

Open Texture Concepts and the Concept of LOGICAL CONSEQUENCE

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I'll begin by outlining Friedrich Waismann's under-appreciated idea of **open texture**.

I'll then identify a couple different theses that someone might hold about language and the extent to which it exhibits open texture, and ask which of these Waismann holds.

If we restrain ourselves to just the most famous of Waismann's articles this is a fairly trivial question, but a broader look at his corpus presents some interesting wrinkles.

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I will argue that LOGICAL CONSEQUENCE can also be understood as an open texture concept, along the lines of the above and Waismann's original examples.

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I'll then conclude by contrasting my account of open texture with others, including primarily [Shapiro 2014], who also argues for an open texture thesis in the realm of philosophy of logic.

Waismann on Open Texture

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In this article Waismann is responding to D.M. MacKinnon's attack on empiricist views, including a version of phenomenalism that he takes Waismann to be committed to.

Waismann takes this opportunity to explain how he views the empiricist project, and where he also thinks this version of phenomenalism fails.

Waismann on Open Texture

In the main [the failure of the phenomenalist to translate a material object statement into terms of sense data] is due to a factor which, though it is very important and really quite obvious, has to my knowledge never been noticed – to the 'open texture' [Porosität der Begriffe] of most of our empirical concepts. What I mean is this: Suppose I have to verify a statement such as 'There is a cat next door'; suppose I go over to the next room, open the door, look into it and actually see a cat. Is this enough to prove my statement? [V, 41]

Waismann on Open Texture

Or must I, in addition to it, touch the cat, pat him and induce him to purr? And supposing that I had done all these things, can I then be absolutely certain that my statement was true? Instantly we come up against the well-known battery of sceptical arguments mustered since ancient times. What, for instance, should I say when that creature later on grew to a gigantic size? Or if it showed some queer behaviour usually not to be found with cats, say, if under certain conditions, it could be revived from death whereas normal cats could not? Shall I, in such a case say that a new species has come into being? Or that it was a cat with extraordinary properties? [V, 41]

Waismann on Open Texture

Again, suppose I say 'There is my friend over there'. What if on drawing closer in order to shake hands with him he suddenly disappeared? 'Therefore it was not my friend but some delusion or other'. But suppose a few seconds later I saw him again, could grasp his hand, etc. What then? 'Therefore your friend was nevertheless there and his disappearance was some delusion or other'. But imagine after a while he disappeared again, or seemed to disappear - what shall I say now? [V, 41]

Two Types of Cases Leading to Open Texture

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As he describes them:

[1] An example of the first sort tends to show that we can think of situations in which we couldn't be certain whether something was a cat or some other animal (or a jinni).

[2] An example of the second sort tends to show that we can consider circumstances in which we couldn't be certain whether something was real or a delusion. [V, 41-42]

The Extent of Open Texture: Natural Kinds

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Waismann considers the case of GOLD:

*‘But are there not exact definitions at least in science?’ Let’s see. The notion of gold seems to be defined with absolute precision, say by the spectrum of gold with its characteristic lines. Now what would you say if a substance was discovered that looked like gold, satisfied all the chemical tests for gold, whilst it emitted a new sort of radiation? ‘But such things do not happen.’ Quite so; but they **might** happen, and that is enough to show that we can never exclude altogether the possibility of some unforeseen situation arising in which we shall have to modify our definition.*
[V, 42]

The Open Texture Lesson

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The fact that in many cases, there is no such thing as a conclusive verification is connected with the fact that most of our empirical concepts are not delimited in all possible directions. [V, 42]

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Second, because open texture concepts are not delimited in all directions they cannot be defined with “absolute precision”:

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Second, because open texture concepts are not delimited in all directions they cannot be defined with “absolute precision”:

*Try as we may, no concept is limited in such a way that there is no room for any doubt. We introduce a concept and limit in **some** directions; for instance, we define gold in contrast to some other metals such as alloys. This suffices for our present needs, and we do not probe any farther. We tend to **overlook** the fact that there are always other directions in which the concept has not been defined. And if we did, we could easily imagine conditions which would necessitate new limitations. In short, it is not possible to define a concept like gold with absolute precision, i.e. in such a way that every nook and cranny is blocked against entry of doubt. This is what is meant by the open texture of a concept. [V, 42]*

Open Texture as Distinct from Vagueness

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While a term being open texture is a form of semantic indeterminacy, Waismann wants to be sure to distinguish it from vagueness:

