

ISSA Proceedings 2006 - Understanding, Arguments, And Explanations: Cognitive Transformations And The Limits Of Argumentation

✖ 1. Introduction: epistemic and cognitive transformations

Arguments serve many functions. Some of their functions are ethical, social, personal and political. A lawyer arguing on behalf of her client, two conflicting parties agreeing to mediation, people who feel they have been wronged seeking acknowledgement, or someone simply venting a bit of frustration are all using argumentation for some of these purposes.

The most philosophically salient of argumentation's functions, however, are, broadly speaking, epistemological. Arguments persuade or convince an audience; they justify actions and decisions; they demonstrate truths, expose and refute errors, and test hypotheses; they critically explore; and they help us deliberate. The common element in all these cases is that successful argumentation brings about some sort of *transformation* in how and what we think. These transformations are all epistemic or doxastic (Pinto 2003, pp. 6f.). At the individual level, arguments may try to raise doubts, justify belief, or even yield knowledge. Arguments can convert nagging suspicions into confident belief as easily as they can transform smug belief into chronic doubt. It can crystallize indecisiveness into a decision, and, in the paradigm case, create knowledge from ignorance. Similar transformations occur at the interpersonal level: argumentation settles disputes, re-opens questions, determines the collective will, and, in the paradigm case for dialectics, forges consensus out of dissensus.

Explanations like arguments, also have many functions. And like arguments, their most philosophically important role is in bringing about cognitive transformations in a rational way. Paradigmatically, the perlocutionary act that explanations hope to perform is replacing incomprehension or puzzlement with *understanding*, rather than replacing ignorance or unreflective beliefs with justified beliefs and knowledge (Achinstein 1983, p. 16).

Not all cognitive transformations are epistemic. Seeing the duck-rabbit now as a duck, now as a rabbit, for example, does not seem to involve *epistémé*. Nor does coming to regard someone as a friend rather than a rival, or the aesthetic judgment involved in taking an object as an object of art, or learning how to tell a work by Beethoven from one by Mozart. Coming to understand something falls into this category.

Understanding is a cognitive achievement of the first rank, often exceeding knowledge. Understanding generally includes some knowledge: we are said to understand an event, for example, when we know that it occurred and we also know the reasons for or causes of its occurrence. This is the kind of understanding that is on display when we know how to answer the question why the event in question occurred, not just whether it occurred. But knowledge by itself is not always sufficient to produce understanding. There are senses of understanding that involve more: the change from incomprehension to understanding something may entail changes in attitudes, perspectives, associations, and abilities that are not represent-able in purely propositional terms (cf. Wittgenstein 1953, §152-4; Hacker 1986, p. 248). And since understanding often goes beyond knowledge, it probably ought to have a higher profile in our epistemic projects and in the discourse of epistemology. However, since the epistemological tradition in large part arose as a response to the problem of skepticism, and has been periodically revitalized over the centuries in response to new skeptical challenges, it might be better to describe the transformations that explanations bring about as *cognitive* in a very broad sense than narrowly *epistemic*. But this just helps locate explanations in conceptual space vis à vis arguments rather than clearly defines or distinguishes them.

There are many important and promising areas of research for argumentation theorists arising from the juxtaposition of argumentation and explanation. Moving from arguments to explanations, we can begin by noting that explanations may be logically and syntactically indistinguishable from arguments, in order to ask whether the fallacies that occur in argumentation also infect explanations? Is there a distinctive class of *explanatory fallacies* to identify and worry about? Second, why is the dominant metaphor for arguments – argument is war – so inapplicable to explanations? That is, how can explanations share so much with arguments, but lack the central – some say *defining* – *adversarial* component? When it comes to explanations, the entire ‘dialectical tier’ of questions, objections, disagreements, and challenges are all possible. Even so, disagreement

- the initial and, some say, fundamental dialectical factor - does not have to be present to initiate explanation.

Third, how does that dialectical difference manifest itself in the subsequent *stages of reasoning* in explanations? Since alternative explanations need not be *competing* explanations, how does the closure reached in successful explanation relate to the resolution reached in successful critical discussion?

