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Two Dogmas of Truthmaking

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§1   Two Dogmas
§2   Truth and Truthmaking

The literature on truthmaking is now almost a hundred years old. Throughout this period many friends of truthmaking have accepted two claims:

D1   There are truths which have no truthmakers
D2   Truth-makers are ontologically or metaphysically fundamental.

In some cases they have explicitly endorsed these claims, in other cases they are implicitly committed to them. The two claims are dogmas and, as is the way with dogmas, are by no means independent. In §2 I put forward an alternative to the two dogmas and argue that it is to be preferred. My alternative to D1 is a version of truth-maker maximalism,

TMM Every true truth-bearer has a truth-maker[1],

which is strengthened in two ways. First, I identify truth-bearers with propositions and truth-makers with obtaining states of affairs:

TMMPS   Every proposition that p which is true is made true by the obtaining state of affairs that p

Secondly, I take TMMPS to flow from the nature of truth and of propositions:

TME   In virtue of the essence of propositions and of truth, every proposition that p which is true is made true by the obtaining of the state of affairs that p

My alternative to D2 is the claim that the truth-makers isolated by (TME) are never ontologically fundamental. I must therefore explain what it is to be ontologically or metaphysically fundamental, provide some candidates for the role of what is ontologically fundamental, and elucidate the nature of truthmaking.

What is the relation between (D1) and (D2) ?

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[1] Truthmaker maximalism was endorsed by one of the first friends of truthmakers, the realist phenomenologist Alexander Pfänder (1921) – for details, see Mulligan 2006. It has recently been defended by the Australian realist David Armstrong (2004). Some of the points dealt with in what follows are dealt with more fully in Mulligan 2006a, 2006b.

Philosophers who reject truth-maker maximalism, who accept that there are truths without truth-makers, accept D1. Why ? One powerful motivation is that there are truths which, if they had truthmakers, would have ontologically baroque truthmakers. But, it is thought, truthmakers must be ontologically romanesque (D2).

The view that atomic facts (and perhaps sums thereof) are good candidates for the role of truthmakers but that non-atomic facts could not play this role is motivated by the conviction that negative or disjunctive facts, for example, cannot be part of the furniture of the world. The laughter that greeted Russell's early endorsement of negative facts was surely an expression of this conviction. Even atomic facts have been thought to be insufficiently fundamental to provide truthmakers. One alternative is the view that bearer-specific properties or tropes, particularly if these are identified with individual states and processes and taken to depend for their existence on their bearers, are to be preferred to atomic facts for the purposes of truthmaker theory. Another alternative has it that "sparse" properties, which "clothe" space-time points, provide us with the only truth-makers we need. Yet another, even sparser alternative says that, for example, the truth that Sam is sad is made true by sad Sam.

If truthmaker maximalism is false, that is, if (D1) is true, then truthmakers will not figure in a general account of truth, as opposed to accounts of some types of truth. They could only figure in such a general account if the truth of truth-bearers which do not have truthmakers could be shown to be completely determined by the truth of truth-bearers which do have truth-makers. No plausible account of this type seems to be forthcoming. It is therefore something of a mystery why friends of truthmaking who reject truthmaker maximalism regularly claim that a theory of truthmakers is part of a theory of truth, for example, part of a theory of truth as correspondence.

If it is true that the main motivation for endorsing (D1) is (D2), then we need to consider what it means to say that something is or is not more ontologically or metaphysically fundamental than something else; what it means to say that something is ontologically fundamental; and identify some plausible candidates for (a) the role of what is ontologically fundamental and (b) the role of what is ontologically non-fundamental. The candidates for the latter role that I shall consider are propositions and obtaining states of affairs or facts. As already noted, some have thought that atomic facts are ontologically basic. I shall give some reasons for thinking that no facts are ontologically basic. If there are facts and propositions, then it is very plausible to think that facts make propositions true. Once we see that the categories of facts and propositions are categories of what is ontologically secondary, then one of the main obstacles to accepting facts and propositions disappears.

