

Redefining Knowledge in a Way Suitable for Argumentation Theory

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ABSTRACT: Knowledge plays an important role in argumentation. Yet, recent work shows that standard conceptions of knowledge in epistemology may not be entirely suitable for argumentation. This paper explores the role of knowledge in argumentation, and proposes a notion of knowledge that promises to be more suitable for argumentation by taking account of: its dynamic nature, the defeasibility of our commitments, and the non-monotonicity of many of the inferences we use in everyday reasoning and argumentation.

KEY WORDS: argumentation schemes, burden of proof, critical questions

INTRODUCTION

Knowledge¹ plays an important role in argumentation. Not only does knowledge frequently describe the initial-state and desired end-state of argumentation, but it can even have a role in justifying moves made within argumentation from the initial to the end-states.

Because of the important role that knowledge plays in argumentation, one might expect that argumentation theorists have a relatively well-worked out, clearly-defined, and uncontroversial notion of it. Surprisingly though, this seems not to be the case. Instead, it would seem that argumentation theory lacks a workable notion of knowledge, and furthermore that other branches of philosophy are unable to supply such a concept in a straightforward way.

Before going any further, it is perhaps worthwhile to make a quick point about something that we are not trying to do in this paper. It is commonly held that there are several theoretical approaches available to the study of argumentation. Lumer (2005, pp.

¹ In this paper we are concerned primarily with propositional knowledge (knowledge that *p*), as opposed to procedural knowledge (knowing how to *a*, where *a* is some activity or action), or direct knowledge (knowing *o*, where *o* is some object). When, in the paper, we speak of knowledge in an unqualified sense, we should be understood as restricting our considerations to cases of propositional knowledge.

189-190) contrasts rhetorical and consensus theories with epistemological ones. Epistemological theories might be distinguished in that they conceive of argumentation theory as – to use Mark Battersby’s apt phrase – *applied epistemology*, and further take epistemology to supply or underwrite at least the normative components of the theory. Biro and Siegel (1992, p. 96), for example, write that “An argument succeeds epistemically (rather than rhetorically, pragmatically, etc) to the extent that it advances the knowledge of the arguer or her audience or provides good reasons for the belief or acceptance of a proposition.” In this paper, we make no argument against epistemological approaches to argumentation so conceived. Our argument in this paper is not so much about how the study of argument should be approached, but rather deals with how the notion of knowledge should be conceived by any theory of argument.

In this paper we examine some of the prevailing notions of knowledge for their suitability in argumentation theory. We begin by describing the role that knowledge plays in argument and inquiry. We proceed to set out two of the more common definitions of knowledge, one from modal epistemic logic and the other from normative epistemology. We then note several problems with attempts to apply these existing accounts of knowledge in argumentation theory. Observing these problems in view of the role knowledge plays in argumentation suggests a pragmatic approach to conceiving knowledge in argumentation might be more promising. In adopting this perspective, we conclude by providing a set of criteria which any notion of knowledge suitable for argumentation theory should meet, and propose a provisional definition of knowledge for the purposes of argumentation.

THE ROLE OF KNOWLEDGE IN ARGUMENT

In order to specify a concept of knowledge suitable for argumentation, it is worthwhile to first consider the kind of work that the concept performs in argumentation theory. Knowledge can play at least three roles in argumentation.

First, knowledge often describes the starting place, or initial-state of argumentation. That is, argumentation commonly begins from premises or shared commitments which are not merely accepted or supposed for the sake of argument, but which are known.

Second, knowledge about some issue can describe the desired end-state of many instances of argumentation. Inquiry, or argumentation which aims at the discovery of the truth of a matter, implicitly aims at knowledge. Epistemic theories of argumentation have used this point to justify their theoretical approach. For example Siegel and Biro (2005, p. 92) write “it is a conceptual truth that the central aim of arguments is to yield knowledge or reasonable belief.” Feeling that epistemology is uniquely able to provide a suitable account of the nature of knowledge, this thesis about the goal of argumentation puts epistemological theorists in the position of being able to certify or reject the results of argumentation as epistemically fit, and thereby evaluate various processes of argumentation according to their ability to produce the desired results.

