

Hochberg presuppose the existence of facts when they respond to Bradley's regress – in the former case allowing for the possibility of infinitely many facts, in the latter case assuming that there are facts that fall within the range of the relevant description operator – (“ ιp ”) – both Russell and Hochberg fail to resolve the difficulty for relations that Bradley identified.

Of course this concern constitutes no more than a challenge to what Hochberg has said. The text of *Appearance and Reality* no doubt admits of several interpretations. And independently of historical details, it is notoriously difficult to pin down the structure or adjudicate upon the significance of regress arguments. Nevertheless, Hochberg's treatment of Bradley's argument and the counter I have suggested serves to typify what so often occurs when one engages with the details of Hochberg's arguments. Not only does one discover a novel and distinctive perspective on themes that are perhaps all too familiar. One is also driven back to consider afresh the basic ontological problems that inspired the early analytic philosophers.*

Fraser MacBride

School of Philosophy, Birkbeck College, London

Book Symposium “Tractatus Logico-Philosophicus. Introduzione alla lettura”

Manuel GARCÍA-CARPINTERO,[†] Diego MARCONI, Pasquale FRASCOLLA

Pasquale Frascolla, *Tractatus Logico-Philosophicus. Introduzione alla lettura*, Carocci, Roma, 2000, 322 pp.

Frascolla on Tractarian Logical Pictures of Facts

Manuel GARCÍA-CARPINTERO

Frascolla's book is an excellent introduction to Wittgenstein's early work, providing a compelling critical discussion of its most important themes. I agree with many of the interpretative and critical views that Frascolla puts forth. I like the central place that he ascribes to the logical and semantic problems that

* Thanks to Daniel Nolan and Herbert Hochberg. I am also grateful to the Leverhulme Trust whose award of a Philip Leverhulme Prize made possible the writing of this review.

[†] Departament de Lògica, Història i Filosofia de la Ciència, Universitat de Barcelona, Baldri Reixach, 08028 Barcelona; Email: m.garciacarpintero@ub.edu

Wittgenstein confronted and to the proposals Wittgenstein made to deal with them. As a reviewer should, I will concentrate here on some disagreements, focusing on Frascolla's discussion of thoughts, the logical pictures of facts (§ 2.4). One disagreement concerns Frascolla's denial that Tractarian thoughts may consist of word-like psychical constituents. Another is about Frascolla's proposal in that section to weaken Wittgenstein's claim that a picture and the reality it depicts must have *the same* pictorial form. I will start with the latter.

Wittgenstein defended his picture theory of intentionality by arguing that only such a theory accounts for two fundamental facts about linguistic representations: that (at least in paradigm cases, let us say, so as not to prejudice any relevant issue) we understand linguistic representations without knowing whether or not they are correct, whether or not the represented reality is in fact as represented; and also that we can understand immediately, without further explanation, linguistic representations that we have not encountered before. Now, the central element of the picture theory that Wittgenstein marshals to this effect is the claim that the picture and its represented reality share their pictorial form. Regarding the first explanatory issue, 2.17 says that, in order for a picture to be able to depict reality correctly or incorrectly, it "must have in common" with reality its pictorial form; regarding the second, 4.02 says that we can see that a proposition is a picture of reality "from the fact that we understand the sense of a propositional sign without its having been explained to us". (I assume that the demonstrative 'this' occurring in 4.02 refers to material in 4.01, the paragraph immediately preceding it *in the order indicated by their numbers* – which Frascolla lucidly explains, *op. cit.*, 27–9)

How is the picture theory supposed to deal effectively with these explanatory problems? (There will be no point in considering the further issue of whether it really is the only theory that accounts for them.) The picture theory, as I understand it (which, aside from the issue at stake, mostly coincides with Frascolla's presentation of it), ascribes to any intentional system, i.e., any system exhibiting the two properties to be explained, two crucial semantic features, which we may describe as an *external* and an *internal* one. The external ingredient comprises a lexicon and its correlations with independent items, which Wittgenstein thought of as consisting of implicit ostensive definitions. The internal ingredient is an abstract syntax applying to the items in the lexicon which signifies, by way of what Goodman (1976, 52) calls *exemplification*, identical relations between the items correlated with them in the external ingredient – as the sample given by the tailor signifies the color and texture of the suit he purports to make.

