

# Adjudicating Disagreement about Logic via Logical Functionalism

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## TABLE OF CONTENTS

The Puzzle of Logical Disagreement

Functionalist Analysis: A Sketch of a Program

Logical Functionalism

Adjudicating Logical Disagreement

## THE PUZZLE OF LOGICAL DISAGREEMENT

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This situation puzzles many philosophers, including some philosophers of logic.

After all, one major difference between logic and other areas of philosophy is something like *exactness*: logics are formal theories which we can explicitly prove things about.

How could there be disagreement about whether, for example, modus ponens is valid, or whether the Law of Excluded Middle is a theorem?

## What Logical Disagreement Isn't

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But this does not seem to really resolve any significant disputes.

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- ▶ logic is primarily about inference or implication

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It's certainly *possible* that the various parties in many of the major debates in philosophy of logic over the last 200 years were all confused.

But they took themselves to be arguing with one another and engaging in real disagreement, and if we can vindicate those disagreements we can make real progress in philosophy of logic.

# Adjudicating Disagreement about Logic

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So in order to examine and adjudicate some of these disagreements, we should turn to the tools of conceptual analysis.

## Disagreement and Logical Functionalism

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I'll begin by laying out the basics of a functionalist analysis generally.

I'll then show how we can think of LOGICAL CONSEQUENCE as a functional concept.

Finally, I'll show how once we have logical functionalism in hand we can make progress on analyzing disagreements about logic through this lens, by sorting disagreements into a few different categories.

## FUNCTIONALIST ANALYSIS: A SKETCH OF A PROGRAM

## Functional Analysis

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As David Lewis said when discussing functionalism about PAIN: "I offer not analyses, but a recipe for analyses".

## Functional Roles

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So to take the canonical example, a functionalist analysis of PAIN proceeds by specifying a theoretical role for pain in our inquiry, including in the philosophy of mind, cognitive science and ethics.

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So by offering an analysis of the concept and by looking at the world, we can offer a proper theory of the concept and its bearers.

To take PAIN again: we define a theoretical role, and then look to see which types of things in the world fill that role, thus giving us an overall theory of pain.

## The Canberra Three-Step

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1. Select a concept and determine what evidence is relevant for defining the concept's functional role
2. Collect principles define that concept and which define its functional role
3. Determine what, if anything, fills that functional role



## The Canberra Three-Step: Core Theoretical Principles

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Therefore, we need a way of identifying what those functional roles are.

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The idea is that we can identify a concept with its functional role, and thus we pass the buck analysis-wise to the role.

Therefore, we need a way of identifying what those functional roles are.

To do this, we identify **core theoretical principles** (CTPs) of the concepts, sometimes called “platitudes”, which collectively describe the role of the concept in our inquiry.

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As this may sound trivial on first glance, let's look at a test case where it isn't.

# Analytic Functionalism

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The **analytic functionalists** like Lewis argue that a concept's functional role should be defined in virtue of some folk theory about the concept.

So we draw our CTPs about the concept, e.g. PAIN, from a folk theory (hence the term “platitudes”).

## Theoretical Functionalism

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Opposed to the analytic functionalists about PAIN we have the psychofunctionalists, who argue that the relevant evidence for determining the CTPs of PAIN are our best scientific theories.

I will call the more general camp to which psychofunctionalism belongs **theoretical functionalists**, who argue that the functional role of a concept should be defined in terms of our best scientific theories (including experts' opinions) of the concept.

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We then identify whatever realizes that role with the concept, thus giving us a theory of the concept and its instantiations.

Importantly, functionalist analyzes are easily paired with **multiple realizability theses**, according to which multiple things can realize the role simultaneously.

## LOGICAL FUNCTIONALISM



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## Logical Functionalism: An Example

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B&R take as their starting point a view that logic is fundamentally "unsettled", and cite Tarski as their inspiration:

## Tarski on Logical Consequence

*The concept of logical consequence is one of those whose introduction into the field of strict formal investigation was not a matter of arbitrary decision on the part of this or that investigator; in defining this concept, efforts were made to adhere to the common usage of the language of everyday life. ... With respect to the clarity of its content the common concept of consequence is in no way superior to other concepts of everyday language. Its extension is not sharply bounded and its usage fluctuates. Any attempt to bring into harmony all possible vague, sometimes contradictory, tendencies which are connected with the use of this concept, is certainly doomed to failure. [Tarski 1983, 409]*



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That said, because we must “adhere to the common usage of the language of everyday life” it is not an anything goes pluralism.

As they put it, there are three features which they claim are “central to the tradition, an any account of logic must take account of them”.

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Anything which fulfills these three features (plus their Generalized Tarski Thesis) simply is logic – there is no further bar to meet to count as an instance of LOGICAL CONSEQUENCE.



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The CTPs which they take to define the LOGICAL CONSEQUENCE role are **Necessity**, **Normativity** and **Formality**.

Finally, they argue that at least three things realize this role: classical logic, intuitionistic logic and a relevance logic (FDE).

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He begins with a Hilbertian criterion of existence for mathematical theories: if they are non-trivial (and of some interest to experts), then they exist.

He then argues that given this, and the fact that many of these theories are classically inconsistent, we must adopt a form of logical pluralism.



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Essentially: we look to what mathematicians are interested in and take seriously, and work from there.

My view is that this is essentially akin to a theoretical functionalism about LOGICAL CONSEQUENCE.

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- ▶ Disagreements between analytic and theoretical functionalists
- ▶ Disagreements about what the CTPs of LOGICAL CONSEQUENCE are
- ▶ Disagreements about how to construe individual CTPs

# Adjudicating Logical Disagreement

Now that we've seen sketches of how to give a functionalist analysis of LOGICAL CONSEQUENCE and how they can differ, let's return to examining disagreement through this lens.

I think that many disagreements in logic can boil down to one of the following:

- ▶ Disagreements between analytic and theoretical functionalists
- ▶ Disagreements about what the CTPs of LOGICAL CONSEQUENCE are
- ▶ Disagreements about how to construe individual CTPs
- ▶ Disagreements about which relations realize the functional role

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- ▶ logic is primarily about inference or implication

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Essentially they are engaged in a form of **metaconceptual negotiation**: negotiation about which concept we should employ.

# Thanks!

Now it's your turn to disagree with me.

Thanks!