Consider

(1)   Sam is sad
(2)   The proposition that Sam is sad is true
(3)   The state of affairs that Sam is sad obtains
(4)   If Sam is sad and the proposition that Sam is sad is true, then the proposition that Sam is sad is true because Sam is sad
(5)   If Sam is sad and the state of affairs that Sam is sad obtains, then the state of affairs that Sam is sad obtains because Sam is sad
(6)   If the proposition that Sam is sad is true and the state of affairs that Sam is sad obtains, then the proposition that Sam is sad is true because the state of affairs that Sam is sad obtains

The "because"s in (4) and (5) tell us that (1) is more fundamental than (2) and more fundamental than (3). One might accept both (4) and (5) because one thinks that propositions just are states of affairs. Then (6) would have to be rejected, for all instances of

(7)   p because p

are false. But there are good reasons for thinking that propositions are not just states of affairs. Propositions consist exclusively of concepts but every state of affairs contains at least one property. Properties, whether thought of as bearer-specific ("tropes") or as multiply-exemplifiable, are not concepts. We understand concepts, not properties. We perceive properties, not concepts. (What are often called "Russellian propositions", then, belong with what I here call "states of affairs").

It is sometimes claimed that propositions are more "fine-grained" than states of affairs because, for example, the proposition that Tully is bald and the proposition that Cicero is bald are distinct propositions, whereas the state of affairs that Tully is bald and the state of affairs that Cicero is bald are one and the same state of affairs. But to say that propositions are more fine-grained than states of affairs may suggest that they are made of the same materials. They are not.

Even if one accepts that propositions are not states of affairs, one might reject (5). Why ? Perhaps because one is impressed by the idea that (1) represents or is "about" the state of affairs that Sam is sad. Perhaps also because one thinks both this and that either the state of affairs that Sam is sad obtains or that the state of affairs that Sam is not sad obtains. And then by appealing to the principle that what something represents is more fundamental than representations of it one arrives at the conclusion that (5) is false. But this line of thought goes wrong at the very beginning. (1) is about Sam. Neither (1) nor any proper part of (1) represents a state of affairs. It *is* plausible to think that (3) may figure in a specification of the correctness condition for judgements or assertions that (1):

(8)   If x judges correctly that (1), then (3)
(9)   If x judges correctly that (1), then x judges correctly that (1) because (3)

But it does not follow that judgements or assertions that (1) involve any representation of states of affairs.

(1) is more fundamental than (2) and more fundamental than (3). (1) mentions only Sam. (2) mentions a proposition, (3) a state of affairs. The ontological commitment of (1) is more modest than the ontological commitments of (2) and of (3). What, then, are the best candidates for the role of what is ontologically fundamental ?

Space-time and substances, that is, enduring three-dimensional particulars, is one answer. Space-time, processes and states, is another answer. If there are both substances and processes and states, then processes and states are not ontologically fundamental but are closer to rock-bottom than anything except substances. These answers are acceptable to a concretist nominalist. An anti-nominalist might combine the claim that there are substances or processes with the claim that there are kinds, kinds of processes or kinds of substances. Substances or processes and kinds, he might claim, are ontologically fundamental.

If substances, processes, states and kinds are ontologically fundamental or ontologically more fundamental than facts, properties and relations, then (a) nothing on the list of what is fundamental is identical with anything on the list of what is not fundamental and (b) nothing on the first list is such that it can be constructed out of what is on the second list.

Let me consider only a representative handful of the many objections and apparent counter-examples to (a). Some friends of bearer-specific properties and relations identify these with processes. But processes have temporal parts, no properties have temporal parts. If there are two-legged processes such as collisions, these processes are not bearer-specific relations. First, because collisions have temporal parts, unlike relations. Secondly, because binary relations have order-properties, unlike two-legged processes. Many if not all properties and relations are determinates or determinables of other properties and relations. Processes and states are neither determinables nor determinates. Finally, if there are kinds and properties, no kind is a property. Properties are predicable, unlike kinds. Kinds have instances, for example, processes or substances. Properties are exemplified. Instantiation is always an internal relation, exemplification may be an external relation.

Many philosophers have thought that substances and processes can be constructed out of objects and properties. But if we are impressed by the arguments in favour of concretist nominalism, the thesis that everything other than space-time is wholly in time or wholly in space, we should resist this view. Concretist nominalism, of course, typically fails to distinguish between what is ontologically fundamental and what is not fundamental. But if we make this distinction then a plausible version of concretist nominalism is that everything that is ontologically fundamental is wholly in time or wholly in space and so not repeatable[2].