Moving in the other direction, from explanations back to arguments, we are presented with another set of questions:

In the absence of the war-metaphor, what *metaphors* and *models* do apply to explanations? Can they be retro-fitted to arguments with good effect? Can there be a counterpart in argumentation to the fact that in at least some contexts successful explanations can co-exist peacefully with the possibility of equally successful *alternative explanations*? Should we broaden our argumentative practice to accommodate other than *win/lose, zero sum* outcomes? And perhaps most telling of all, why should arguments have to settle for producing consensus, justified belief, or knowledge rather than *understanding* or perhaps even *wisdom*? What changes in strategies or styles or structures would be best for reasoning in the understanding-directed and wisdom-directed contexts of explanations, rather than the belief-, knowledge-, or rational consensus-directed contexts of argumentation?

In the discussion that follows, I will bring explanations and arguments□ similarities into clearer focus, and their differences into greater contrast, in order to focus on one particular aspect within the area of understanding-directed argumentation. I will try both to explain and to argue for the thesis that when arguments and explanations are viewed as neighbors in the business of cognitive transformations, some of the *limits* to argumentation coincide with its *boundary* with explanation. As a test case, one notorious example of intractable arguments - religious differences - will be connected with an extreme kind of cognitive transformation - full-scale conversions.

2. *Explanations and arguments are alike*

Syntactically, an explanation may look exactly like an argument. Consider the sentence, 'We can know that God exists because we can see the order in Creation'.**[i]** It easily fits into an argument with a non-believer, but a different utterance of the exact same sentence could just as easily be used in an *explanation* of the natural component of revealed religions in a seminary seminar.

The key word '*because*' indicates reasons in both cases, but it does so without discriminating among logical premises, physical causes, and the variety of forms the *explanans* can take.

The complicated inferential structures found in arguments can be replicated in explanations, with the ambiguity of reasons – the difference between a proof's premises and an explanation's *explanans* – systematically preserved throughout. The nature of the inferential relations changes with the kind of argumentation present. In arguments, the inferential relations can be deductive, inductive, possibly abductive, or even just probabilistic. The latter three are sometimes regarded as the stand-ins we have to settle for when the ideal of deductively valid inferences is not available. The parallel, and equally prevalent, attitude regarding explanations was given full expression in Hempel's 'covering law model' for explanation: in the best explanations, the *explanandum* is *derived* – and in the ideal case, derived *deductively* – from the governing laws and initial conditions that constitute the *explanans*. One philosopher goes so far as to proclaim, 'an explanation is a proof' (Kim 2005, p. 135). However, because there are contexts in which teleological explanations are *completely* acceptable – not to mention contexts appropriate for psychological, historical, and critical explanations – the deductive model has to be taken as just one among many, and not even the first among equals, when it comes to kinds of explanation.

The similarities run deeper than the shared locutions of the surface language. Explanation and argumentation also share rhetorical strategies and dialectical moves. In particular, there are *audience-sensitive* performance imperatives and principles of *rationality* in force. Obfuscation and jargon are as bad in explanation as they are in argumentation; insincerity and suppressed evidence are transgressions against the rules of rational presentation whether that presentation is in the service of rational persuasion or rational explanation. In both cases, assumptions can be called into question, inferences can be challenged, and points in need of clarification can be raised, all by way of objecting.

3. *Explanations and arguments differ*

Still, explanations are not arguments. There are both dialectical and rhetorical differences between them that are by-products of their different goals, even though both seem to have a kind of rational persuasion as the goal. To say that someone has been satisfied by *an* explanation, E, may mean that she has accepted E as the explanation of the target, T. But it could also mean that she has accepted

E as an explanation of T. In the former case, appropriate to fields like physics, the argumentation needs to both establish E and exclude alternatives. In the latter case, more appropriate to fields like history in which multiple explanations are possible and events are subject to explanations as varied as their descriptions, only the first task is needed. Teleological and psychological explanations of my actions do not exclude physical and physiological explanations of the same behavior. Economic explanations of the causes of war do not exclude ideological ones. Something may be successfully explained in many ways without any of them being the explanation. Literary critics know this, even if they sometimes forget that not all explanations are literary interpretations.

