

# A Non-Contractive Theory of Naive Semantic Properties: Logical Developments and Metaphysical Foundations

The notion of *truth*, as its cognate notion of *reference*, is typically thought of as *semantic*—that is, as relating linguistic entities with the world. As such, these notions have been put at the foundations of many influential theories of language. Yet, in spite of their foundational role, it is precisely the ways in which such notions are thought to *relate linguistic entities with the world*—and which make them so useful in theorising—that seem to be fraught with *inconsistency*. Thus, focussing for the time being on truth, that notion seems to relate sentences with the world in accordance with the two principles of *ascent to truth* and *descent from truth*:

(AT) If  $P$ , then the sentence ' $P$ ' is true;  
(DT) If the sentence ' $P$ ' is true, then  $P$ ,

which, given *full classical logic* and natural assumptions about the *expressive richness* of our language, lead to absurdity. Such is the lesson of certain *semantic paradoxes* (for example, the *Liar paradox*, arising from considering the sentence that says of itself that it is not true).

The project *A Non-Contractive Theory of Naive Semantic Properties: Logical Developments and Metaphysical Foundations* (NTNSP) has concerned the development of a theory of truth that solves the semantic paradoxes by preserving (A) and (D) and by restricting classical logic. In particular, the theory developed has as distinguishing feature that of restricting the logical property of *contraction*, according to which, very roughly, the validity of an argument is not affected by the number of times that its premises are used in deriving the conclusion. NTNSP has shown that the restriction on contraction effectively blocks the semantic paradoxes. However, there are other well-known *alternative* ways of blocking the paradoxes by preserving (A) and (D) and by restricting classical logic in such a way as to retain contraction (for example, by restricting the law of excluded middle instead), and so NTNSP's general aim has been that of raising the non-contractive theory to the status of *serious competitor* in the debate among theories restricting classical logic.

This general aim has been achieved by meeting four research objectives in progressive order. The theory has first been provided with the necessary philosophical support grounded in a robust conception of truth as *correspondence* with the relevant facts (against the usual way of motivating (A) and (D) by appealing to a *deflationist* conception of truth). The theory has then been extended to a theory of reference, validating the principle of *ascent/descent for reference*:

(ADR)  $a$  is the referent of ' $a$ '

(which is problematic for the same reason as (A) and (D) are), showing that it

affords an innovative solution to the paradoxes of reference, which are acknowledged to have a somewhat more recalcitrant nature than the paradoxes of truth. The theory has subsequently been argued to enjoy substantial philosophical advantages over its rivals, in particular in its treatment of various *conditionals* (from one that allows for a definition of logical consequence in terms of *truth preservation* from the premises to the conclusion to one that allows for a smooth treatment of *restricted generalisations*). The theory has finally been given solid metaphysical foundations: failure of contraction has been explained in terms of a certain “*instability*” of the states-of-affairs expressed by paradoxical sentences, and the failure of the principle of *distributivity* (according to which “*P and (either Q or R)*” entails “*Either (P and Q) or (P and R)*”) has been justified in terms of an original, *global* conception of *indeterminacy*, which has been connected with previous work done by the recruited researcher on the paradoxes of vagueness. These results have been written up in a series of *research papers*, most of which have been published or are forthcoming in first-class international journals or in collected volumes published by international publishers. NTNSP has also generated a *special issue* for a journal and a *volume of collected papers*, in addition to providing the materials for a *monograph* currently in preparation.

NTNSP has been carried out in the highly congenial collaborative research environment offered by *LOGOS* (a research centre for analytic philosophy at the *University of Barcelona*), and has involved the organisation of a regular *research seminar* (in which basically all the research conducted within the framework of NTNSP has been presented and has benefitted from extremely useful feedback from the members of the seminar) plus the organization of an *international workshop*.

NTNSP has consolidated the recruited researcher’s *expertise* in philosophy of logic, language and metaphysics (and mathematical logic), and has also improved several of his *generic research and communication skills, academic competences* and *transferable knowledge*, thus allowing him to reach a higher level of research autonomy and leadership. The work done within NTNSP has in fact put the recruited researcher in a position to apply successfully for a *further 5-year research project* funded by the Portuguese government in which, among other things, he will put to use the theories of instability and indeterminacy developed in NTNSP to approach other problems in metaphysics and epistemology.

NTNSP has included several activities of *outreach beyond the research community*. The recruited researcher has taken advantage of the EU Erasmus staff programme to act once per year as a *Marie Curie Ambassador* at the *University of the Azores* and *Maltepe University* respectively, giving introductory undergraduate lectures on the semantic paradoxes and their relevance to philosophy, logic, mathematics and semantics. A *lecture day* has been organised in which *undergraduate* students at the department of philosophy have been introduced to the semantic paradoxes and their relevance to philosophy, logic, mathematics and semantics, while a *series of lectures* on the semantic paradoxes have been given for *master* students (both actions at the University of Barcelona). A talk introducing the topic of instability has been given at an interdisciplinary workshop on *philosophy and poetry*. A *website* documenting the work of the recruited researcher has been created, including an area devoted

specifically to NTNPS. Relevant entries in the *Wikipedia* have appropriately been created or edited. A *lecture* on the semantic paradoxes has been given for Catalanian *high-school teachers* in the framework of a series organized by the Institute of Catalan Studies. Building on that experience, an *elementary introduction to the semantic paradoxes* has been written and is now forthcoming in a Catalan literate journal, having as target high-school philosophy teachers and offering materials that they can exploit for their classes.

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