Let us see how this is supposed to solve the first problem. The syntax determines a class of well-formed elementary sentences; not just any concatenation of items in the lexicon is acceptable, only some are permitted. Each of them is in that respect a possibility: it is possible to say it, as opposed to abstaining from

saying it, independently of the others. *Saying* is here the lowest common factor of different speech acts, asserting, ordering, conjecturing, requesting, and so on, the differences between which Wittgenstein thought irrelevant to his concerns. The syntax thus determines a class (perhaps infinite, if the lexicon is infinite) of maximal “discourses”, allowed combinations of the two possibilities indicated for each elementary sentence. Correspondingly, given that the syntax is common to the lexicon and its correlated items, it determines the possibility that the combination of items corresponding to the names in any given elementary sentence (a state of affairs) obtains, and the possibility that it does not obtain (all lexical items are thus “rigid designators”). It determines thereby a corresponding logical space of maximal combinations of these two possibilities for each state of affairs; only one of them can be actualized, constituting the actual world. What is required to understand a sentence is to know the interpreted lexicon from which it is built and its logical syntax; what is thereby known is a possible state of affairs, the class of maximal combinations constituting the logical space compatible with its obtaining, what Wittgenstein calls the sentence’s *truth-condition*; it is not required to know whether or not this class includes the actual world.

This (mostly) accounts for the first fact about intentional systems, assuming the picture theory as presented above. Now, all (and only) truth-conditions are (contents of) possible sayings, not only those expressed by elementary sentences; this is where some appropriate set of logical constants is required, to gain the additional expressive potential. But the point made about the explanatory virtue of the picture theory for the case of elementary sentences applies also to complex sentences including logical constants. Understanding them requires, according to the picture theory, knowing the interpreted lexicon, their logical syntax and the identical “syntax” in the world signified by exemplification, plus the set of logical constants needed in order to express every possible truth-condition thereby determined. This assigns to any non-defective (neither tautologous nor contradictory) sentence a truth-condition, without thereby establishing whether or not it actually obtains.

Wittgenstein particularly liked (*Tractatus*, 2.1511; cf. *Investigations*, §§ 95, 194) the fact that this view accounted for the problem of intentionality (representations can represent what does not obtain in the actual world) while preserving an essential connection between linguistic representations and the world (representations are of real items, not of some intermediate ghosts, as in representationalist accounts of perceptual experience). This is achieved in the following way: the represented possible states of affairs are made of real objects, constituting the actual world (all possible worlds, given that lexical items are rigid designators) and of equally real, possibility-determining, “syntactical” relations between them.

Dealing with the second explanatory issue, assuming the picture theory as presented, is easier. Knowing the lexicon, the logical syntax signifying by exem-

plification, and the relevant set of logical constants suffices for understanding sentences typically exceeding those that one has in fact encountered (*typically*, i.e., unless one has been around a long time); in contrast, the meaning of any new lexical item must be explained to us.

Frascolla would agree, I think, that the picture theory to be found in the *Tractatus* is the one sketched here. However, he finds it impossible to think that Wittgenstein seriously entertained the view. The problem is that, when one leaves behind the examples that Wittgenstein considers at the beginning, like three-dimensional models of car-accidents, and moves instead to the paradigm cases to which the theory is supposed to apply – linguistic representations in natural languages – it seems absurd to think that there are any relations common to the expressions constituting the representation and the objects they are about (*op. cit.*, 60). This appears to require weakening the picture theory; on this weakening, the theory would only require the existence of a correlation between the lexical items and the items they stand for and a system of syntactical relations between the lexical items, such that to each syntactical relation between the lexical items corresponds some or other relation between the items they stand for (62–3). But Frascolla correctly objects to this weakening on the grounds that it does not appear anywhere in the work (63–4); he also mentions its main problem, namely, that the weakened version of the theory does not seem to be able to account for the facts about linguistic representation that Wittgenstein wanted to account for. It is even less clear how it could provide what Wittgenstein most desired from a theory of intentionality, namely, a proper account of logical validity.

We will return to these points later. I will now present Frascolla's own proposal, for it raises essentially the same doubts, and if the objections apply to it, they apply also to the weakened version of the original picture theory just considered. Frascolla suggests adopting a less liberal version of the weakened interpretation, adding to it a further constraint. He first introduces the constraint in an intuitive way: as in the weakened version, there does not need to be identity, merely some correspondence, between the relations between the lexical items and those between what they stand for; but, in addition, "the common element to the picture and the depicted situation could consist in the fact that they are two distinct exemplifications of the same abstract type of arrangement" (64). And he goes on to make this more precise, by having recourse to the set-theoretic notion of *isomorphism*: the two sets of relations are "the same abstract type of arrangement" to the extent that they determine *isomorphic* structures, whose domains are the items in their respective fields – lexical items on the one hand, and the items they stand for on the other.