Third, knowledge can play a reason-giving role in argumentation. That is, premises which assert that a certain claim is known (either commonly, or by some agent), or that an agent is in a position to know some claim, can be used as a reason for the acceptability either of the claim itself or some other claim.

Many common forms of this type of reasoning are exemplified in the argumentation schemes. The most obvious instances of cases where knowledge plays a reason-giving, or warranting, move in argument is the common-knowledge argument, and the position to know argument. Yet, other argumentation schemes which do not explicitly rely on knowledge premises often implicitly do so. For example, Walton (1999, p. 58) writes that “appeal to expert opinion is justified as a reasonable type of argument because the expert is in a position to know.” Blair (2001, pp. 377-378) argues that the more general form of argument from authority similarly relies on knowledge

Consider the argument from authority, one form of which is the argument from expert opinion. Why may we rely on the authority of others? The answer lies in an analysis of authority or expertise. A necessary condition of authority is knowledge. If someone has knowledge in an area, then among other things they know a number of propositions belonging to it.²

Also, something similar seems to be going on when appeals to popular opinion are legitimately used argumentation. Walton (1999, p. 110) has argued that

many appeals to popular opinion have an epistemic component built in. In other words, many claims to popular opinion, when analyzed carefully, are not just claims that everybody believes such-and-such. They are implicitly or explicitly claims that everybody believes such-and-such because such-and-such proposition is common knowledge.

Finally consider reasoning from lack of knowledge. The argumentation scheme for argument from ignorance has two premises in which knowledge, or lack of it, plays a reason-giving role (Walton, 1996, p. 254).

Argumentation Scheme for Argument from Ignorance

Lack of Knowledge Premise: Proposition A is not known to be true (false).

Conditional Premise: If A were true (false), then A would be known to be true (false).

Conclusion: Therefore A is false (true).

The conditional premise depends on how complete the knowledge base is, in a given case. For example, suppose the question asked is whether Guyana is a major rubber producer in South America, and the knowledge base we have about rubber producers in South America contains a lot of knowledge about this subject. If Guyana were a major producer, that knowledge would almost certainly be contained in the knowledge base. Suppose we look through the knowledge base, and the proposition ‘Guyana is a major rubber producer’ is not known to be true. We could then conclude, on the basis of an argument from ignorance, that Guyana is not a major rubber producer. Thus argument from ignorance, or argument from lack of evidence as it might better be called, is often

² Immediately following the passage just quoted, Blair goes on to link the notion of knowledge to truth, writing: “But a proposition cannot be known unless it is true. So there is a connection between the expertise of an authority and the truth of at least some of the propositions for which the expert vouches. Although this account drastically oversimplifies the appeal to authority, I think it is *au fond* the connection between authority, knowledge and truth that authorizes inferences from what authorities or experts claim to be the case to the plausibility of those claims.”

reasonable even though it depends on what is known, what is not known, and how well what is known, or not known, is known.

Some features of knowledge as it applies to argumentation

Our approach in this paper presupposes that knowledge has the types of roles in argumentation which we have just described. On that basis we search out a satisfactory account of the nature of knowledge. Given that knowledge is properly understood to have these functions in argument, what are some of the qualities that knowledge must have in order for it to do so?

The first noteworthy quality of knowledge as it applies to argumentation pertains to the knowledge states of rational agents (i.e., arguers). Rational agents are epistemically finite entities whose knowledge states can be incomplete. This situation helps explain the use of argumentation in inquiry – to gain new knowledge thereby expanding an agent’s knowledge state. Not only are agents epistemically finite, but they are cognitively limited in epistemically important ways: they can forget things they once knew, and they cannot always be expected to understand – and therefore to know – extremely complex things (e.g., facts or claims).

In addition to having limited knowledge, rational agents also have finite reasoning abilities. This means that agents cannot always be expected follow extremely long or complex chains of reasoning or argument. Nor can they be expected to know all of the implications of their current knowledge state, and perhaps not even any particular implication or consequence without some opportunity for rational reflection or guidance. Finally, finitely rational agents cannot be expected to detect every inconsistency either manifest or latent in some knowledge-base (or set of claims). As a result, while knowledge-bases are ideally consistent, in fact they may not be.

