

Book review

Marcello Di Bello, Bart Verheij

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, mostly on the relationship between argumentation theory and contemporary analytic epistemology (Section 3).

2 Summary

Chapter 1 introduces basic concepts from argumentation theory. An argument consists of a set of premises and a conclusion, where 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 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 6). He also sets out to address epistemological 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, defined as ‘something the explainee does not understand’ (p. 78). To illustrate, consider an anomalous fact, for example, the sudden death of a person. This event can be explained in a number of ways: the death occurred naturally; the neighbor killed the victim; a stranger did; etc. An inference to the best explanation selects the most successful explanation which 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 proposes an 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 explanation? How much better is the best explanation compared to the others? This 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 topic of 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 can survive all the challenges that the other interlocutor poses. A potential problem here is subjectivity. How can we avoid making the success of an explanation too dependent on the interlocutor’s challenges? 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, 5 and 6 assess arguments based on expert opinion. A typical argument from expert opinion has the form “Expert A says X; therefore X”. The motivation for these chapters 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 is about the distinction between correlation and causation. It 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 a proposition survives testing and the supporting evidence is strong enough to meet the applicable standard of proof, it becomes an item of knowledge. On Walton's account, new evidence that contradicts existing evidence may later defeat propositions previously known. In this sense, knowledge is fallible, never definitive and subject to change. This process-based, defeasible account of knowledge is informed by the theories of Peirce and Popper, but Walton complements these with recent developments in the formal and computational study of argumentation, for example, Carneades, ASPIC+ and DefLog (Gordon et al., 2007; Prakken, 2010; Verheij, 2005). 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. Such a process can be roughly described as follows: since the senses attest that I have hands and since there is no evidence to the contrary (e.g. I am hallucinating), 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 builds on some earlier work in which he proposed a pragmatic conception of knowledge (Walton, 2005). On this conception, 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

In this book, Walton 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 topics, 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. A broader theory of explanation 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. Many epistemologists hold that a proposition is known only if it is well supported by the evidence. This can hardly be questioned, and Walton would certainly agree. But here is where Walton distances himself from analytic epistemol-

ogy. While many epistemologists hold that for a proposition to be known, it must be true, Walton claims that the truth requirement must be abandoned. In Chapter 7, he argues that philosophers have not sufficiently motivated why knowledge should require truth. This is correct. The truth requirement, in fact, is almost entirely taken for granted in contemporary epistemology. But Walton offers (what he takes to be) a stronger objection: the fallibility of knowledge is incompatible with the thesis that knowledge implies truth. In other words, if knowledge is fallible, it cannot imply truth. At first blush, this seems correct. If knowledge implies truth, it admits of no mistake, because whenever something is known, it must be true. Hence, it would seem, if knowledge implies truth, knowledge must be infallible. And yet, many contemporary theories of knowledge in the analytic tradition are fallibilist but also embrace the thesis that knowledge implies truth (for references, see Ichikawa and Steup, 2012; Steup, 2005). How can that be? Consider an example. An eyewitness claims she saw the defendant near the crime scene at a particular time. Suppose the testimony is scrutinized and checked against other eyewitness reports, and nothing wrong is found with the testimony. Further, the claim made by the witness is true, that is, the defendant was in fact at the crime scene at the time the witness claims he was. Since the claim is both well supported by the evidence and true, it counts as an item of knowledge (under the theory that knowledge implies truth). Can this still be fallible knowledge? It can. Suppose new evidence—*prima facie* reliable evidence—comes up, and this evidence contradicts the eyewitness testimony. The claim that the defendant was near the crime scene would still be true, but in light of the new evidence, it would no longer be well supported by the evidence. The claim would therefore not be an item of knowledge. So, *pace* Walton, the fallibility of knowledge is compatible with the thesis that knowledge implies truth. Does Walton have any stronger reason to reject the requirement that knowledge implies truth?