Now, there is a crucial ambiguity here, which poses a dilemma for Frascolla's proposal. Remember that the set-theoretic notion of isomorphism is purely extensional. Because of this, by itself, the requirement of isomorphism adds nothing to

the original version of the picture theory. For, considered as extensional set-theoretic entities, the relations between the lexical items cannot be identical with the relations between the items they stand for, even under that original version (unless, of course, we are considering a self-referential case, in which the lexical items stand for themselves). Otherwise, the relations relate different items, and therefore they are different extensional relations. The main claim in Wittgenstein's original picture theory is about relations understood as intensional entities; given ordinary assumptions about extensional entities and about the *stand for* relation, it entails that, at the extensional level, there can only be an isomorphism between the relevant structures.

With this in mind, let us consider again the initial intuitive version of Frascolla's proposal. What we should consider is the force of the requirement that the two sets of relations are "the same abstract type of arrangement" when the relevant relations are understood as intensional entities, for, as we have seen, otherwise it poses no additional constraint on the original version of the theory. And now there are two possible interpretations of the requirement, which create the dilemma I mentioned. Under the first interpretation, that the two sets of relations are "the same abstract type of arrangement" means that they, as intensional entities, are determinates of one and the same determinable set of relations, also taken as intensional entities. Under the second interpretation, this is denied; as intensional entities the two sets do not instantiate any common set of relations; they are "the same abstract type of arrangement" to the extent that they determine set-theoretically isomorphic structures, *and only to that extent*. Now, the dilemma is this. Given the first interpretation, Frascolla's proposal is no alternative to the original version of the picture theory; it *is* the original picture theory. It cannot therefore deal any better with the problems Frascolla sees in it. I thus assume that his considered option would be the second, and this is the one I will be calling *Frascolla's modified picture theory* in what follows. But it is important to make clear the ambiguity, and the dilemma it poses, to prevent a theoretically unacceptable oscillation: to see the proposal under the second interpretation when one counts it as a real alternative to the original version, and to resort to the first when one considers it to have the explanatory virtues of the straightforward version. This is the second horn of the dilemma, whether Frascolla's modified picture theory can really explain the two facts about intentionality with which we began. My worries will be clearer if we first discuss whether it can provide the other benefit, which, as I mentioned above, was in my view for Wittgenstein the more important one: to entail an account of logical validity.

There are many indications of the centrality of this issue among the philosophical problems that worried Wittgenstein in this period, beginning of course with the amount of discussion explicitly devoted to it in the *Tractatus*. The early letters and notebooks reflect how his interest in what I am calling the

problem of intentionality evolved from his primary interest in giving an account of logical validity improving on those put forward by Frege and Russell. To me, the most compelling piece of evidence comes from the *Investigations*. The early hundred-odd sections of that work read like a criticism of the Tractarian philosophy. His criticisms of several aspects of the *Tractatus* allow him to put forward his new views. Among these criticisms are: the neglect of the differences between forces, focusing only on what I have been calling *sayings*; the notion of a logical name, and the correlative notion of a simple; the notion of a unique analysis, and so on and so forth. After all this, in § 65 we are told that “the great question which lies behind all these considerations” is the problem of giving “the general form of propositions”, for which, of course, the picture theory provided the intended answer. There follows a therapeutic bashing of the assumptions which make this a problem, and finally we are told, in § 89, that the problem to which the preceding considerations lead is “In what sense is logic something sublime?”

In effect, Wittgenstein’s criticism in the *Tractatus* of the views on the nature of logical validity that Frege and Russell had defended is that they do not account for this “sublimity” of logic. According to Frege and Russell, logically valid propositions, and inferential transitions between propositions, are distinguished by their maximal generality. According to Wittgenstein, however, this is wrong (6.1231); some logical truths are not literally speaking general (*Socrates is human or he is not*); and, in any case, a general truth may well be only accidentally true. Logical validities are necessary, they obtain in every possible world; and (for Wittgenstein, this is more of the same) they are *a priori*. This crucial fact is what Frege’s and Russell’s proposals do not capture; and it was the fact that the picture theory accounted for it that mainly recommended it in his eyes. The picture theory can solve the problem because for Wittgenstein logical validities are mainly those expressed in natural languages (5.5563); the study of the logical properties of artificial languages is only a means of exhibiting in a simpler way the logical properties of our ordinary assertions and thoughts. The main virtue of the picture theory in Wittgenstein’s eyes is, in sum, that it dealt properly with the sublimity of logic; less metaphorically, that it provided a nice account of the epistemology of modality, in the clearest case in which it arises, that of logical validities.