If kinds are to figure in a list of what is ontologically fundamental, then it has to be shown that kinds cannot be constructed out of objects and properties or facts. Armstrong (1997 67-8) hypothesizes that kinds supervene on facts (what he calls "states of affairs"), where these are taken to involve nothing but thin particulars, properties and relations. One problem with Armstrong's proposal is that whereas the claim that a relation supervenes on its terms and even the claim that properties, relations and facts supervene on properties, relations or facts are intelligible, it is by no means obvious what it means to say that a kind supervenes on facts. One may plausibly think that a substance-kind or a process-kind supervenes on a particular substance or process, that if the latter exist, so must the former[3]. But that is not quite the claim Armstrong has in mind. If a substance were just a fact, then it would follow that the kind to which the substance/fact belongs supervenes on the substance/fact. But on the concretist nominalist view of what is ontologically fundamental a substance is wholly spatial. It is therefore no fact, since the properties and relations making up facts are not wholly spatial.

I therefore hypothesize that the exemplification of essential properties is secondary with respect to the instantiation of kinds or types. That is to say, for example,

(10)   If Sam exemplifies the property of being a man and if Sam instantiates the kind Man, then he exemplifies the property because he instantiates the kind.

One reason for accepting (10) is the falsity of

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[2] For the view that universals are repeatable and yet exist wholly in space and time, see Johansson, forthcoming.
[3] Cf. Fine 1994-1995, p. 288.

(11)   If Sam instantiates the kind Man and Sam is a man, then Sam instantiates the kind Man because Sam is a man.

and the truth of

(12)   If Sam exemplifies the property of being a man and Sam is a man, then Sam exemplifies the property because he is a man

Even if it were possible to defuse all the objections to the claim that substances or processes are more basic than propositions, states of affairs, facts and their ilk, the claim remains vague in the absence of an account of the ways in which ontologically basic entities are connected with ontologically secondary entities. An answer to this question will take us to the heart of truthmaker theory, since such a theory has to say what it means to say that something *makes* something else true.

§2   Truth and Truthmaking

One of the more glaring gaps in discussions of truth-making is the lack of attempts to elucidate the very notion of "making"[4]. Such an elucidation should provide answers to at least the following questions.

Is the "make" in "make true" elliptic for "because" ? Does an account of truthmaking essentially involve an appeal to explanation or grounding ? If so, what particular "because" is involved ? Is truthmaking a relation ? If so, what sort of relation ? What is the connexion between the relation and explanation ? If truthmaking is a relation, what is the connexion between the relation and the functor of necessitation which is appealed to in order to "capture" the relation ?

No friend of truthmaking thinks that the "make" in "make true" is the causal "make" employed in, for example, "Sam made Erna cry". Yet analogues of all the questions just raised can, of course, be asked about the causal "make". There are good reason for thinking that there are causal relations between substances and processes as well as between processes and states. For example,

Caused (The explosion, Sam's heart attack).

There are also causal explanations,

Sam had a heart attack because the explosion took place

And there is perhaps a functor of causal necessitation. And so the question arises what the connections are between causal necessitation, the causal relation and causal explanations.

Friends of truthmaking often claim that truthmaking is "really", "at bottom", a relation, in particular, an internal relation. The truth of the matter, it seems to me, is that one type of truthmaking is a relation and another type is not a relation. More exactly, the

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[4] But cf. Johansson 2004.

truthmaking appealed to by one theory of truthmaking is no relation and the truthmaking appealed to by another type of theory is indeed a relation.

Consider

(13) If the proposition that Sam is sad is true and the state of affairs that Sam is sad obtains, then the obtaining state of affairs that Sam is sad makes the proposition that Sam is sad true.

I suggest that (13) is merely elliptic for

(14) If the proposition that Sam is sad is true and the state of affairs that Sam is sad obtains, then the proposition that Sam is sad is true because the state of affairs that Sam is sad obtains

In order to evaluate this suggestion it is necessary to say something about the type of "because" employed. The "because" in (14) is not any causal "because. How might it be characterised in positive terms ? It is the essential or conceptual "because". But what does this mean ? It will be helpful to consider another example of this "because". Consider

(15)   the number of F's = the number of G's
(16)   there is a one-one correlation between the F's and the G's
(17)   (15) iff (16)
(18)   If (15) and (16), then (16) because (15)

A philosopher who endorses (18) should, I suggest, accept that (18) itself holds in virtue of the nature or essence of numbers. To say this is to say that the claim formulated with the help of the essential "because", (18), is itself to be explained in terms of a claim about the instantiation of essences or natures, a claim which employs the "because" of essence. The "because" of essence may occur without the essential "because", as in

(19) If x endures/occurs/obtains/is alive/enjoys intentional existence/ist-zum-Tode…, then x endures/occurs/obtains/is alive/enjoys intentional existence/ist-zum-Tode…because$_{essence}$ of the essence of x.