A third important feature of knowledge as it applies to argumentation concerns the type of support required for properly justified (i.e., rationally acceptable) knowledge claims.³ If the types of arguments discussed above can, in some circumstances, provide adequate justification for acceptance, then knowledge claims can be based on defeasible support. This means that support for knowledge claims can be defeated (undermined or overridden) as new information comes to light. This fact, combined with the idea that knowers are epistemically limited leads to the idea that knowledge claims are themselves defeasible. More generally, we tend to think of epistemic agents – even rational ones – as fallible. Because of this, the standard of certainty does not seem appropriate for all claims to knowledge. Agents can make a legitimate claim to knowledge and yet be wrong, and part of the job of argumentation, and rational inquiry more generally, is to help them to get things right. Sometimes getting things right simply involves discovering new knowledge, while at other times getting things right involves giving up some existing claims to knowledge and perhaps replacing them with different claims.

The general picture of knowledge as it applies to argumentation, then, is a dynamic one whereby knowledge is not a fixed state but is always in flux. Knowledge

³ In this paper, we use the phrase “knowledge claims” in a broad sense to include not only *claims attributing knowledge* to a third-party subject (S knows that *p*), but *claims-to-have-knowledge* made by some individual subject whether tacit or explicit. As we discuss below, it is often possible to understand S’s assertion that *p*, to be a tacit claim that she (S) knows that *p*.

can increase through learning and discovery. Knowledge claims, even properly justified ones, can be subject to retraction as new information is acquired. A consequence of this general picture is that we are not always right about everything that we justifiably take ourselves to know.

Some may be inclined to describe this situation as “we do not know everything that we justifiably take ourselves to know.” We do not think that this approach is useful from the perspective of argumentation, since it only allows us to classify an item as knowledge at the end of a process of inquiry – indeed some would say only when the fact-of-the-matter about the item’s truth is known. While we admit that an item’s status as knowledge is ideally classified at the end of inquiry, in this paper we draw attention to the fact that knowledge has a role in the process of inquiry itself. Thus, what argumentation requires is a concept of knowledge that allows items of knowledge to be identified at the beginning of a process of inquiry, even if this identification is only tentative and subject to retraction as the process of inquiry proceeds.

SOME PREVAILING NOTIONS OF KNOWLEDGE & ATTENDANT PROBLEMS

Having briefly considered how the idea of knowledge seems to work in argumentation, let us now turn to the topic of what account of knowledge best suits this situation. The most convenient situation for argumentation theorists would be if they could turn directly to epistemology and simply employ some pre-packaged notion of knowledge. Yet, recent work has shown that the prospects for this are not entirely promising.

The Assumptions of Rationality

One prominent concept of knowledge is modeled in the formal systems of modal logic. Here, knowledge is characterized by the following four assumptions of rationality:

1. veridicality: $K(S,p) \supset p$
knowledge-bases contain only truths; if p is known then p is true
2. consistency: $\sim[K(S,p) \ \& \ K(S,\sim p)]$
knowledge-bases are consistent; if p is known then it is not the case that not-p is known
3. deductive closure: $K(S,p \supset q) \supset [K(S,p) \supset K(S,q)]$
knowledge bases are closed under deduction; agents know all of the logical consequences of the claims they know
4. iteration: $K(S,p) \supset K[S,K(S,p)]$
the contents of knowledge-bases are transparent to knowers; if p is known, then it is known that p is known

Walton (2005) calls this the *idealized* model of knowledge, and shows how it is unsuitable for the purposes of argumentation. In the first place, none of the assumptions typically hold for the kinds of knowers involved in argumentation (whether human or

artificial agents). Often times, our knowledge-bases, commitment-stores or belief-sets are not consistent (either inter- or intra-agent), and nor is it the case that everything we take ourselves to know (even by the best available rational lights) is true. So these assumptions certainly do not seem to be descriptively accurate. Nor are they suitable as norms, since they do not all represent appropriate ideals for rational knowers with a finite cognitive endowment. For example, Harman (1986, p. 12) has argued that the assumption of deductive closure is inappropriate as a normative principle of reasoning because it violates the principle of *clutter avoidance* (“One should not clutter one’s mind with trivialities”).