It is easy to see how the original picture theory accounts for the sublimity of logic, the fact that we know *a priori* necessary truths and relations of necessary truth preservation; and also how it does this in the terms indicated in the *Tractatus*: “It is the peculiar mark of logical propositions that one can recognize that they are true from the symbol alone, and this fact contains in itself the whole philosophy of logic” (6.113). If the relations that determine which states of affairs are possible are reflected by identical relations determining which combinations of

lexical items are logico-syntactically well formed, then we have such an explanation. Knowing the facts that determine which possibilities there are, which ones correspond to a given saying, and which ones, expressed by a given saying, are included in the ones expressed by others is already a presupposition of understanding those (or any) sayings. All these matters are determined by the logico-syntactical relations determining well-formedness, signified by exemplification. No empirical evidence is needed, or relevant.

The main problem with Frascolla's modified picture theory is that, as far as I can see, it cannot provide an epistemology of logic meeting Wittgenstein's prerequisites. Given that the relations determining which states of affairs are possible differ from those determining which propositional signs are logico-syntactically well-formed, how can we be said to know them *a priori* ("from the symbol alone")? How can we even be said to know that there exists the isomorphism posited by the modified picture theory, i.e., how can we exclude the possibility that there are logico-syntactically permitted propositional signs to which no possible state of affairs corresponds, or vice-versa? The wedge that the modified picture theory introduces between the relations determining the logico-syntactical standing of signs and those determining the modal status of what they (purport to) represent poses an epistemological problem, in opening the epistemic possibility that the relevant sets of intensional relations determine non-isomorphic extensional relations in their respective domains. Frascolla is aware of this (*op. cit.*, 78), but he argues that the problem does not arise in the case of logical pictures. He accepts that, when the relations between the representing and the represented items are "at different levels", we can make sense of the disparities; thus, for instance, in Escher's pictures, where possible two-dimensional spatial pictures represent impossible three-dimensional spatial configurations. In the case that concerns us, however, we cannot really make sense of the existence of a disparity, because "there is no higher level to which we can go to make sense of it" (*op. cit.*, 79). But this metaphorical claim merely begs the question by simply asserting what is at issue, namely, that, even though the relations constituting logical form in the representing sign and the represented state of affairs are different, they cannot differ in the relevant ways, they cannot but be extensionally isomorphic.

Once we appreciate the problem in the case of the account of logical validity, similar doubts arise concerning the capacity of the modified picture theory to account for the two facts about intentional systems mentioned at the beginning. If we cannot guarantee the correlation between logico-syntactically permitted sign and possible state of affairs, we also lack any guarantee of genuine understanding for any propositional sign, given knowledge of the lexicon and the logical syntax, or that it represents something that is possible, although perhaps not actual. Needless to say, if we knew that the isomorphism posited in the modified theory

does exist, we would have that guarantee; but the problem lies in explaining how we can *know* this, on the assumption that the relevant sets of relations determining on the one hand logico-syntactical well-formedness, and on the other possibility, are different.

Of course, the original picture theory is false, and therefore it is itself unable to provide the explanations we are requesting from Frascolla's modified version. If the original picture theory were true, at most elementary logical validities would be necessary, and known a priori. But modal intuitions as strong as those establishing the necessity and apriority of elementary logical validities credit the same modal status to *red is a color* or *nothing can be entirely red and entirely green*, and the suggestions by Wittgenstein for dealing with these cases on behalf of his theory lead nowhere; not to mention his suggestions for dealing with alleged philosophical truths, like the picture theory itself. And there is also the necessity, given its truth, of *water contains oxygen*, also established by compelling modally relevant intuitions. The right lesson to be learnt from these well-known arguments against the original picture theory is that the presuppositions in the rhetorical questions posed for Frascolla two paragraphs back manifest deeply misguided philosophical prejudices about the epistemology of modality.

