

MUST DO “MUST DO BETTER” BETTER

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WILLIAMSON’S METHODOLOGICAL TRAJECTORY

2006 “Must Do Better” (MDB)¹

2007 *The Philosophy of Philosophy* (TPOP)

2013 *Modal Logic as Metaphysics* (MLM)

2020 *Suppose and Tell* (ST)

2024 *Overfitting and Heuristics in Philosophy* (OHIP)

THREE POINTS TO APPRECIATE

QUESTIONS CAN HAVE VALUE, EVEN WHEN WE DON’T KNOW HOW TO ANSWER THEM

Much of the progress made since the Presocratics consists in the development of good methods for bringing evidence to bear on questions that, when first asked, appear hopelessly elusive or naive. Typically, of course, making progress also involves refining and clarifying the initial question: but the relevant refinements and clarifications cannot all be foreseen at the beginning; they emerge in the process of attempting to answer the original rough question, and would not emerge otherwise. [MDB, p. 177]

TW’s methodology isn’t verificationist. We need not be able to specify in advance which questions may be answered. Our capacity to answer questions may well grow, as we struggle to make sense of things.

SEMANTIC SELF-CONSCIOUSNESS CAN HELP: Just as astronomers can do better research when they know how their telescopes work, so too, *some reflection on the concepts we employ* cannot go astray.

Philosophers who refuse to bother about semantics, on the grounds that they want to study the non-linguistic world, not our talk about that world, resemble astronomers who refuse to bother about the theory of telescopes, on the grounds that they want to study the stars, not our observation of them. Such an attitude may be good enough for amateurs; applied to more advanced inquiries, it produces crude errors. Those metaphysicians who ignore language in order not to project it on to the world are the very ones most likely to fall into just that fallacy, because the validity of their reasoning depends on unexamined assumptions about the structure of the language in which they reason. [MDB, p. 182]

There is no need to *start* examining concepts or words before we use them to reflect on the world as it is. However, philosophy of language is a useful aid to philosophical reflection.

PHILOSOPHY CONNECTS TO OTHER DISCIPLINES: TW argued that the recent debate over realism and anti-realism was sorely in need of discipline by attending to compositional semantics. Workers in this area made proposals concerning what our claims *mean* (in terms of truth conditions, assertibility conditions, etc.) while ignoring semanticists and linguists working on the very same issue. For TW, connection to other disciplines (“mathematics, physics, biology,

psychology, history, etc.” [MDB, p. 182]) plays a vital role in informing and disciplining theory development and testing the claims we make.

WILLIAMSON ON DUMMETT IN “MUST DO BETTER”

...we need far more reflectiveness about how philosophical debates are to be subjected to enough constraints to be worth conducting. For example, Dummettian anti-realism about the past involved, remarkably, the abandonment of two of the main constraints on much philosophical activity. In rejecting instances of the law of excluded middle concerning past times, such as ‘Either a mammoth stood on this spot a hundred thousand years ago or no mammoth stood on this spot a hundred thousand years ago’, the anti-realist rejected both common sense and classical logic. Neither constraint is methodologically sacrosanct; both can intelligibly be challenged, even together. But when participants in a debate are allowed to throw out both simultaneously, methodological alarm bells should ring: it is at least not obvious that enough constraints are left to frame a fruitful debate. Yet such qualms surfaced remarkably little. [MDB, p. 186].

COMMON SENSE: Does this play any special epistemic or justificatory role, other than indicating the burden of proof in a given disagreement?

Maybe the “constraint” arises due out of common sense having some special epistemic status, or default justification. If so, TW does not explicitly defend such claims on common sense’s behalf in MDB. (TW makes fewer appeals to common sense in his more developed methodology after 2006.)

CLASSICAL LOGIC: TW appeals to “classical logic” and “the law of the excluded middle” without pausing to unpack what this means. These are shorthand for more involved commitments.

Consider this parallel: the introduction of *order types* by Georg Cantor in the late 19th Century. This is the shape of a special kind of *ordering*. The familiar natural numbers 1, 2, 3,... can be understood as representing *ordering* things:

1 •
2 ••
3 •••
4 ••••
5 •••••

Addition of ordinals is concatenation.

2+3 •••••

Cantor saw that we can continue this past the finite numbers.

ω •••••••••• ...

Consider $1+\omega$:

$1+\omega$ •••••••••• ...

So, $1+\omega = \omega$. On the other hand, $\omega+1$ is:

$\omega+1$ •••••••••• ... •

¹ “Must Do Better” was presented at the 2004 *Truth and Realism* conference, at Arché, organised by Patrick Greenough.

This has a different shape than ω (it has an *end*, while ω doesn't), and so, Cantor was convinced that $\omega + 1$ is not $1 + \omega$.

So, addition of ordinals is not *commutative*: $x + y$ does not always equal $y + x$. Now, imagine a 19th Century response to this radical revision of the usual laws of arithmetic:

In rejecting instances of the commutativity of addition concerning order types, such as ' $1 + \omega = \omega + 1$ ', Cantor rejects both common sense and the laws of arithmetic. Neither constraint is methodologically sacrosanct; both can intelligibly be challenged, even together. But when mathematicians are allowed to throw out both simultaneously, methodological alarm bells should ring.

Cantor should *not* feel at all worried by this talking-to.