Knowledge as True Belief Plus

Perhaps the most familiar philosophical definition of knowledge is captured by Zagzebski’s (1999, p. 93) phrase that knowledge is “true belief plus something else.”

On this type of account, propositional knowledge is explained as some form of “good true belief” (Zagzebski 1999, p.99). Such accounts require that knowledge meet at least three conditions: a doxastic condition (belief);⁴ an alethic condition (truth); and an epistemic condition (goodness). The “goodness” of knowledge has been explained in a variety of ways, including justificationist, evidentialist, causal, and reliabilist (to mention a few). Further, it might turn out that different cases of knowledge will require different explanations of the epistemic condition.

Accounts of knowledge as true belief plus have been adopted by many theorists working within an epistemological approach to argumentation (Lumer 2005a, p. 190; 2005b, p. 215). Indeed, Lumer (2005a, p. 192) has gone so far as to claim that theories which use the term ‘knowledge’ in a sense different than that adopted within normative epistemology – which, Lumer claims, relates knowledge and justified belief to objective truth conditions (e.g., by identifying knowledge with the current stock of expert opinions) – do not count as epistemological approaches.

This notion of knowledge as rationally-held true belief has an important, and often neglected, role in argumentation pertaining to the assertoric speech acts made during the process of argumentation. Grice (1989) has argued that these acts should be regulated by the maxims of conversational implicature (the Principle of Cooperation, and the four categories of Quantity, Quality, Relation and Manner). Of particular interest in the is the category of Quality, under which falls the supermaxim

- *Try to make your contribution one that is true.*

and the two specific maxims:

1. *Do not say what you believe to be false, and*
2. *Do not say that for which you lack adequate evidence.*

While some dialectical accounts of argumentation have incorporated versions of the conversational maxims as regulative norms for the activity of argumentation, others have taken adherence to the maxims to be partly constitutive of making a genuine speech act, and thereby making a genuine move in an argumentative exchange. What is important is that together they amount to the regulation that one should not assert anything that one

⁴ As Zagzebski (1999, p. 93) writes, “The idea that the knowing state is a species of the belief state undergrids the almost universal practice in epistemology of defining knowledge as true belief plus something else.”

does not take oneself to know. While maxim 1 is weaker than “say only what you believe to be true,” the combined force of the maxims of Quality seems to be that one should assert only what one believes one has adequate evidence for the truth of – in other words, assert only what one takes oneself to know. Thus there is an important sense in which the rationally-held true belief picture of knowledge factors into the very texture of the process of argumentation as a regulated series of speech acts.

On the other hand, this account seems too restrictive to explain the actual role of knowledge in the process of argumentation and inquiry. For example, Godden (forthcoming) has shown that the true-belief-plus account of knowledge fails to explain the argumentative goodness of patterns of argument which seek to justify a claim whose acceptability is at issue by an appeal to common knowledge. More problematic, though is the alethic condition which is shared by the true-belief-plus account and the assumptions-of-rationality account above. (The veridicality assumption that only truths can be known is common to both accounts.) Intuitively this assumption makes good sense, for it seems queer to say that we can know falsehoods. Further, maintaining the truth condition for knowledge preserves an important distinction between knowledge and justified belief.

Problematically though, maintaining the truth condition seems to significantly impede the role that knowledge can play in the process of argumentation. For example, consider the reason-giving role that knowledge plays in schemes like argument from expert opinion. If the opinion of an expert is only acceptable when her opinion can independently be shown to be true, then there is no need to accept the opinion on the basis of the expert’s authority. Rather, one should accept the opinion on whatever grounds one used to independently verify its truth. Similarly with items of common knowledge and popular opinion, matters of testimony and other cases where appeal is made to an agent’s being in a position to know

Further, given that the agents in argumentation are epistemically, cognitively and rationally finite and fallible, it is not reasonable to expect every claim to knowledge made at the beginning of the process of argumentation be manifestly or demonstrably true prior to inquiry. If this were the case, then one is forced into a kind of skepticism where the process of inquiry itself would often never begin, while in other cases it would be redundant. Instead, disputed cases might properly be denied and become the subject of further inquiry. Undisputed cases, on the other hand, should be admitted provisionally subject to inquiry and retraction in appropriate circumstances.

