Book review

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Walton, D. (2016). *Argument Evaluation and Evidence*. Berlin: Springer.

1 Introduction

Walton's *Argument Evaluation and Evidence* (2016) is an ambitious book. It explores the nature of explanation, expert opinion, knowledge and evidence. Walton makes the case that contemporary methods developed in argumentation theory can help us shed light on these difficult topics. This review summarizes the main themes of the book (Section 2) and offers some comments (Section 3).

2 Summary

Chapter 1 introduces concepts familiar to those in argumentation theory. An argument consists of a set of premises and a conclusion, and the premises can support the conclusion (pro arguments) or attack it (con arguments). Arguments can be convergent (i.e. different premises support the same conclusion), divergent (i.e. the same premise supports different conclusions) or serial (i.e. the conclusion of an arguments functions as the premise of another argument). One goal of argumentation theory is to develop methods for evaluating the arguments for and against tentative conclusions. To this end, in previous work, Walton investigated different types of arguments, for example, those based on witness testimony and those based on expert opinion. In this book, Walton intends to clarify the nature of another type of argument, the so-called inference to the best explanation (Chapters 2 and 3), and further develop his examination of arguments based on expert opinion (Chapters 4, 5 and partly 6). He also sets out to address more theoretical questions about the nature of knowledge (Chapter 7) and evidence (Chapter 8).

Chapter 2 discusses inference to the best explanation. Walton refers to an explanation 'as an account of some connected sequence of events or actions that helps to transfer understanding from one party to another through a process of communication' (p. 64). Such an account is typically aimed to explain an anomaly. As made explicit in Chapter 3, an anomaly is 'something the explainee does not understand in an account, even though she understands the rest of the account' (p. 78). In such a situation, a process of inference to the best explanation is appropriate. Consider an anomalous fact, for example, the sudden death of a person. Competing explanations of this fact are possible, such as: the death was natural; the death was accidental; the neighbor killed the victim; a stranger did. An inference to the best explanation selects the explanation that outperforms its rivals, where each explanation takes the form of a story, that is, a spatiotemporal sequence of events and actions. To model inference to the best explanation, Walton first proposes a backward argumentation scheme (p. 65). The premises of the scheme are threefold: (1) a set of data and facts to be explained; (2) statements that each of the competing explanations explains the data and facts; (3) the statement that one of the explanations is the most successful. The scheme's conclusion is the most successful explanation. The scheme comes with critical questions such as: How satisfactory is each account as an explanation? How much better is the best explanation compared to the others? Should the dialogue be continued before drawing a conclusion? This backward argumentation scheme, however, still leaves the process of selecting the best explanation somewhat opaque. What is needed, Walton argues, is a way to combine explanations with supporting reasons and arguments in a dialogical system. This is the problem addressed in the next chapter.

Chapter 3 develops a dialogue-based framework to assess stories *qua* explanations. Suppose an interlocutor puts forward an explanation for a known fact, while the other interlocutor challenges it and formulates an alternative. The proposed explanation is successful and better than the alternative, Walton argues, provided it survives challenges. A potential problem here is subjectivity. How can we avoid making the success of an explanation too much dependent on those who challenge it? Walton's answer is that explanations must be supported by arguments, and the competing explanations, if they are to be excluded, should lack appropriate argumentative support. The best explanation, then, will be the one that is supported by the strongest argument.

Chapter 4 and 5 (and partly Chapter 6 on the distinction between cor-

relation and causation) assess arguments based on expert opinion. A typical argument from expert opinion has the form "Expert A says X. Therefore X". The motivation for the chapter is that experts disagree and in many cases have been proven wrong. We should therefore not trust them blindly, and argumentation theory offers us a method to orient ourselves in the face of conflicting expert testimonies. These chapters contain interesting case studies. In Chapters 4 and 5, the examples are from art history, in which art critics and scientists disagreed about the authenticity of artworks. Walton reconstructs the conflicting arguments by dissecting, charting and weighing them through critical questions, such as: How credible is the expert? Is the expert prepared in the field? Is the expert biased? Chapter 6 discusses arguments about public health issues, such as southern Pacific weather patterns and flu pandemics. The examples are discussed in the context of intelligent systems that can support the assessment of conflicting arguments and the weighing of reasons pros and cons.

The two final chapters of the book are devoted to deep philosophical questions about the nature of knowledge and its relation to evidence and arguments.