Vagueness should be distinguished from **open texture**. A word which is actually used in a fluctuating way (such as 'heap' or 'pink') is said to be vague; a term like 'gold', though its actual use may not be vague, is non-exhaustive or of an open texture in that we can never fill up all the possible gaps through which a doubt may seep in. Open texture, then is something like **possibility of vagueness**. Vagueness can be remedied by giving more accurate rules, open texture cannot. An alternative way of stating this would be to say that definitions of open terms are **always** corrigible or emendable. [V, 42]

The Origin of Open Texture: Incompleteness

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Waismann argues that open texture stems from another phenomenon he calls **essential incompleteness**:

*But there is a deeper reason for all that, and this consists in what I venture to call the **essential incompleteness** of an empirical description. ... however far I go, I shall never reach a point where my description will be completed: logically speaking, it is always possible to extend the description by adding some detail or other. Every description stretches, as it were, into a horizon of open possibilities. [V, 43-44]*

Completeness and Incompleteness

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We can contrast incompleteness with **completeness**, of which he says here:

*Contrast this case with others in which completeness is attainable. If, in geometry, I describe a triangle, e.g. by giving its three sides, the description is **complete**: nothing can be added to it that is not included in, or at variance with, the data. [V, 44]*

Three Forms of Completeness

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*[1] Contrast this case with the following: I describe a figure by saying, 'It is a white square with a black circle in it' (adding the exact size, position and shade of colour), then I have a **complete** picture, and I know that it is complete. Again, a carpet, viewed as a pattern of colour and shape, may be described completely, and so can a game of chess, in some appropriate notation, or a melody. [MLSL, 95]*

Three Forms of Completeness

[2] Different is the case in which I describe a triangle, say, by giving its three sides: in this case it is **logically impossible** to add anything that is not entailed by, or at variance with them.

[3] Different again is the case in which I describe a dream: my description somehow comes to an end, though not exactly in the way that a description of a triangle or of a melody does; nor is it that I just **stop** as in the case in which I say something about a this building and think 'That will do', nor because it is logically impossible to go on, nor because I know for certain that I have told the complete dream. It's rather that I **try** to remember some point of detail and **fail**. [MLSL, 95]

Completeness, Incompleteness and Open Texture

We can now begin to see how we determine whether a concept or term exhibits open texture according to Waismann:

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*The situation described has a direct bearing on the open texture of concepts. A term is defined when the sort of situation is described in which it is to be used. Suppose for a moment that we were able to describe situations completely without omitting anything (as in chess), then we could produce an exhaustive list of all the circumstances in which the term is to be used so that nothing is left to doubt; in other words, we could construct a **complete definition**, i.e. a thought model which anticipates and settles once for all every possible question of usage. [V, 44]*

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As, in fact, we can never eliminate the possibility of some unforeseen factor emerging, we can never be quite sure that we have included in our definition everything that should be included, and thus the process of defining and refining an idea will go on without ever reaching a final stage. In other words, every definition stretches into an open horizon. Try as we may, the situation will always remain the same: no definition of an empirical term will cover all possibilities. [V, 44]

The Unforeseen and Open Texture

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Nestled in this discussion is a further conclusion about open texture however – that it is these unforeseen possibilities which give rise to open texture.

In particular, this highlights that the open texture of our terms and concepts is not due to our finitude.

The Unforeseen and Open Texture

*Why is it, then, that as a rule, an experiential statement is not verifiable in a conclusive way? [1] Is it because I can never exhaust the description of a material object or of a situation, since I may always add something to it – something that, in principle, can be foreseen? [2] Or is it because something quite new and unforeseen may occur? ... Now the answer to the question is that **both factors** combine to prevent a verification from being conclusive. **But they play a very different part.** It is due to the first factor that, in verifying a statement, we can never finish the job. But it is the second that is responsible for the open texture of our terms which is so characteristic of all factual knowledge. [V, 45]*

Two Routes to the Unforeseen

We turn now to our final distinction between two ways that something unforeseen might occur:

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That again may mean two different things:

- (a) *that I should get acquainted with some totally new experience such as, at present, I cannot even imagine*
- (b) *that some new discovery was made which would affect our whole interpretation of certain facts [V, 46]*

Open Texture: Summing Up

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To sum, Waismann offers an analysis of our terms and concepts which he calls open texture, and which he thinks is fundamental to understanding language, yet underrecognized.

Open texture terms are those which are not precisely defined, and further *cannot* be precisely defined.

Their boundaries are fluid and fluctuating, and can change with the addition of new, unforeseen possibilities and experiences.