Because of this, we explain differently than we argue. When the focus of the task is making the conclusion as *attractive* as possible, there is less pressure to make the premises and inferences as *forceful* as possible. It is the difference between inviting someone to accept a conclusion and forcing them to accept it.

Argumentation may well be an effective means to the end of rational persuasion, but it is not the only one, if by 'rational persuasion' we have in mind any cognitive transformation that ends in justified belief. After all, simply informing someone of something can produce the same result, as can the whole range of pedagogical techniques used by effective teachers. If teachers do not typically think of themselves as arguing when they teach, that is because students are typically receptive to what they have to say rather than resistant.

One form of successful teaching, like successful rhetorical argumentation, ends with the achievement of rational belief. The difference is to be found in the starting point: proponents in dialectical argumentation typically do not have receptive opponents. We can travel very different routes to reach the same end states, so epistemic and other cognitive transformations cannot be defined simply by their starting points and endpoints.

The dialectical tier also plays itself out differently in explanations and arguments. Because explanations do not have to be initiated by disagreement, the interlocutors need not take the roles of *opponents* in discourse. Still, an explanation remains incomplete so long as there are outstanding objections, requests for clarification, or other unanswered questions. Someone might ask, for example, how the Marxist explanation of the history of the union movement in the American South accommodates the early civil rights movement, and reasonably expect some answer. The failure of the explainer to provide an adequate answer might count as a strike against the explanation. Alternatively, it might be taken

instead as merely incompleteness, rather than a failure, in the explanation. To borrow some terminology from Thomas Kuhn, the unanswered question starts out as just a *puzzle*, but if it develops an attitude, it becomes an *anomaly*. (Kuhn 1970, p. 79f.) In either case, there are parallels in argument.

The common assumption is that explanations begin with their own assumption, namely, that the *explanandum* is true, and that this is the crucial difference. Their job is to answer the question how it can be true. Arguments begin with the prior question, *Is it true?* Thus, a successfully concluded argument may still leave room – and need – for explanation because knowing that something is the case does not necessarily include understanding how or why it is so. Understanding needs some kind of ‘narrative unity’. Propositions knit together by logical connections and inferential structures exhibit the strongest kind of unity, but it is not the only kind.

4. *The difference that the difference makes*

What difference do the different assumptions and the possibility of different kinds of explanatory narratives make? How does all this play out for explanatory strategies and explanatory models?

There are several different senses and uses for the word ‘*understand*’. The particular sense I am interested in is what one author has called the ‘comprehension’ sense (Franklin 1983, p. 308). It manifests itself in the ability to explain, i.e., to fit the explanandum into a coherent narrative, and to maintain a kind of ‘empathy’ or cognitive comfort level with that narrative. (von Wright 1971, p. 6). Finally, that narrative must have some grounding in fact, even if only a very tenuous one (more on this later). Again, achieving this kind of understanding, perhaps even more than acquiring knowledge, ought to be central to our individual epistemic projects and to our collective epistemological discourse.

One kind of integrated narrative, of course, is logical derivation, the heart of the deductive-nomological model of scientific explanation (Hempel and Oppenheim 1948). Offering a derivation of proposition *p* from specific initial conditions together with general laws is indeed one way to answer the question *Why p?* But *why*-questions are notoriously ambiguous, so there may be other ways to answer it. Deductions stand to explanations about the same way they stand to arguments: they are a very important part, but they are still only a part. Extra-logical pragmatic considerations are too central to gloss over for strict deductivist accounts to suffice (Kim 2005, p. 107 argues the deductivist position).