But this does not help Frascolla's proposal. The issue here is only indirectly about philosophical truth; in the first place, it is about hermeneutical truth. The original picture theory is false, but one can see how it is supposed to account for some philosophically relevant data. In so doing, it sets the data into relief. There must be a philosophical account of logical validity, and it should explain, or at least explain away, the sublimity of logic, the a priori acquaintance with modal reality we have, which is manifest in this case. There must be a philosophical account of intentionality. The account of the former should depend on that of the latter. Psychologists are typically more proud of discovering "effects" (data for any theory to account for) than of the theories they put forward to account for them: the theories will probably be superseded, while the effects will probably remain. A similar attitude should prevail in philosophy. Ascribing the original picture theory to the *Tractatus* is more consistent with the text; above all, it sets into relief what in my view makes the work important, which is the conglomerate of philosophical "effects" just mentioned. The modified picture theory is not so obviously false. But, if I am right that it does not allow us to account for the three highlighted "effects", then that is a more important piece of evidence, which goes against its hermeneutical truth.

There remains Frascolla's main reason for seeking a weakening of the theory. Is it not just obvious that the original picture theory is false? How could anybody think that identical relations-in-intension, no matter how abstract, relate lexical items to determine logico-syntactical well-formedness, and the items they stand for to determine possible situations? But, in the first place, it is not so obvious;

the very abstract nature of the issues should prevent us from taking anything as obvious in this field. There is, for instance, the very case that Wittgenstein mentions to illustrate his view, that of transitive relations and the sentences representing them (3.1432; Frascolla's discussion of this paragraph is very helpful, 138ff.). At first sight, the syntactic resources that "accusative" languages and "ergative" languages use to represent transitive situations are very different. However, some grammarians argue that, at a sufficiently abstract level, all languages use the same syntactical relations (Baker, 1997). I agree that, even granting this, there is no immediate step to the claim that the very same abstract relations are instantiated in the represented transitive situations. However, it is at least psychologically understandable that someone takes this further step, especially someone in the grip of a beautiful theory compellingly able to account for facts otherwise difficult to explain. Wittgenstein suggests some psychoanalytical explanation like this for the mistakes of his former self in many paragraphs of the *Investigations*.

I move now to my second criticism of Frascolla's claims about thoughts, the logical pictures of facts. In his "Critical Notice" Ramsey (1931) says that "As to the relation between a proposition and a thought Mr. W. is rather obscure; but I think his meaning is that a thought is a type whose tokens have in common a certain sense, and include the token of the corresponding proposition, but include also other non-verbal tokens". These non-verbal thought-tokens that Ramsey contemplates here appear to be those which Wittgenstein mentioned to Russell, in his famous explanatory letter of August 19, 1919:

"... But a *Gedanke* is a *Tatsache*: what are its constituents and components, and what is their relation to those of the pictured *Tatsache*?" I don't know *what* the constituents of a thought are but I know *that* it must have such constituents which correspond to the words of Language. Again the kind of relation of the constituents of thought and of the pictured fact is irrelevant. It would be a matter of psychology to find it out.

In fact, these thought-tokens constituted by "words" from a Language of Thought appear to be more fundamental than those constituted by spoken or written words, for according to 3.5, a propositional-sign is a thought when "applied and thought out". This fairly standard interpretation of Tractarian thought is corroborated by two important pieces of evidence in the work itself. Firstly, the interpretation helps us to understand Wittgenstein's cryptic remarks on propositional attitudes (5.542); the idea would be that, when we ascribe a propositional attitude, we are implicitly referring to a propositional sign (in the Language of Thought) and its sense. (This does not yet establish whether the intended point about propositional attitudes is: "and therefore, they are also truth-functions of elementary propositions"; or, as I think: "and therefore, they are not meaningful propositions".) Secondly, it helps us to understand (also, within limits) the remarks about the metaphysical subject like 5.5421 and 5.63; for the latter, Kripke's (1982, 131–2, fn. 13) remarks are

very helpful. The idea here is that the “metaphysical subject” consists of the meaningful lexical items in the relevant Language of Thought, not any of the objects signified by those items.