But the essential "because" requires the "because" of essence[5].

Let us now see how the distinction between the essential "because" and the "because" of essence figure in a theory of truthmaking which endorses truthmaker maximalism and rejects the claim that truthmaking, as the theory conceives of it, is a relation. Consider

(20)   If the proposition that Sam is sad is true, then the proposition that Sam is sad is true because the state of affairs that Sam is sad obtains

If the "because" here is the essential "because", then (20) holds in virtue of the essence of something. The most plausible candidates are the essences of truth and of propositions. The

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[5] For an account of the "because" of essence different from that employed here, cf. Fine 1994. Is the essential "because" which is employed in (4)-(6) above grounded in a "because" of essence ? I discuss this question in Mulligan 2006a.

generalisation of (20) so understood is then just

> TME   In virtue of the essence of propositions and of truth, every proposition that p which is true is made true by the obtaining of the state of affairs that p

There is both *a priori* and *a posteriori* knowledge of the essences, natures or types of objects. (TME) is a trivial, *a priori* truth. It has seemed to many to be false or non-trivial only because of the mistaken assumption that obtaining states of affairs, if there are such things, must be ontologically fundamental.

Might there not, after all, be a *relation* of truthmaking ? The foregoing suggests that, if there is such a thing, then the "make" in "makes true" must not be elliptic for any sort of "because".

Let us consider, first, the more general question whether there is any sort of relational, non-causal making in the large family of instances of "x makes y F" – making valuable ("valifying"), wrong-making, making probable ("probabilising"), making possible, making necessary, making obligatory and so on[6]. It has been argued that events make propositions probable and that "probabilise" really expresses a relation[7]. But a candidate closer to present concerns is provided by *fact-making*[8]. Consider

(21)   Sam makes the state of affairs that Sam exists obtain
(22)   Sam's sadness makes the state of affairs that Sam is sad obtain
(23)   Sam's jump makes the state of affairs that Sam jumps obtain
(24)   Sam's jump over the fence makes the state of affairs that Sam jumps over the fence obtain

Now (21) is not elliptic for

(25)   The state of affairs that Sam exists obtains because Sam exists

And (21) is true whether Sam is a substance or a process. Of course, one who thinks that Sam's sadness and Sam's jump are properties, unit-properties or multiply-exemplifiable properties, will say that "make" in (22)-(24) is elliptic for "because"[9]. But if, as I argued above, Sam's sadness is a wholly particular, wholly temporal state and his jump a wholly particular and wholly temporal process, and if states and processes are not properties or

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[6] Cf. Perzanowsky 1991, 1994.

[7] Kneale says "probable" is "elliptic" for the "relation" of "probabilification". Similarly, Nicod writes about the Johnson-Keynes theory that "the perception of this principle that probability is a relation, not a quality, of propositions removes from probability everything that seemed elusive and provisional" (Kneale 1949 10-11; Nicod 1924 20, cf. 19). One critic of Kneale's view relies on arguments which resemble those brought against the very idea of truthmaking, cf. Toulmin 1958 72ff..

[8] That there are fact-makers is not exactly a common claim. Cf. Vallicella's (2000) exploration of "existence-makers" for states of affairs, Smith 1999, §16, Plourde 2004.

[9] Armstrong (1997 115-6) argues that the truth that a instantiates universal F is made true by what he calls the state of affairs of a's being F and that truthmaking is a relation. He argues that this is the way to counter the possibility of a Bradleyan regress. I follow Husserl in thinking that formal relations, such as parthood and exemplification, unlike material relations and properties, such as the relation of love and the property of sadness, put a stop to any regress. If Sam exemplifies the property of sadness, nothing connects Sam, the property of sadness and the relation of exemplification.

relations, the way is open to claim that "make" in (22)-(24) has a relation as its semantic value. Then there are cases where making a state of affairs obtain, making a fact exist, are really relations. Some cases. But clearly *fact-maker maximalism*,

(26) If the state of affairs that p obtains, something makes the state of affairs that p obtains

is false, if fact-making is a relation. Nothing makes the state of affairs that there are neither witches nor genders obtain although this state of affairs certainly obtains.