Argumentation theory would seem to be the natural place to look for the conceptual resources for exploring the dialectical, rhetorical, and logical dimensions to explanation, but the comprehension sense of understanding poses special difficulties. The templates provided by argumentation theory are designed to accommodate input in propositional form, but comprehension-understanding is primarily 'objectual' rather than 'propositional' (Kvanvig 2003, p. 191). The goal is to understand what it is to understand *p*, not what it is to understand *that-p*. This kind of understanding is surely a significant cognitive achievement worthy of philosophical attention, but it is not a propositional attitude suited for logical investigation. We may, for example, understand *that* things are the way they are without understanding those things at all. Think about the comment by a chess player who, staring at the board, sighs at long last and says, 'I understand *that* you moved your knight to b3, but for the life of me I don't understand that move at all' (Franklin 1983, p. 310).

The objects of understanding can be as varied as machines and historical events, individual words, propositional signs and entire languages, physical phenomena and scientific theories, or human actions and humans themselves. Objectual understanding comes in degrees. We can intelligibly ask of someone who claims to understand quantum theory or Sanskrit *how well they* understand it. Objectual knowledge, but not propositional knowing-that, also comes in degrees. We can ask both *Do you know Smedley?* and *How well do you know Mr. Smedley?* Notoriously, the targets for our understanding include stories, poems, and texts of various kinds to be understood in various ways.

In the case of a machine, even the most complicated rube goldberg of a contraption, *knowledge* of the machine generally suffices for understanding, and that knowledge can be reduced to knowledge-*that*. There is nothing more than what can be expressed propositionally and captured by a detailed description. Human actions present a different case. We can observe someone's actions without knowing the reasons for it. In the extreme case – say, the story presented in the film *The Truman Show* in which the character's entire life was on exhibit – an observer could have virtually complete knowledge of a person's life without any real understanding of it. What is missing is not more facts or more knowledge. The picture is complete but it doesn't hang together. In this sense, understanding is not a matter of adding a piece or pieces of knowledge, but of how to put the pieces together and what to do with them.

If we were still under the spell of a picture theory of meaning and its associated

conceptions of language, truth, and logic, there would be something elusive or mysterious about this sense of understanding. It is what prompted Ludwig Wittgenstein to say that the sense of the world is unsayable and must lie outside the world (Wittgenstein 1961, 6.41). But it is also what prompted later Wittgenstein to emphasize that understanding is more of an ability than a state. It is the ability to carry on, to explain, to continue the conversation, or to cope with the phenomena in other ways (Wittgenstein 1953, §199). The common source is that objectual, comprehension-understanding is closely connected with know-how (Ryle 1949, pp. 25ff.). I would go so far as to venture the claim that understanding is actually *more* closely connected with know-how than knowledge-that, and that this is what really accounts for the differences between argumentation and explanation.

First, let me explain the claim that know-how is more important for understanding than knowledge-that. It is generally assumed that truth is as important an ingredient for understanding as it is for knowledge because some factual knowledge is necessary as the grounding for genuine understanding. The reason behind the claim is that any understanding that rests on false assumptions or flawed data should not count as understanding, no more than Gettier examples should count as examples of genuine knowledge. Just as we no longer attribute knowledge of the arrangement of the planets to Ptolemaic astronomers, neither do we say that they really understood the retrograde motion of the planets against the background of the fixed stars, no matter how accurately their models preserved the phenomena. Yes, they could *explain* retrograde motion by reference to deferents, epicycles, and eccentricities, but if their explanations are no longer accepted as correct explanations, the resulting understanding is not real understanding. This leads one author to say that understanding requires some 'facticity in the background' (Kvanvig 2003, p. 191).

The insight is a good one, but the moral of the story has been wrongly extracted. First, it summarily rules out the possibility of understanding in any areas in which there are no truths, such as, at least according to some, ethics, aesthetics, and interpretation. Global metaphysical anti-realism may indeed bring some sort of general skepticism in its wake, but what we might call 'understanding-skepticism' does not have to be part of it. Second, since understanding concerns the patterns, arrangements, and organization that narratives reveal, there is a type problem. What if the discovered pattern were extracted from all false data, albeit data that

