

Meaning, rules, and proofs

Course outline

Administrative details

Instructor: Bogdan Dicher (bdicher@me.com)

Language: English

Format: 2 hours weekly seminar

Time/Place: The first meeting will take place on Friday 07/10 from 3 PM in studio 34 (2nd floor), at the Department of Pedagogy, Psychology, Philosophy, Via Is Mirrionis, 1.

Subsequent meetings will be held every Thursday (starting from 13/10) from 3 PM in Aula 10A.

Course description

This course will examine critically logical inferentialism, i.e. the doctrine that the meaning of the logical expressions is determined by the rules for their use in proofs. The main question we'll address is whether and if so in what ways can rules endow an expression with a coherent meaning. At the heart of this doctrine lies the problem of harmony---the (purportedly) necessary match between the strength of the rules codifying the behaviours of the logical constants. We will connect the issue of harmony with several hot topics in the philosophy of logic, e.g., logical revisionism and logical pluralism.

There are no prerequisites for the seminar. Some familiarity with logic and in particular with Gentzen style calculi---natural deduction and sequent calculus---is desirable but not necessary.

Schedule

Week 1---Overview: Meaning theories and inferentialism

This seminar will survey various strands of inferentialism, in order to better place that subspecies which is known as logical inferentialism.

Week 2---Logical inferentialism: What sets it apart?

In this seminar we will talk about the idea that the meaning of the logical expressions is determined by their rules, looking at both its presuppositions and (some of) its consequences. We will also have a preliminary look at inferential accounts of logicity, and at the way validity and logical consequence are understood by mainstream logical inferentialists.

Week 3: Harmony: Dummett's seminal work

In this seminar we will review Dummett's account of harmony. We begin by discussing its meaning-theoretic assumptions and then move on to his account of harmony. We will focus, on his identification of harmony with conservativeness and its relation with normalisability, this last being a plausible interpretation of Dummett's 'local harmony'.

Week 4: Troubles in paradise: What is wrong with harmony qua conservativeness?

In this encounter we will discuss the extant criticisms of Dummett's identification of harmony with conservativeness. We will see how this induces an apparently lopsidedness into the account and we will trace this back to his revisionist agenda. At the same time, we will discuss briefly his notion of stability.

Week 5: Local harmonies: Alternative accounts of harmony

This encounter is devoted to discussing the alternative accounts of harmony that have been proposed in the literature. We will keep an eye on one important feature of these accounts, namely their ambition to find local properties, i.e., belonging to introduction-elimination pairs, which would indicate the obtaining of harmony.

Week 6: Locality vs. globality in accounting for harmony

In this seminar we will critically assess the tenet that locality is a desirable feature of an account of harmony. Our immediate aim is to get clear about the merits of the so called local accounts of harmony.

Week 7: Operational rules and proof-structures

In this encounter we will have a closer look at the way logics works. We will pay particular attention to the division of labour between operational and structural rules and properties and at the tenability of their sharp distinction. The upshot is that there is enough fluidity between these two aspects of a logic to make us question the value of locality.

Week 8: Monism, revisionism, pluralism

In this seminar we will focus on the philosophical lessons of our previous analyses of harmony. In particular, we will attempt to answer such questions as whether there are good harmony-induced reasons to be monists or even revisionist monists about logic. Likewise, we shall assess the plausibility of logical pluralism in light of harmony considerations.

Week 9: Harmony or harmonies?

This seminar is an exercise in sceptical thinking. We start mildly, by asking ourselves whether there is any point in searching for a one-fits-all notion of harmony. We will look at several logics and their proof-theoretic treatment in order to see which challenges they pose for the very requirement of harmony.

Week 10: Overcoming harmony?

Now we go big on scepticism: Our question is whether the concept of harmony is of any interest whatsoever. To deal with this we need to figure how simply having a notion of harmony informs our view of logic (beyond the obvious, that is). In this way, we will know what we can or must dispense with once we have dispensed with harmony. Is that a price worth paying?

Week 11: Grand finale

It's probably gonna be a party!

Readings:

- [1] B. Dicher, Meaning, rules, and proofs (book manuscript in progress)
- [2] M. Dummett, The logical basis of metaphysics (Duckworth, 1991)
- [3] N. Francez, Proof-theoretic semantics (College Publications, 2014)
- [4] D. Prawitz, Natural deduction (Almqvist and Wiksell, 1965)
- [5] G. Restall, Proof theory and philosophy (in progress, available at www.consequently.org)

Other readings will be announced as the seminar progresses.