Nevertheless, where some ontologically fundamental entity makes a state of affairs that p obtain, it will also make the proposition that p true. And in each case the making is a relation. This claim contrasts with a weaker and a stronger claim. The weaker claim concedes that there are makers which are objects but denies that "makes obtain" expresses a relation. On this view, making is not a relation but relation-like. The stronger claim is that "makes obtain" expresses a relation and that "obtains" is a derelativisation of "makes obtain". Parallel claims are the claim already mentioned to the effect that "is probable" is a derelativisation of "makes probable" and the claim that "true" is a derelativisation of "makes true". My impression is that the claim that there is a relation of making can only be defended if one accepts the stronger claim.

We have identified two distinct truthmaker connexions. There is the *tie* expressed by the essential "because", which is in turn rooted in a "because" of essence. And there is the *relation* of truthmaking (or relation-like truthmaking) which relates ontologically fundamental entities to true propositions in virtue of making states of affairs obtain. (TME) makes use of the tie but not of any relation of making. A philosopher who denies that there are obtaining states of affairs or rejects the very idea of fact-making, may, then, simply say that some, but not all, true propositions stand in the truthmaking relation to ontologically basic entities. And this is indeed what many friends of truthmaking do say.

(TME), I argued, is an *a priori* triviality. Many friends of truthmaking have thought that truthmaker theory is one way to do ontology, and in particular, one way to do *a posteriori*, realist ontology or metaphysics, that is to say, one way to find out what is ontologically fundamental. If there really is a relation of truthmaking, it is easy to see that some such relations will only be discoverable *a posteriori*. It is enough to accept two very plausible principles about relational truthmaking:

(27)   If x makes y true than anything containing x as a part makes y true

(28)   If x makes y true then any z which is such that x makes z exist
        makes y true.

Then many instances of these principles will furnish truthmakers which cannot be read off from their truth-bearers. As far as I can see, someone who rejects (27) or (28) does so because he is attached to the idea that whatever makes a truth-bearer true must be represented by the truth-bearer. One traditional way of understanding both (TMPPS) and (TME) is also attached to this idea and says that propositions represent states of affairs which, if they obtain, make the proposition true. But above I have given some reasons for rejecting the claim that propositions or other truth-bearers represent states of affairs.

Whether or not one accepts that there is a truthmaking relation, there is much to be said for (TME). The attractions of truthmaker essentialism are evident; it tells us that truth and truthmaking are interdependent and shows what this means. It is perhaps, together with Armstrong's recent account, one of the only two accounts of truthmaking which can claim to be a part of a philosophical account of truth. I have argued that one main obstacle to taking seriously obtaining states of affairs as truthmakers is the false view that obtaining states of affairs are ontologically fundamental. But there are, of course, two further obstacles. If (TME) is to be accepted, then it has to be shown that there are propositions and that they are truth-bearers, and also that there are obtaining states of affairs. The arguments in favour of the view that there are propositions and that they are the primary truth-bearers have persuaded many philosophers and I shall here simply assume that such arguments are sound[10].

Arguments in favour of the indispensability of obtaining states of affairs or facts, which are generally also arguments in favour of states of affairs understood as Armstrong understands them, fall into two main categories. In the first category we find arguments to the effect that certain truths can only be true if there are facts. One example is the claim that true causal explanations require us to assume facts. Another example is Armstrong's argument that the truth that an object exemplifies a certain property can only be made true by what he calls a state of affairs[11]. A similar argument can be made using the account of states of affairs given here: the proposition that a exemplifies the property F is made true by the obtaining state of affairs that a exemplifies the property F. But such an argument cuts much less ice than Armstrong's argument. In Armstrong's formulation, "makes true" expresses a relation of which the first term is a particular, a state of affairs. In my formulation, it expresses no relation. Indeed it would be in the spirit of the present view to claim that,

> (29) If Sam exemplifies the property of sadness and the state of affairs that Sam is sad obtains, then the state of affairs that Sam is sad obtains because Sam exemplifies the property of sadness.

In other words, property exemplification is more fundamental than facthood.