were systematically wrong. The validity of the pattern remains, but without any actual grounding. To take a concrete example, suppose a lay historian has gained a pretty good understanding of, say, the Holocaust. That is, she has cognitively come to grips with it and has a coherent, compelling narrative to tell about the 6 million Jews who were systematically exterminated, with policies and institutions dating from the earliest days of Hitler's power. After all, she likes to point out, Dachau was first opened less than one month after Hitler became chancellor in 1933, and its gas chambers for mass executions were built in late 1939 to expedite the liquidation of the Jews to free up resources to fight the Russians. But a closer inspection of the history reveals that many of the data points incorporated into the construction of that narrative are only approximately true – which is to say, they are actually false. Dachau was first put into operation in March of 1933, slightly *more* than a month after Hitler became Chancellor. The gas chambers were actually built in 1940, and perhaps as a response to the influx of Russian prisoners.**[ii]** And suppose it was 5.9 million or 6.1 million Jews that were killed, not 6 million. The individual falsity of each of those claims nullifies its status as an item of knowledge, but I do not think that even their joint falsity nullifies the entire fabric of understanding.

When understanding is understood as a different *kind* of cognitive achievement than knowledge, then Robert Nozick's curious claim that increased understanding can be derived even from explanations known to be false finally begins to make more sense (Nozick 1981, p. 11). Understanding does not require absolute truth. Therefore, it does not require knowledge. Approximate truths and justified belief can be good enough.

But understanding does require real know-how of some sort, if only because 'justified belief-how', to coin a phrase, is pretty much all there is to know-how.

5. *What we can learn about argumentation from explanation?*

It is a commonplace but still curious phenomenon that when one of the participants in an argument is successfully persuaded, it might happen only well *after* the arguing is over. Perhaps arguers need time to absorb and process the reasons they have been given before they can fully and finally accept them. Arguers are not, in general, especially receptive to the antitheses to their own theses. Or maybe it is simply that arguers generally do not want to lose face by admitting defeat. After all, arguers are commonly thought of as being *opponents*. Whatever the explanation – and I suspect that both of these explanations apply in

some measure to many cases – the delayed effect is less pronounced in explanations. And this difference needs an explanation.

The cognitive state that an explanation hopes to bring about is comprehension-understanding, and that kind of understanding is not simply a matter of new beliefs. Therefore, if argumentation were simply a matter of inculcating new beliefs, successful argumentation could not produce understanding. Information, together with recognizably cogent reasons for its acceptance, is not enough. Nor is understanding wholly a matter of pattern recognition in the available data, because not all patterns are relevant to understanding and not all understanding is in terms of discovered patterns (unless, of course, created narratives are counted as discovered patterns).

So far, this just identifies what it is that arguments archetypically do, how they do it, and why the result falls short of understanding. To connect this to the lag-time in conclusion-acceptance, we need to look at what understanding is rather than what argument *does not do*. As noted, there is a practical component to understanding, some know-how, that is not just a matter of knowing-that. Understanding is more intertwined with abilities than ordinary beliefs are. And because know-how is such a critical part of understanding, successful explanation has to include a certain amount of *training*. Argumentation does not.

Why can't we think of arguments that way? We can, of course, but we don't. The biggest conceptual roadblock is the established dominance of the war-metaphor for arguments. The emphasis on opposition, with its winners and losers, is at odds with an instructional project that is most effective when the participants are both willing and co-operative. Explanations do not have to force things. Even when successful, they do not actually *cause* understanding the way that arguments can effectively *cause* belief. Rather, they serve as conditions for understanding by laying the groundwork. They prepare the way without forcing the way. In oppositional argumentation, resistance is assumed. That is not the case in explanation. Anyone who chooses to resist understanding will almost certainly be able to do so! Willful misunderstanding is a lot easier than willful ignorance. More often than not, what passes for willful ignorance is primarily a matter of willful deafness to the proffered reasons rather than the actual self-deception that is required when faced with compelling reasons. There really is something, well, *compelling* about cogent arguments.