KNOWLEDGE: A PRAGMATIC APPROACH

Against the idealized conceptions of knowledge just outlined, we propose that argumentation theorists adopt a perspective which might be called, to use Hans Vaihinger’s apt phrase, “epistemological utilitarianism” (Rescher, 2000, p. 8).⁵ We feel that such a pragmatic approach to knowledge is especially fitting given that the role of knowledge in argumentation incorporates the dual features of antisepticism and fallibilism which Putnam describes as “perhaps *the* basic insight in American Pragmatism” (Pragmatics, 21).

⁵ There Rescher writes: “Hans Vaihinger characterized pragmatism as ‘epistemological utilitarianism’ (erkenntnistheoretischer Utilitarismus), *Philosophie des Als ob* (Leipzig: F. Meiner, 1924; original ed. 1911).

Walton (2005) has proposed a pragmatic conception of knowledge which is built upon two common-sense platitudes that capture our everyday epistemic situation in the world: (1) a knowledge-base can be incomplete, and (2) a knowledge-base can be fallible. A knowledge-base can be incomplete in the sense that there can be many true claims which are not included in the knowledge base. That is, the “closed-world” assumption is typically not met in everyday situations. Further, “[o]n this [pragmatic] model, knowledge is defeasible, meaning that a proposition now known may later be refuted (defeated as knowledge)” (Walton 2005, pp. 59-60), thus allowing for retraction in the process of inquiry, investigation, and discovery. Epistemic agents have to operate in conditions of uncertainty, incomplete knowledge, and often even contradictory information.

It is with this type of situation in mind that Walton (2005, pp. 63-64) proposes the pragmatic model of rationality and its attendant account of knowledge. According to the pragmatic model of epistemic rationality, a group of interacting agents is collecting data as part of a search for the truth of a matter they are investigating. As they go along during the search process, they verify or falsify hypotheses by testing them against the data they have collected so far, at the same time as they are engaged in the process of collecting new data. As the search for knowledge continues, some hypotheses become better and better supported by the evidence, but the same time, some of the hypotheses previously accepted have to be given up, because they are falsified by the new data that are streaming in. Depending on the type of investigation, for example it might be a scientific investigation over a legal inquiry, there will be an established proof standard that enables the investigation to determine whether a proposition can be accepted as proved or not.

This pragmatic model of epistemic rationality is dynamic, meaning that whether a proposition is accepted as knowledge at any given point depends on the standard of proof and the data that has been collected to that point. A proposition rightly said to be known to be true at a given point in the investigation could later on turn out to be proved to be false. Or at a particular point, the set of data collected at that point could justify two hypotheses, one of which is not consistent with the other. In this model, a particular proposition might rightly be classified as knowledge at one point in the investigation, whereas at a later point, the same proposition might turn out to be no longer classified as knowledge. In general, whether the proposition is rightly said to be knowledge or not depends on its rational acceptance, given the evidence then for it, as balanced against the evidence then against it, at that point in the investigation. In this pragmatic model, knowledge is not defined as justified true belief, or even as any kind of belief. It is based on the evidence collected at a given point in the investigation, on the kinds of arguments that can properly be used to justify a claim in that type of investigation, and on the standard of proof set for knowledge in that type of investigation. On this model, the strict barrier between discovery and verification of knowledge characteristic of older ways of thinking in analytical philosophy is no longer absolute.

CONCLUSION: DEFINING KNOWLEDGE FOR ARGUMENTATION THEORY

As the theory of argumentation and the discipline of informal logic developed, several challenges to standard notions of knowledge emerged. Perhaps best known among these

is the rejection of deductive validity as a universal standard of evidence or justification required to make a claim to knowledge at the conclusion of the argumentative process.

Accompanying this rejection of deductive validity as the only suitable link between premises and conclusions in arguments was a rejection of certainty as a requirement of knowledge. For example, Langsdorf (1998, p. 495) observed that Toulmin (1995, p. x) identified certainty, along with representation and individualism,⁶ as three underlying assumptions characteristic of a Cartesian research program, a program for which Toulmin sought to provide an alternative.

