowledge of the environment that organisms have, as Faye argues with a series of specific examples of animal knowledge. Then, we encounter concepts-based knowledge, a more complex form of knowledge thanks to which organisms can classify sensory information into types. Chapter 3 discusses two other basic forms of knowledge, i.e., behavioral and actional knowledge. These two forms are structurally equivalent to image-based and concepts-based knowledge, but they are acquired through our internal senses instead of our external ones. This chapter also contains an interesting deflationary discussion of the know-how/know-that distinction. Chapter 4 defends the knowledge-status of these biological forms of knowledge against some traditional philosophical arguments. Faye offers a convincing non-propositional reliabilist justification of biological forms of knowledge: these forms of knowledge are of a pre-linguistic nature and, as such, they are directly justified by the adaptive reliability of the cognitive processes that produced them. Because of the non-propositional character of this form of reliabilism, Faye argues, we do not need to resort to bedrock beliefs or indefeasible propositional justifications to justify these biological forms of knowledge.

The second part of the book, Chapters 5 to 9, describes instead the social forms of knowledge. After a discussion of how language might have evolved, we encounter, in Chapter 6, the simplest social form of human knowledge, i.e., empirical knowledge. This form of knowledge denotes everyday knowledge about the way things are, i.e., our true non-sensory beliefs about visible things. Empirical knowledge is qualitatively different from all biological forms of knowledge, in that it is expressed through language, it is propositional, and many of its features are socially determined in a conventional way. Chapter 7 describes the status of empirical knowledge from the perspective of social epistemology. We find a conventionalist characterization of traditional epistemic norms of truth and propositional justification as ultimately built upon the inter-subjective agreement between members of a community. This chapter also includes an interesting defense of testimony as a naturalistically viable form of justification for empirical knowledge. Finally, with Chapters 8 and 9, we arrive at the most cultural form of human knowledge, theoretical knowledge, and at its most reliable generator, science. According to Faye, science expands humans' epistemic repertoire with knowledge of invisible entities. More exactly, argues Faye, objects of theoretical knowledge can be invisible, but they must be somehow instrumentally observable. Otherwise, they cannot be known, but they remain only useful abstractions for organizing empirical phenomena. In this sense, we find here a sort of dual epistemological theory of scientific entities that blends experimentalism and logical empiricism. According to this view, science produces empirical and theoretical knowledge only about instrumentally observable entities, visible and invisible ones, whereas the non-observable entities postulated by scientific theories, understood as

linguistic frameworks, serve only an ancillary role as useful abstractions. In Chapter 9, this view of science is applied to two classical topics in general philosophy of science: scientific understanding and epistemic values.

There are many things to like about this book. First and foremost, in these times of philosophical overspecialization, it is refreshing to read a book that tries to build a general philosophical picture including insights from epistemology, philosophy of science, philosophy of language, as well as from various relevant scientific disciplines. Moreover, the general picture developed in this book constitutes an attractive epistemological framework for naturalistically minded philosophers. In fact, the author manages to describe the diversity of the various epistemic practices in which humans and animals engage, but, at the same time, also highlight their common cognitive-evolutionary origins.

From a critical point of view, certain parts of the book are unfortunately not as detailed and well-situated in contemporary philosophical and scientific literature as others. Consider, for instance, the notion of ‘concept’ employed in the book. This notion is very important for the overall epistemological picture of the book, because, according to the Faye, it is through concepts that animals and humans are able to acquire the most advanced biological forms of knowledge without using language. As such, one would expect a detailed characterization of what concepts are, their psychological structure and format, how they relate to each other, how they allow an organism to gain knowledge, and so on. Instead, we are given only a very minimal functional characterization of a concept and no answer to the other questions. According to Faye, a concept is “a cognitive schema of an animal that enables it to grasp a separable property or an [sic] separable object as to be a specific sort whenever it receives sensory information about this individual property or this individual object” (59). This definition gives us a rough idea of what a concept is supposed to do, namely, it is supposed to categorize sensory information via some specific cognitive mechanism, but it does not give us nearly enough information to understand the precise nature, functioning, and scope of concepts-based forms of knowledge. This lack of details is unfortunate, especially considering that cognitive scientists have recently made tremendous progress in understanding the psychology of concepts. Indeed, some contemporary accounts of concepts and conceptual development in cognitive science would have fit perfectly with the general biological-social epistemological picture of the book. I am thinking, for instance, about the so-called core cognition theories of conceptual development (cf. Carey 2009; Spelke 2022). These theories posit an inherited basis of cognitive mechanisms that equip animals and infants with specific proto-conceptual resources about certain domains of phenomena (e.g., cause, object, number, space, action), from which children develop mature inferentially-rich symbolic concepts, thanks to the aid of language and of their social environment. Analogously, it is unfortunate that the second part of the book—about the social dimension of human knowledge—does not engage much with contemporary social epistemology. Given the extremely wide scope of the book, these shortcomings in certain areas are forgivable, but it would have been nice to better situate the book in these contemporary philosophical and scientific literatures.

Finally, I will close this review with a general thought about the status of naturalistic epistemology. It is commonplace in naturalistic epistemology to complain about

the non-naturalistic status of mainstream epistemology. This book is no exception. Indeed, if one looks at what the hot topics in epistemology are nowadays, it seems that there is very little naturalistic epistemology out there. Yet, if we widen the scope of what we count as epistemology, we can find several examples of epistemological research done from a naturalistic perspective. I am thinking, for instance, about all the work that philosophers of cognitive science have recently done on the philosophical implications of recent psychology of reasoning or of the vast repertoire of models of epistemic dynamics that formal epistemology now offers. Moreover, one can find in contemporary philosophy of science several accounts of specific epistemic phenomena that take seriously the results of cognitive science. In this sense, it seems to me that naturalistic epistemology is nowadays mostly practiced outside the sub-disciplinary boundaries of traditional epistemology. If I am right, it is among these communities of self-exiled naturalistic epistemologists that this book will find its readers.

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