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 front 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. Walton suggests (p. 232) 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 there is a cat in front 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, a criterion in terms of evidence and explanation does not distinguish between the two hypotheses, and that is why skepticism is so hard to dismiss. Hence concluding that I am not hallucinating—and, in turn, that there is a cat in front of me—on the basis of the absence of evidence that I am hallucinating is a reasoning pattern that is hard to justify. Walton seems to take it for granted, perhaps for reasons of pragmatism, but more is to be said here.

Fourth, it would be interesting to know where Walton stands on the foundationalism v. coherentism debate in epistemology. For instance, Pollock has contributed to this debate using an argumentation perspective (Pollock, 1986, 1995). 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, so that 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? Walton mentions the role of commitments in critical dialogue in passing (cf. also Walton and Krabbe 1995), but we would have liked to read more about this in connection to the specific theme of knowledge.

Let us conclude by mentioning a couple of original contributions Walton makes which should be of interest to those in mainstream analytic epistemology. The first is a process-based, or inquiry-based, approach to a theory of knowledge. Analytic epistemologists 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 Epistemic Logic*; Baltag and Renne, 2016), 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.

Another interesting contribution is Walton's dialogical and argumentation-based approach to epistemology. This is not a new idea in philosophy. The suggestion that knowledge has to do with answering challenges can be found, among others, in the writings of John Austin (1946; 1962) and Nicholas Rescher (1977; and more recently 2003; 2005). But philosophers are often concerned with general theories. Walton offers more details and brings his distinctive perspective with much emphasis on real life argumentation, as opposed to the armchair examples that many philosophical studies remain limited to. Walton uses argument schemes and critical questions to describe the structure of justification and evidence. Arguments can be dialogically tested, strengthened or undermined, in a variety of ways, for example, by challenging their premises or the connection between premises and conclusion.

4 Concluding remarks

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

References

- Austin, J. L. (1946). Other minds. *Proceedings of the Aristotelian Society*, Supplementary Volume 20:59–69.
- Austin, J. L. (1962). *Sense and Sensibilia*. Oxford University Press, Oxford.
- Baltag, A. and Renne, B. (2016). Dynamic epistemic logic. In Zalta, E. N., editor, *The Stanford Encyclopedia of Philosophy*. Stanford University.
- Gordon, T. F., Prakken, H., and Walton, D. N. (2007). The Carneades model of argument and burden of proof. *Artificial Intelligence*, 171(10–15):875–896.
- Ichikawa, J. J. and Steup, M. (2012). The analysis of knowledge. In Zalta, E. N., editor, *The Stanford Encyclopedia of Philosophy*. Stanford University.
- Pollock, J. L. (1986). *Contemporary Theories of Knowledge*. Rowman and Littlefield, Totowa (New Jersey).

- Pollock, J. L. (1995). *Cognitive Carpentry: A Blueprint for How to Build a Person*. The MIT Press, Cambridge (Massachusetts).
- Prakken, H. (2010). An abstract framework for argumentation with structured arguments. *Argument and Computation*, 1(2):93–124.
- Rescher, N. (1977). *Dialectics: A Controversy-Oriented Approach to the Theory of Knowledge*. State University of New York Press, Albany (New York).
- Rescher, N. (2003). *Epistemology: An Introduction to the Theory of Knowledge*. State University of New York Press, Albany (New York).
- Rescher, N. (2005). *Epistemic Logic: A Survey of the Logic of Knowledge*. University of Pittsburgh Press, Pittsburgh.
- Steup, M. (2005). Epistemology. In Zalta, E. N., editor, *The Stanford Encyclopedia of Philosophy*. Stanford University.
- Verheij, B. (2005). *Virtual Arguments. On the Design of Argument Assistants for Lawyers and Other Arguers*. T.M.C. Asser Press, The Hague.
- Walton, D. N. (2005). Pragmatic and idealized models of knowledge and ignorance. *American Philosophical Quarterly*, 42:59–69.
- Walton, D. N. and Krabbe, E. (1995). *Commitment in Dialogue. Basic Concepts of Interpersonal Reasoning*. State University of New York Press, Albany (New York).