For many theorists, this abandonment of certainty meant more than saying that people's confidence in claims which they can justifiably be said to know can be less than 100% – even though they are, in fact, right. Rather, abandoning certainty as the only standard of knowledge involves the more controversial concession that people may justifiably claim to know something, even though they may end up being wrong. Perelman (1989) for instance, described his conception of knowledge as follows:

I shall grant the status of knowledge to a tested opinion, to an opinion, that is, which has survived all we have a certain confidence, though no certainty, that it will resist all such future attacks. (Perelman, 1989)

Importantly, taking such a position need not involve saying obviously false or dubious claims can be known, or that there is no difference between having knowledge and having a rationally justified belief. Agents can rationally hold a belief which should not be counted as knowledge when their justification for that belief seems good from a subjective perspective, but objectively the belief cannot be rationally justified or conflicts with what is demonstrably true or most probable (or plausible). Knowledge is something which not only has withstood the scrutiny of the past, but will withstand all future scrutiny as well.

An important feature of these pressures from within argumentation was to tie the concept of knowledge to the process by which knowledge is generated, discovered and certified. As Kuhn (1991, p. 200) wrote:

Only if knowledge is seen as the product of a continuing process of examination, comparison, evaluation, and judgment of different, sometimes competing, explanations and perspectives does argument become the foundation upon which knowing rests. Knowledge is never complete or finished, but rather remains open to further argument.

By linking knowledge to the process of inquiry, and by recognizing the role that knowledge plays in that very process, we come to conceive of knowledge as dynamic and open to further scrutiny.

Knowledge in Argumentation: Initial Conditions

Having set forth some problems accompanying typical accounts of knowledge in epistemology and modal epistemic logic, we proceed to postulate some conditions that any conception of knowledge suitable for argumentation theory will have to have. As initial conditions, then, we propose the following:

⁶ Roughly, Toulmin describes these assumptions as follows: (i) certainty: knowledge is structured as 'demonstrably certain' systems; (ii) representation: knowledge is an inner state of the mind; and (iii) individualism: knowledge is a 'personal and individual accomplishment' (Toulmin 1995, p. x)

1. Knowledge bases can be incomplete and even inconsistent. These conditions take account of the fact that rational agents are epistemically and cognitively finite.
2. Knowledge is, for the most part, defeasible. This comes not only from the idea that arguers are finite rational agents who are fallible, but also from the idea that most of the reasoning on which rationally-held knowledge are based is defeasible rather than deductively valid. As such,
 - a. Certainty and manifest or demonstrable truth is often an inappropriate standard for knowledge.
 - b. Knowledge claims must be retractable under the right sorts of circumstances.
3. Knowledge is the result of a process of inquiry. This in turn suggests a dialectical conception of knowledge, whereby existing knowledge can continue to be tested, and is subject to retraction. Knowledge must not only be undefeated at present, but it must be able to answer new objections, and to survive testing and critical scrutiny in new circumstances.
4. Whether or not something is rightly classified as knowledge or not depends on the standard of proof set for the investigation, which in turn depends on the type of investigation that is supposed to be underway. Such matters are sometimes described by the use of the expression 'burden of proof'.

Defining Knowledge for Purposes of Argumentation Theory

With these initial conditions in mind, we proceed to propose an alternative definition of knowledge for argumentation theory. Instead of defining knowledge as rationally-held true belief, it is better defined for purposes of argumentation theory as justified acceptance of a proposition based on evidence and supported by rational argumentation to a specified standard of proof. The specified standard has to be reasonably high to distinguish between propositions that can rightly be said to be knowledge versus propositions that can be reasonably accepted as based on evidence, but where the evidence is not so strong that we would call the proposition knowledge. The standard of proof is specified by the context.

The paradigm instance of knowledge is scientific knowledge. A proposition may rightly be said to be an item of scientific knowledge if it is supported by rational argumentation of the kind used in a particular scientific discipline to the standard of proof appropriate for what counts as knowledge and that does not. This definition of knowledge would be classified as a pragmatic definition in that it varies with the context, and in particular, is defined in relation to the standards and methods accepted in a scientific field, and now the standards and methods are applied to yield evidence in that field. Another important pragmatic implication of this definition of knowledge is that it puts much more of an emphasis on the notion of evidence and one finds in traditional theories of knowledge in philosophy. Evidence is based on appearances, or things that appear to

be true, that fit in with other appearances in a consistent manner, and that can be tested, by experimentation or other means.