Chapter 7 defends a process-based, fallible account of knowledge. On this account, knowledge is the result of a process of dialogical inquiry in which propositions are tested and scrutinized in light of the evidence and arguments available. If propositions survive testing and the supporting evidence is strong enough to meet the applicable standard of proof, they become knowledge. New evidence may later defeat propositions previously known. Knowledge is thus both fallible (because unassailable certainty is not required) and revocable (because it could be later defeated). This process-based, defeasible account of knowledge is informed by the theories of Pierce and Popper, and Walton complements these with recent developments in the formal and computational study of argumentation, for example, Carneades, ASPIC+ and DefLog. Some might object that items of basic knowledge such as "I have hands" are not arrived at by means of a process. Walton responds that even "I have hands" derives from a defeasible process of knowledge acquisition, of the form "the senses tell me that I have hands unless an exception holds (e.g. I am hallucinating), and since there is no evidence that an exception holds, it can be concluded, defeasibly, that I have hands". In this way, the proposition "I have hands" is not immediate and fits into a model of fallible, process-based knowledge. In his discussion, Walton develops his earlier work in which he proposed a pragmatic conception of knowledge. On this concep-

tion, everyday knowledge is stored in our memory—what computer scientists call the knowledge base—and this knowledge is both incomplete and fallible (p. 212).

Chapter 8, the last in the book, discusses the relationship between arguments and evidence. Walton begins by noting an ambiguity in the use of the word 'evidence'. Broadly speaking, any argument that supports a certain conclusion provides evidence for that conclusion. More narrowly, only certain specific kinds of reasons count as evidence, for instance those based on observations, statistics or other scientific results. He addresses the issue of distinguishing between arguments and evidence, and at the end of the book discusses three factors. First, it matters whether the kinds of evidence used are right for the argumentation in a given case. Second, the argument given should fit a recognized argumentation scheme. And third, the argument should be 'found in the knowledge base representing the evidential findings in the case that have been accepted as factual' (p. 276).

3 Comments

As in much of his work, Walton uses his well developed perspective on argumentation and dialogue to investigate hard problems that have also been investigated by other disciplines, especially analytic philosophy and epistemology. Here he applies the tools of argumentation theory—many of which he developed or has helped develop—to shed light on the relation between arguments and explanations; arguments and knowledge; and arguments and evidence. He integrates scholarship from neighboring fields such as epistemology and philosophy of science, and includes new developments such as the formal and computational study of argumentation (associated with the biennial COMMA conference series and the journal 'Argument and Computation). In these ways, Walton's book is a useful and interesting scholarly contribution.

As expected for a book on these difficult themes, there is room for further exploration. A first area of further research is the development of a theory of (the best) explanation. In Walton's book, not much is said about the notion of explanation itself. A key part of the notion is that an explanation is meant to address an anomalous fact or that it should convey to an interlocutor an understanding of the fact to be explained. But it seems that there are explanations of facts that are not thought of as anomalous. We seek, for

example, an explanation of why the sun rises every morning, which is hardly an anomalous fact, or if it is, it would be anomalous in a different, more specific way to be made explicit. Further, while explaining might sometimes involve the act of conveying to an interlocutor a certain understanding of the fact to be explained, this is not always the case. Relativity theory, for example, explains a number of things in a way that most people do not understand. Presumably, Walton's focus is mostly on a communicative theory of explanation or a common sense theory. An extended theory of explanations and their quality could provide more insight about the scope of the intuitions made explicit by Walton.

A second area of further work is how Walton's theory of knowledge relates to existing theories in contemporary analytic epistemology and philosophy of science. In Chapter 7, Walton attacks the thesis that knowledge of a proposition p implies the truth of p, and goes on to offer a fallibilist theory of knowledge. Walton seems to believe that the fallibility of knowledge is incompatible with the thesis that knowledge implies truth. This might seem plausible at first. If knowledge implies truth, knowledge admits of no mistake, and hence knowledge would not be fallible. However, the mainstream position among analytic epistemologists is different. Many contemporary theories of knowledge in the analytic tradition, in fact, are fallibilist but also embrace the thesis that knowledge implies truth. How can that be? The fallibility of knowledge means that one's knowledge of a proposition does not require having ruled out every possibility of error or deception relative to the proposition being known. For example, I can know, presumably, that I have hands, even without ruling out every far fetched possibility of error, such as, being systematically deceived, being a brain-in-a-vat, being always hallucinating.