The critical-communicative task is very different when the interlocutor is

receptive and co-operative rather than resistant and adversarial. Explanations do not have to be compelling in the same way. The illocutionary act of explaining – of *offering* an explanation – is a matter of enabling the audience to be able to appreciate the attractiveness of the explanans as a companion to already accepted explanandum. Explanations that aim at comprehension-understanding help prepare the audience to look at things – including their own belief in the explanandum – in a certain way. That need not involve inculcating new beliefs at all.

Arguments can be thought of as preparing the audience for belief instead of making them believe. When argumentation is thought of that way, the rhetorical aspect of argumentation moves to the fore: instead of *arguing* against an opponent, it is arguing *for* a thesis and *on behalf of* that thesis. It becomes a matter of enabling the audience to appreciate the attractiveness of that conclusion.

One beneficial consequence of thinking of arguments this way is that it makes sense of the role of literature and the effectiveness of exemplars in ethics. Narratives can, of course, be arguments, at least insofar as they can be read as arguments, and now we have a partial explanation of the temptation to do so. What literature does, and does so very well, is help us see the world in a new way. That is, stories can be the occasions for profound cognitive transformations. By and large, cognitive transformations are the business of argumentation, but the transformations that fictions occasion are more like the transformations that explanations seek. Not surprisingly, then, when literature does provide us with a new lens for looking at things, and it is one that we cannot resist, it is because we are drawn to rather than pushed into it.

6. *Conversions... & the limits of argumentation*

The most dramatic of all cognitive transformations are full-scale conversions. Religious conversions are the most famous examples, so they are the most common models for thinking about conversions, but they are not the only ones. In the stereotypical case, the change is sudden, perhaps resulting from an epiphany or a mystical experience, but that is not essential. The loss of faith, no less than its acquisition, is a conversion, and conversion phenomena also occur in the social, political, ethical, and spheres. Like their near relatives, Kuhnian paradigm shifts, conversions can also be the result of the accumulated effects of gradual processes. A new view of the world does not need to come into focus all at once. There is a more salient point of comparison between paradigm shifts, in the

Kuhnian sense, and conversions: the relevant cognitive transformations cannot be brought about solely by appeals to logic and evidence (Kuhn 1970, chs. X, XII). Regardless of whatever the limits to purely logical deliberation may be, the scope of rational argumentation is broader. Even if we cannot conclusively demonstrate the rational necessity of a paradigm shift, we can still argue for it. We can argue for just about anything. What we cannot do, if Kuhn is to be believed, is *prove* the case. But I would guess that a good many of us already think that that limitation applies to almost everything arguable (Govier 1999, p.47).

Whole-scale conversions present a different case. Argumentation across different paradigms is manifestly possible. The claim of incommensurability is greatly exaggerated: even if the new paradigm cannot be understood in terms of the old one, there is no reason to suppose that an understanding of the prior paradigm must be lost by those who adopt its successor. Any 'incommensurability' between paradigms would have to be both oddly asymmetric (Weinberg 1998, p. 50), in addition to being 'argumentatively permeable'.

Arguing for a paradigm shift is possible, even if proving the case is not, but genuine conversions would be a different matter. Here, all argumentation and not just logical disputation narrowly conceived, seems almost entirely futile. In part, the difficulty in arguing either for conversions or with converts is a matter of scale. Entire world-views, rather than individual propositions, are at issue. Consider the scientific shift from an Aristotelian-Ptolemaic world-view to a Keplerian- Galilean-Newtonian model. The move away from a geocentric astronomy had to be accompanied by a change in physics: the notions of natural places and motions no longer fit. And that meant changing from a qualitative to a quantitative vocabulary, from thinking in terms of form and matter, essence and accident, and potency and act to the language of mass and momentum, space and time. etc. Then the methodology of science had to follow suit, with repercussions throughout natural sciences and beyond. The same phenomenon occurs in the political sphere: the transformation of a political conservative, in the vernacular of contemporary American politics, to a left-leaning liberal involves changing one's mind about the entire gamut of issues. By and large, one's views on abortion, gay rights, war in Iraq, a balanced budget amendment to the constitution, free trade agreements, and a host of other topics are inter-related at least this much: knowledge of someone's position on any one of these topics gives pretty good grounds for predicting that person's views on every other one. The whole web of belief is at stake!