Open Texture Theses

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We'll return to this thesis in a bit. For now let's move on to more moderate versions. Waismann begins by giving us examples of empirical concepts and terms.

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So let's call the view that all of our empirical concepts are subject to open texture the **Empirical Open Texture Thesis (Empirical OTT)**.

Waismann and the Empirical OTT

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Open texture is a very fundamental characteristic of most, though not of all, empirical concepts. [V, 43]

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Open texture is a very fundamental characteristic of most, though not of all, empirical concepts. [V, 43]

A nearly identical line is present in the slightly later MLSL in a quote we'll examine later.

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While Waismann doesn't give any example of closed texture empirical concepts it seems clear that in these two articles he thinks there are some.

Let's thus ascribe a slightly weaker open texture thesis to Waismann: the **Moderate Empirical Open Texture Thesis (Moderate Empirical OTT)**, or the view that most, but not all, of our empirical concepts are subject to open texture.

Waismann's Examples of Closed Texture Concepts

That said, Waismann does give us examples of closed texture concepts: those in mathematics and logic:

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That said, Waismann does give us examples of closed texture concepts: those in mathematics and logic:

Open texture, absent in logical and mathematical concepts, is a very important feature of most of our empirical concepts. That the structure of empirical knowledge is so different from that of a priori knowledge may have something to do with difference between open and closed texture. [MLSL, 97]

The Closed Texture of Mathematical Concepts

He gives us a useful contrast case in the original paper as well:

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*To see this more clearly, compare the situation in mathematics: here a theorem, say Goldbach's hypothesis, may be undecidable as we cannot go through all the integers in order to try it out. But this in no way detracts from the **closed** texture of the mathematical concepts. If there was no such thing as the (always present) possibility of the emergence of something new, there could be nothing like the open texture of concepts; and if there was no such thing as the open texture of concepts, verification would be incomplete only in the sense that it could never be finished (just as in the case of Goldbach). [V, 45]*

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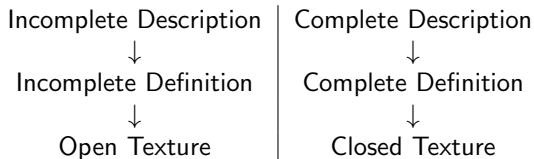
*Incompleteness, in the senses referred to, is the mark of empirical knowledge as opposed to a priori knowledge such as mathematics. In fact, it is the criterion by which we can distinguish perfectly **formalized** languages constructed by logicians from **natural** languages as used in describing reality. In a formalized system the use of each symbol is governed by a definite finite number of rules, and further, all the rules of inference and procedure are stated completely. [V, 51]*

Open Texture: A How-To Guide

Putting everything together, we get something like this:

Open Texture: A How-To Guide

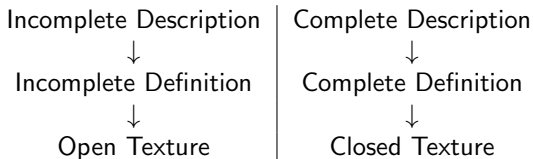
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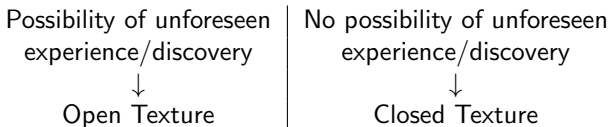
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Open Texture: A How-To Guide

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Waismann's Formal CTT

It's for this reason that most commentators ascribe what we can call the **Formal Closed Texture Thesis (Formal CTT)** to Waismann: all formal concepts exhibit closed, rather than open texture.

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It's for this reason that most commentators ascribe what we can call the **Formal Closed Texture Thesis (Formal CTT)** to Waismann: all formal concepts exhibit closed, rather than open texture.

But there is some underappreciated evidence which we should examine before moving on to whether Waismann should have – or whether we should – adopt Formal CTT.

Waismann's *TPLP*

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This book was originally Waismann's attempts at providing an introduction to the philosophical method developed by Wittgenstein and his followers, and was even at one point considered a joint project between the two.

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After a falling out however the book became more of Waismann's work than Wittgenstein's, but one he would never finish.

He withdrew the manuscript just before publication and continuously worked on it until his death, including incorporating many references to much later work including Wittgenstein's *Philosophical Investigations* in 1953.

Waismann's *TPLP*

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That said, there are clear allusions (as we will see) to *PI* in chapters which we can quote from, which at least tentatively suggests this may be significantly later work than either “Verifiability” or “Language Strata”.