In the second category of arguments for the indispensability of facts there is the claim that knowledge must be knowledge of facts, that if there is knowledge-that, then there are facts. This claim belongs to a large family of claims which all have the following structure: given the existence of certain psychological states and acts, it follows that different types of formal terms and predicates are neither semantically valueless nor semantically superfluous. One such claim is the argument from the activity of colligation to the conclusion that the formal category, number, is not empty. Another, that the formal predicate "is valuable" is not empty because there is affective knowledge of value. Another concerns the most basic formal category, that of objecthood. To be an object is to be the object of a singular term or of acts of referring or perception. "is an object" is a derelativisation of "is an object *of*". What is true of "is an object" is not true of "is a thing/substance/entity". We know that there are objects because we know that there are perceptions and non-empty singular terms. Elsewhere I have sketched an account of knowledge which has as a consequence that knowledge is of obtaining states of affairs[12]. This account and the analogous claims just mentioned are compatible with the view that such formal objects as propositions, classes and states of affairs as well as

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[10] See Kuenne 2003 ch. 5.
[11] See note 7 above.
[12] See Mulligan 2006a.

formal properties such as number, being true and obtaining and formal relations such as exemplification and membership are not ontologically fundamental.

Since I believe that there are facts or obtaining states of affairs and that none of these is ontologically fundamental, I suggest that the role of a theory of relational making is best taken care of within the theory of fact-making. This theory requires much honest toil. Essentialist truthmaker maximalism is not quite an example of theft but it certainly requires less toil than the theory of fact-making[13].

References

Armstrong, D. 1997 *A World of States of Affairs*, Cambridge University Press
　　　　　2004 *Truth and Truthmakers*, Cambridge University Press

Fine, K. 1994-5 "Ontological Dependence", *Proceedings of the Aristotelian Society*, 95, 269-90.
　　　　1994 "Essence and Modality", *Philosophical Perspectives*, (ed. J. Tomberlin), 8, 1-16.

Johansson, I. 2004 "Truthmaking: A Cognition-Independent Internal Relation with Heterogenous Relata", *Experience and Analysis. Papers of the 27th International Wittgenstein Symposium*, Austrian Ludwig Wittgenstein Society, Kirchberg am Wechsel, 154-156.
　　　　"Roman Ingarden and the Problem of Universals", Proceedings of the 2004 Montreal conference, *Logic, Ontology, Aesthetics. The Golden Age of Polish Philosophy*, forthcoming.

Kneale, W. 1949 *Probability and Induction*, Oxford, Clarendon Press

Künne, W. 2003 *Conceptions of Truth*, Oxford: Clarendon Press

Mulligan, K 2006 "Wahrheit und Wahrmachen in 1921", forthcoming in a volume edited by G. Imaguire & C. Schneider
　　　　　2006a "Facts, Formal Objects and Ontology, *Modes of Existence. Papers in Ontology and Philosophical Logic*, Proceedings of the May 2005 Bergamo Conference, eds. Andrea Bottani & Richard Davies, forthcoming.
　　　　2006b "Ascent, Propositions and other Formal Objects", Proceedings of the May 2004 Padova conference on Propositions, forthcoming.

Nicod, J. 1924 *Le Problème logique de l'induction*, Paris. Félix Alcan

Perzanowsky, J. 1991 "Modalities, Ontological", *Handbook of Metaphysics and Ontology*, Vol. II, eds. H. Burkhardt & B. Smith, Munich: Philosophia Verlag, 560-562.
　　　　1994 "Reasons and Causes", *Logical and Causal Reasoning*, eds. J. Faye, U. Scheffler, M. Urchs, Berlin: Akademie Verlag, 169-189.

Pfänder, A. 1921 *Logik*, Jahrbuch für Philosophie und phänomenologische Forschung, Vol. IV, zweite durchgesehe Auflage 1929, Halle: Niemeyer.

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Plourde, J. 2004 *Nécessité, possibilité et impossibilité dans le <u>Tractatus logico-philosophicus</u>. Essai d'une reconstruction de la théorie wittgensteinienne des modalités*, Geneva PhD.

Smith, B. 1999 "Truthmaker realism", *Australasian Journal of Philosophy*, 77 (3), 274-291.

Toulmin, S. 1958 *The Uses of Argument*, Cambridge University Press.

Vallicella, W. F. 2000 "Three Conceptions of States of Affairs", *Nous*, 34:2, 237-259.