Actually, a good deal more than the web of belief is at stake: also at stake is the web of attitudes, along with what we might call the webs of values, interests, interpretations, and, most of all, understanding. Conversions are more than just a simple matter of changing one's mind. For that part, argumentation is available. But for the rest of the cognitive transformation, explanation, cognitive training, and education are better strategies. Arguments coordinate the appropriate propositional attitudes with the array of propositions on the table (Pinto 2005, p. 1). They can license, sanction or mandate belief. And they do the same for disbelief, non-belief, strong commitment, provisional acceptance, and the rest of the attitudes. This one you should accept only tentatively; that one merits suspension of belief; and that other one can now be confidently eliminated from consideration. The non-propositional dimensions are another matter. But that does not mean they are non-cognitive or non-rational. What it does mean is that argumentation has its limits.

Conversions are, in Fogelin's term, 'deep disagreements' (Fogelin 1985). They pose challenges both to arguers and to argumentation theorists. The challenge to arguers is that the scale of conversions requires that argument (to resort to the war metaphor) has to be waged on so many fronts. Beliefs are revised all across the board. But that just makes argument difficult, not impossible. A more formidable obstacle confronts theorists: conversions are not just a matter of belief-changes; far more important are the changes in understanding, and the corollary changes in attitudes, values, and interpretations. And, as we have seen, that can be the kind of cognitive transformation that resists argumentation. We are still free, of course, to argue about religion without end, but now we know why we should not count on much success in that endeavor.

NOTES

[i] This line of reasoning encapsulates an influential passage Romans 1: 18-20 ('For all that may be known of God by men lies plain before their eyes'), a passage that was oft-cited in Early Medieval as justification for philosophical or natural theology.

[ii] For more detailed information and further references about the history of Dachau, see <http://www.holocaust-history.org/dachau-gas-chambers/>.

References

Achinstein, P. (1983) *The Nature of Explanation*. New York: Oxford University Press.

- Fogelin, Robert J. (1985) The Logic of Deep Disagreements. *Informal Logic*, 7, 1, 1-8.
- Franklin, R.L. (1983). On Understanding. *Philosophy and Phenomenological Research*, 43, 307-328.
- Govier, T. (1999). *The Philosophy of Argument*. Newport News, VA: Vale Press.
- Hacker, P.M.S. (1986). *Insight and Illusion, revised edition*. Oxford: Clarendon Press.
- Hempel, C. and P. Oppenheim (1948). Studies in the Logic of Explanation. *Philosophy of Science*, 5, 135-175.
- Kim, J. (2005). *Physicalism, or Something Near Enough*. Princeton, NJ: Princeton University Press.
- Kuhn, T. (1962, 1970). *The Structure of Scientific Revolutions*. Chicago: The University of Chicago Press.
- Kvanvig, J. (2003) *The Value of Knowledge and the Pursuit of Understanding*, Cambridge: Cambridge University Press.
- Nozick, R. (1981). *Philosophical Explanations*. Cambridge, MA: Harvard University Press
- Pinto, R.C. (2003) The Uses of Arguments in Communicative Contexts. In J.A. Blair, et al., *Informal Logic @ 25: Proceedings of the Windsor Conference*. CD-ROM. Windsor, ON: Ontario Society for the Study of Argumentation.
- Ryle, G. (1949). *The Concept of Mind*. London: Huntchinson's University Library.
- Von Wright, G.H. (1971). *Understanding and Explanation*. Ithaca, NY: Cornell University Press.
- Weinberg, S. (1998). The Revolution That Didn't Happen. *The New York Review of Books*, 8 October 1998.
- Wittgenstein, L. (1953). *Philosophical Investigations*. G.E.M. Amscombe, tr. New York: The MacMillan Company.
- Wittgenstein, L. (1961). *Tractatus Logico-Philosophicus*. D.F. Pears and B.F. McGuinness, trs. London: Routledge & Kegan Paul.