TPLP and Open Texture

Curiously, Waismann nowhere in the book refers to “open texture” as such, although he clearly makes remarks about the phenomenon and even uses language nearly identical to that found in the two papers quoted earlier.

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Curiously, Waismann nowhere in the book refers to “open texture” as such, although he clearly makes remarks about the phenomenon and even uses language nearly identical to that found in the two papers quoted earlier.

It's possible that this indicates that the book is an earlier work before the coining of the term, or alternatively, that in the context of a textbook he felt it was preferable to avoid using technical terms along these lines.

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*Try as we may, no concept is outlined in such a way that there is no room for any doubt. We introduce a concept and limit in **some** directions; we say for example 'This is gold' in contrast to silver, platinum, etc. This suffices for most practical purposes, and we do not probe any farther. We **forget** that there are other directions in which we have not limited our concept. And if we did, we could imagine hundreds of new situations which would necessitate new limitations. [TPLP 223]*

TPLP and Open Texture

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*Are our concepts therefore incomplete, inexact? But what then would be an exact concept? One which anticipated all cases of doubt, one which is outlined with such precision that every nook and cranny is blocked against entry of doubt? But then we have to own, that **no** concept satisfies this demand; and we being to see that there is something utopian in the demand for absolute precision. A concept is good if it fulfils the purpose for which it has been devised. [TPLP, 223]*

TPLP and Open Texture

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Even more telling are earlier discussions which recall Wittgenstein's discussion of games in *PI*:

But even if we assumed that we had found a definition to which such objections did not apply; what would be thereby achieved? Are we sure that our definition would apply for ever? Might it not happen that a new sort of activity would arise which everyone called a game, but which did not fall under our definition? What then? Shall we say this activity cannot be called a game? Or shall we say such a thing could never occur? But how can we be certain of this? [TPLP, 180]

TPLP and Open Texture

Further:

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*[The concept of a game] **has** no sharp boundaries. Incidentally, it is precisely through leaving the boundary open that the word 'game' attains a flexibility and suppleness and adaptability of use which it would never have if we limited its use with a rigid definition. There is thus also some good in **leaving** the boundaries open. [TPLP, 182]*

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TPLP and Open Texture

And in a set of interesting passages he applies this directly to mathematical concepts:

*Many other words resemble 'game' and 'try' in these respects; even many which at first glance seem to have an exact meaning. Let us try to illustrate this by examining the concept of 'number'. 'Cardinal number', 'integer', 'rational number'; each of these expresses a sharply defined concept, because each is defined by means of a calculus. Suppose, however, we ask what is meant by 'number'; we can do no more than say the concept of number embraces all the types of number mentioned and all others resembling them in certain respects (leaving open in what respects). If it is suggested that in mathematics all concepts must be sharply and clearly defined, we can only point out that the mathematician does not require a general concept of number. The word 'number' used in this general way occurs in meditations about mathematics, but not **in** any proposition of mathematics. [TPLP, 185]*

TPLP and Open Texture

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I could, of course, define the term 'number' exactly by saying that only those structures which are designed today as numbers should fall under this concept. But in this case we could not say of any construction that it is a construction of a new kind of number; what would be the point of such an arbitrary demarcation? [TPLP, 186]

TPLP and Open Texture

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The questions 'What is a number?', 'What is a point?' are similar to the questions 'What is arithmetic?', 'What is geometry?'. The elementary arithmetic of cardinal numbers would not, for example, be complete without multiplication. We might speak here of a sharply bounded concept. On the other hand, the idea of arithmetic in general is essentially 'open'. Exactly what belongs to arithmetic has not been fixed. Its concept, as well as that of a calculus, is fluctuating. [TPLP, 186]

Waismann's Open Texture Thesis

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At the very least we get a weaker but still interesting thesis, the **Moderate Formal Open Texture Thesis (Moderate Formal OTT)**, i.e. that some formal concepts exhibit open texture.

Whether this is Waismann's settled view cannot be determined without analyzing the actual notes directly and comparing dates of manuscripts, but this is the view of at least a time-slice of Waismann, one distinct from the Waismann most commonly found in these discussions.

LOGICAL CONSEQUENCE as an Open Texture Concept

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We now turn to more contemporary matters and ask: *should* Waismann have – or should we – accept the Moderate Formal OTT?

More specifically for today: should we accept that the concept of logical consequence could be subject to open texture?

What reasons do we have for thinking LOGICAL CONSEQUENCE is either an open texture or closed texture concept?

Tarski on LOGICAL CONSEQUENCE

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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]

Waismann and Tarski

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So can we make sense of Tarski's remark by interpreting LOGICAL CONSEQUENCE as an open texture concept?