Frascolla appears to deny that Tractarian thoughts consist of psychological constituents, and are therefore psychological facts to that extent, on the basis that it leads to a psychologistic view of logic incompatible with Wittgenstein’s views. I say “appears” because I am not very clear about his views here. On the one hand, he thinks his interpretation forces him to offer a very implausible account of the motivation behind Wittgenstein’s explanations in the letter we just quoted. Frascolla explains it away by suggesting that, in writing the letter, Wittgenstein indulged in speculating on psychological empirical matters for Russell’s sake, who is said to have been more concerned than Wittgenstein was with these aspects of the problems (*op. cit.*, 77). On the other hand, the reasons that Frascolla mentions in favor of disregarding what Wittgenstein appears to say quite in earnest in the letter appear to be irrelevant for that purpose. Frascolla is concerned that “if one identifies the possibility of a situation with it being thought about in the mind, i.e., with the possibility of a certain psychological fact, one ends up subordinating logic to the empirical laws to which facts of this sort are subject” (*op. cit.*, 76). But this is a non-sequitur, as far as I can see. According to Wittgenstein, we know *a priori* the three facts about linguistic representations that we mentioned earlier in this review. Linguistic representations have these properties only in so far as they are understood; thoughts providing the relevant understanding are primary to this extent. Now, Wittgenstein thinks he has an argument that the picture theory, and the picture theory alone, can account for those *a priori* facts; this is a sort of transcendental argument, whose conclusion counts also as *a priori* (*a priori* nonsense, if the conclusion is correct; a truth that is shown or manifested in the fact of the existence of meaningful representation, but cannot be said). The conclusion is that there must be representational signs in the mind, which are themselves facts, i.e. for which a system of “syntactical” laws determines a well-defined class of possible configurations, and which stand in semantic relations with external items subject to the same “syntax”. Those items, and their relations with external items, have a concrete psychological nature, and are subject to empirical, contingent psychological laws; but the contingency and empirical character of the relevant psychological laws need not get transmitted to the logically relevant aspects of the psychological phenomena. I do not think that there is anything special about the Tractarian views on these matters. If Frascolla’s argument were correct, it would be wrong for any philosopher to advance allegedly *a priori* claims about the mind. To give just one example, Frascolla’s argument would dispose of the apriority of Gareth Evans’ (1982) well-known Generality Constraint. I do not deny that there is a problem here;

see, for instance, Martin Davies' (2000) discussion. But a sufficiently compelling argument for Frascolla's conclusion requires several important additional steps.*

Manuel García-Carpintero
Departament de Lògica, Història i Filosofia de la Ciència,
Universitat de Barcelona

REFERENCES

- BAKER, M. 1997, "Thematic Roles and Syntactic Structure", in L. Haegeman, ed., *Elements of Grammar*, Dordrecht: Kluwer, 73–137.
- DAVIES, M. 2000, "Persons and their Underpinnings", *Philosophical Explorations*, 3, 43–62.
- EVANS, G. 1982, *The Varieties of Reference*, Oxford: Clarendon Press.
- GOODMAN, N. 1976, *Languages of Art*, Indianapolis: Hackett.
- KRIPKE, S. 1982, "Wittgenstein and Other Minds", postscript to *Wittgenstein on Rules and Private Languages*, Cambridge, Mass.: Harvard University Press.
- RAMSEY, F.P. 1931, "Critical Notice of L. Wittgenstein's *Tractatus logico-philosophicus*", in: F.P. Ramsey, *The Foundations of Mathematics*, (R.B. Braithwaite, ed.), Kegan Paul, London.

Frascolla on Logic in the *Tractatus*

Diego MARCONI[†]

Pasquale Frascolla's *Tractatus logico-philosophicus. Introduzione alla lettura* is an excellent book, possibly the best complete presentation of Wittgenstein's early work in many years. I found the book's general layout and style extremely helpful both for students and for expert readers (though I missed a final list of commented-upon sections from the *Tractatus* and the *Notebooks*). I agree with most of Frascolla's interpretive theses, though, predictably, not with all of them. Here I will focus on an area of partial disagreement, i.e. Frascolla's discussion of *Tractatus* logic as contained in his Ch. 4 and part of Ch. 5.

The account of logic that Wittgenstein provides in the *Tractatus* has proved controversial, both exegetically and substantively. Many have argued that it is

* I am thankful to María Cerezo, Jose Díez, Dan López de Sa, Diego Marconi and Genoveva Martí for comments on a previous version which led to improvements. Financial support for my work was provided by the DGI, Spanish Government, research project BFF2003-08335-C03-03 and the DURSI, Generalitat de Catalunya, grant SGR01-0018 and a Distinció de Recerca 2002.

[†] Dipartimento di Filosofia, Via S. Ottavio 20, 10124 Torino, Italy; Email: Marconi@cisi.unito.it