We can have lots of evidence in favor of proposition and no evidence against it, but later on, has more evidence comes in we might find that this proposition is false. This characteristic is sometimes called defeasibility or verifiability of a hypothesis. It is important for scientific knowledge that it be represented as open to defeat this new evidence comes in. This defeasibility requirement, however, may be inconsistent with the traditional definition of knowledge as justified true belief. For if a proposition really is true, presumably it can turn of the later to be false. This requirement is consistent with the notion that sometimes propositions are accepted as scientific knowledge that later on turn out to be disqualified or rejected as knowledge, once a new experimental findings come in, or a new theory comes in that offers a better explanation than the previous one.

A problem for the theory concerns statements made in everyday conversational argumentation where somebody says 'I know this proposition is true' as opposed to saying 'I think it is true'. When I say I know that this proposition is true, often it is taken to mean that I'm very confident that it is true. This is not what is really meant by knowledge however. I can be very confident that something is true even though the evidence that I have does not really support my belief that it is true to the standard of proof that should be required to license such an assertion. Thus in the case of the term 'knowledge', and ordinary language approach can only take us so far, and can even be misleading. The reason, in this instance, is that logical positivism is pervasive in generally accepted ways of speaking about things. It's not just the philosophers who have adopted this viewpoint.

Thus when I say that I know something, or say that it is knowledge, it should mean that I have strong enough evidence to support and to meet a standard of proof justifying my including it under the category of knowledge. But in ordinary discourse such assertions are often ambiguous. I could mean that I'm claiming that this proposition is scientific knowledge, or I could mean merely that I am very confident about its being true, independently of whether I have good evidence for claiming that I know that it's true or that it can be taken as knowledge. Another tricky aspect here is the shift between the abstract noun knowledge and the verb 'know'.

So to say that something is knowledge or that some person or group knows it, it is important that the proposition claimed as knowledge be based on evidence of a kind that reaches a level where the proposition passes beyond the level of being accepted as true because it is based on evidence. Only when it is proved by a certain kind of evidence, that is sufficient for the discipline, or more generally the context in which the proposition was claimed, can something be properly said to be knowledge.

Another question is how you can prove that something is knowledge. There are two different routes. If you're a scientist in a particular discipline you may claim direct access to the evidence, especially if you are a specialist who has done the research work that is taken to prove that proposition and question. Such a case could be called one of direct knowledge. But this kind of case is relatively rare. Most of us base our opinions on what his knowledge or what is the on what the experts say, very often the scientific experts in the relevant domain. Even colleagues in the field will base what they take knowledge to be on this kind of criterion.

Implications

In this paper we have argued for a picture of knowledge which we feel is better suited to the actual role which knowledge plays in argument, without advocating any particular approach to the study of argumentation. Yet, we suggest that our proposals concerning the conception of knowledge have some implications for the relationship between the various approaches to argumentation theory.

For some time there has existed a tension between dialectical approaches to argumentation and epistemological ones. Epistemological approaches have distinguished themselves from so-called consensus-based approaches on the grounds that epistemological approaches are oriented towards external standards such as truth while consensus approaches forsake these (Feldman 2005, pp. 282-283; Lumer 2005a, p. 192). We have suggested that the product called ‘knowledge,’ and the criteria used to judge something as knowledge be linked to the process which generates knowledge. Yet, this is not to forsake external standards, or to deny that truth is (except in special cases) agent-independent. Truth is not produced by argumentation; but knowledge of the truth can be. The point is that while truth is an objective criterion for knowledge and rational acceptability, truth is not an especially useful criterion in cases where it is not manifest, apprehended, or demonstrable – in short unknown. As such, in order that external standards be usefully employed as criteria for assessment, their method of employment must be specified as well (Huss, 2005). Setting a Cartesian standard of accepting something as knowledge only if it can be proved beyond all possibility of doubt is rejected as unrealistic. Thinking of knowledge in a positivistic way as a body of true propositions floating out there in a remote space where human agents cannot see it, except very dimly, is too idealized to be suitable for argumentation.

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