I AM NOT YET HAPPY WITH THIS PART. For two reasons: 1) It uses anti-common sense examples (brains in vats). 2) It is not entirely transparent. I tried to start thus, but encountered an incomplete grasp of the subject matter:

In a fallibilist, truth-implying theory of knowledge, four situations must be distinguished:

1. A belief is justified (given current evidence) and true.

2. A belief is justified (given current evidence) and false.

3. A belief is unjustified (given current evidence) and true.

4. A belief is unjustified (given current evidence) and false.

Only a belief in the first of these four situations counts as knowledge. HERE IS WHERE I GOT STUCK: AS THIS MAKES KNOWLEDGE INFALLIBLE. ONLY WHEN TYPE 2 ALSO COUNTS AS KNOWLEDGE WE CAN HAVE FALLIBLE KNOWLEDGE. DOES IT?

Contrary to what Walton seems to think, then, there need not be a conflict between the fallibility of knowledge and the thesis that knowledge implies truth. ONLY WHEN TYPE 2 ABOVE COUNTS AS KNOWLEDGE. BUT THEN KNOWLEDGE IS NOT JUSTIFIED TRUE BELIEF AND I GET CONFUSED. (NEED TO CHECK POLLOCK'S BOOK ON EPISTEMOLOGY. NOT WITHIN REACH ;-))

Third, in this book Walton touches upon the perennial problem of skepticism, but does so in a way that requires more explaining. Here is a classical example. I see a cat in from of me. The sensory evidence available to me supports the conclusion that there is indeed a cat in front of me. Can I thereby conclude that I know there is a cat in front of me? After all, I could be hallucinating, seeing a hologram, or anything of that sort which would undermine my presumptive knowledge. This is the skeptical challenge. On page 232, Walton suggests that the lack of evidence that I am hallucinating supports the conclusion that I am not hallucinating, because if I were hallucinating, there would be evidence that I was. So, Walton argues, given that there is no such evidence, it can be concluded, defeasibly, that the there is a cat in fort of me. But there are reasons to pause here. If I were hallucinating, this would make it impossible to recover any evidence that I am or am not hallucinating. The fact that there is no evidence that I am hallucinating is precisely what I would expect if I were hallucinating. The same point can be put in terms of an explanation. Both the hypothesis that I am hallucinating and the hypothesis that I am not hallucinating equally explain (or predict) the absence of evidence that I am hallucinating. So, neither of the hypotheses can be preferred, and that is why skepticism is so hard to dismiss. The reasoning pattern according to which the absence of evidence that I am hallucinating licenses—even defeasibly—the conclusion that I am not hallucinating (and, in turn, licenses the conclusion that there is a cat in front of me because I see one) seems dubious. On what basis is this reasoning pattern justified? Walton seems to take it for granted without offering any clear justification.

Fourth, it would be interesting to know where Walton stands on the foun-

dationalism v. coherentism debate in epistemology. For instance, Pollock has contributed to this debate using an argumentation perspective. Foundationalists believe that knowledge must rest on certain basic propositions, which cannot be further questioned. By contrast, coherentists believe that knowledge emerges from a web of beliefs. The combination of mutually reinforcing beliefs constitutes the edifice of knowledge. In Chapter 8, Walton seems to lean toward foundationalism by postulating that there exists a knowledge base, internal to each knower or group of knowers. Propositions that belong to the knowledge base are not further questioned. This resembles foundationalism. But if so, the question remains of how the knowledge base is constructed. Could any proposition count as part of the knowledge base? Are there criteria for a proposition to be part of a knowledge base? Is the choice pragmatically determined by the needs of the knowers, or are there more objective, or intersubjective, criteria that apply? Is the knowledge base subject to change? THE PRECEDING PART I SLIGHTLY EDITED

Let us conclude by mentioning a specific contribution Walton makes which distinguishes his theory from mainstream analytic epistemology. It is the process-based, or inquiry-based, approach to a theory of knowledge. Analytic philosophers have been mostly concerned with the statics of knowledge, that is, with identifying conditions under which a certain evidential state, held by a group or by an individual, counts as knowledge. Despite some recent work (see, for example, Dynamic Epistemology Logic), most analytic philosophers have not been much concerned with the dynamics of knowledge, that is, with the process by which knowledge is acquired and lost. Such a process-based perspective as Walton brings to the table is particularly interesting from a philosophical point of view. IS THIS THE ONLY CONTRIBUTION WRT EPISTEMOLOGY? I SEE MORE: THE STRUCTURE OF JUSTIFICATION (ARGUMENTS), PATTERNS OF JUSTIFICATION (ARGUMENT SCHEMES), DIALOG BETWEEN DIFFERENT PARTIES

4 Concluding remarks

All in all, this book offers a wealth of insights, ideas and interesting examples. It is written by one of the foremost experts in the field, and those interested in argumentation theory and its epistemological underpinnings will certainly profit a great deal from reading it.