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In his “Are There Alternative Logics?” (1946) Waismann notes:

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Tarski clearly has a connection between LOGICAL CONSEQUENCE and natural language. What of Waismann?

In his “Are There Alternative Logics?” (1946) Waismann notes:

It seems to me that the laws of such a “natural logic”, even if they are intuitively evident, can still be apprehended in various ways; and moreover, that they are essentially moulded on the means of expression and the grammatical structure of existing language. [ATAL, 78]

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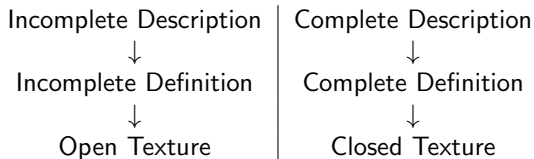
It is then like this: the use of such an expression is not yet precisely determined by everyday speech. The use of language leaves open certain gaps. We may fill these gaps in different ways, e.g., by assimilating the case of the proposition to that of a promise, and so deviating from the laws of logic; or again, by clinging to the laws of logic and thus departing from ordinary usage. But these two tendencies cannot be combined. Here one might speak of a conflict of the motives that might guide us in extending our language. [ATAL, 83]

Incomplete Definitions and Unforeseen Possibilities

To recall, we highlighted the following paths to open/closed texture:

Incomplete Definitions and Unforeseen Possibilities

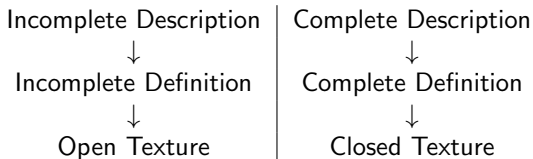
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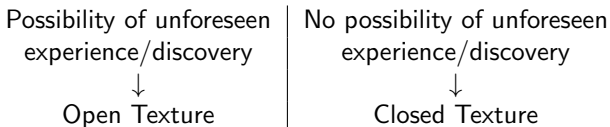
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- ▶ new discoveries which affect our interpretation of certain facts

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Do either hold of LOGICAL CONSEQUENCE?

New Experiences in Logic

While there are probably not new “experiences” relevant to LOGICAL CONSEQUENCE, there are certainly new activities (to recall the quote from *TPLP*).

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While Waismann was aware of some non-classical logics, specifically intuitionistic logic and some of the non-classical logics from the Lww-Warsaw school, there are new logics that would likely surprise him, akin to new games which require extension of our concept GAME.

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Or alternatively, consider paraconsistent logics, which allow for inconsistent premises without collapsing into triviality.

Finally, consider the Buenos Aires Plan, which involves thinking about metainferences or inferences between inferences, which allow you to characterize logics at a more general level (e.g. logics which behave non-classically at the level of inferences but classically at the metainferential levels).

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These examples also would likely count as new discoveries which affect our interpretation of the known facts about LOGICAL CONSEQUENCE.

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For example, the development of non-trivial paraconsistent logics was a surprising development which led to reinterpretations of the role of truth-preservation in LOGICAL CONSEQUENCE, towards something like designated-value-preservation.

Similarly, developments in substructural logics and metainferential logics allow us to reinterpret logics we are familiar with in new, more fine-grained ways.

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Like other concepts (e.g. GOLD or NUMBER) its boundaries can fluctuate, including new things given new discoveries.

And this is exactly what Tarski noted in his famous remarks.

Shapiro's Open Texture View of Logic

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As he puts it:

The present contention is that the notion of open-texture, or something closely related to it, applies to the logical terminology in question or, perhaps better, to the locution "has the same meaning." [Shapiro 2014, 144]

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But whereas his contention is that perhaps concepts like CONJUNCTION or SAME MEANING exhibit open texture, mine is that the more fundamental concept of LOGICAL CONSEQUENCE is open texture.

Ultimately these two views are not in conflict, and one may adopt both (and if I am right, it likely leads to an open texture view of the terminology like Shapiro wants).

Conclusion

In this talk I hope to have shown that we have good reason to extend Waismann's analysis of open texture concepts to the concept of logical consequence.

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In this talk I hope to have shown that we have good reason to extend Waismann's analysis of open texture concepts to the concept of logical consequence.

Along the way, I examined Waismann's analysis across several sources, and what type of open texture thesis we can attribute to him.

While we cannot conclusively say that Waismann's fully developed view would allow for LOGICAL CONSEQUENCE to be an open texture concept, I showed that at least according to one time slice this is possible, if not likely.