This is not to say that TW's response to the anti-realist is similarly toothless, but the appeal to classical logic must be developed further by spelling out some *detail*.

One way to continue the discussion: for the anti-realist to spell out what they mean about *or* and *not*, explaining how the law of the excluded middle might fail. (*Dummett does this*.)

Another way: For TW to elaborate why they take the relevant instance of the law of the excluded middle to be *true*, beyond an appeal to authority or to tradition.

A time-honoured method: offer a *proof* of the law of the excluded middle, if the principle is not simply treated as axiomatic. Here is one.²

The anti-realist is invited to inspect the proof to explain at which point they demur, so the disagreement can be clarified.

(The parallel with Cantor: the traditionalist can offer a

proof of $\forall x \forall y (x + y = y + x)$ in, say, Peano Arithmetic,³ and then the Cantorian can respond with an explanation of where that proof fails when we take the statement to apply to infinite order types. Clarity is found quickly: the point of failure is the induction scheme $(\phi(0) \wedge \forall x (\phi(x) \rightarrow \phi(x')))) \rightarrow \forall x \phi(x)$, which fails when we are reasoning about both finite and infinite quantities.⁴ The site of the disagreement over addition is made more specific, and remaining points of agreement are found.)

This is not TW's approach. For him, the epistemic power of logic is not to be found in individual proofs.

For TW, disagreement over logical principles, such as the law of the excluded middle, is resolved only in the choice of one logical theory over another, and the for this theory choice are *abductive*, "all things considered" arguments, of a piece with the justification of scientific theories.

LOGIC, GENERALITY AND LOGICAL TRUTH

The study of modal logic takes many legitimate forms. It is pursued within both mathematics and computer science, for example. It is also pursued within philosophy. In this book it has taken the form of a metaphysical enquiry. We fixed interpretations of the modal operators, as expressing metaphysical possibility and necessity, and of the quantifiers, as unrestricted, in accord with the ambitions of metaphysics. Modal logic in this form aims to discover which generalizations in such terms are true. The true generalizations constitute a quantified modal logic, but we do not know ahead of enquiry which one. At least in this area of philosophical logic, our task is not to justify principles that already play a fundamental role in our thinking. Rather, it is in a scientific spirit to build and test theories that codify putatively true generalizations of the sort at issue, to find out which are true. Those theories are not about our language or thought, or any other actual or possible creatures' language or thought, except incidentally, since they are about everything whatsoever. Like mathematics, the enterprise is part of science but not specifically of natural science. [MLM, *Methodological Afterword*, p. 423]

We use any technique we like to come to true generalisations that can be stated in a logical vocabulary. So, it is *logically true* that there are at least three things. The generalisation $\exists x \exists y \exists z (x \neq y \wedge x \neq z \wedge y \neq z)$ is *true* (pick any three things you know are distinct) and the statement is already completely general: it contains no non-logical vocabulary.

(TW's account of logic is *non-classical*, in that he endorses a non-standard *extension* of classical logic.)

On TW's account of logic, there is no promise that logical truths play any significant *epistemic* role other than that is given by their generality.

TW's extended argument for his favoured necessitist modal logic (in which $\Diamond \exists x Fx$ implies $\exists x \Diamond Fx$, and where $\Box \forall x \Box \exists y (y = x)$ is valid, and in which the \exists -quantifier understood to have existential import, as well as the extra-classical logical principles stating the existence of any finite number of objects) are *abductive* arguments that aim to show that the logical theory is the best fit with all the available evidence.

This argument depends on controversial assumptions: in particular the conception of logic as no more and no less than the true generalisations in the logical vocabulary (which is, as explained above, as departure from classical logic), and that

² The diagram in this paragraph is a natural deduction proof of $p \vee \neg p$ in a system of *natural deduction with alternatives* (Restall 2023). Slashing a formula represents *denial*, brackets (marked with superscripts) represent the discharging of assumptions (paired with the point in the reasoning where those assumptions are discharged) and the sharp sign "#" is used when we reach a contradiction. A committed *Dummettian* anti-realist rejects the proof only at its final step. They should concede that it is inconsistent to *deny* $p \vee \neg p$, but that this—by their lights—does not give us reason to *grant* it.

³ Peano Arithmetic is a standard axiomatic presentation of the behaviour of addition and multiplication for natural (finite) numbers, in terms of the basic notions of 0 (zero) and the idea that each number x has a *successor* x' (which will turn out to be $x + 1$, where 1 is, naturally, $0'$, the successor of zero). The relevant principles are: for successor, $x' = y' \rightarrow x = y$; $x' \neq 0$; for addition: $x + 0 = x$; $x + y' = (x + y)$; for multiplication: $x \times 0 = 0$; $x \times y' = (x \times y) + x$; and a principle of induction: $(\phi(0) \wedge \forall x (\phi(x) \rightarrow \phi(x'))) \rightarrow \forall x \phi(x)$.

⁴ Let $\phi(x)$ be $x \neq \omega$: $0 \neq \omega$ and if $x \neq \omega$ then $x' \neq \omega$ too. (In fact, $x' \neq \omega$ for any x at all: x' , being a successor, has an endpoint, while ω does not.) If the induction scheme held, it would follow that no order type is ω : infinite order types would be ruled out.

the quantifier with existential import must be understood as totally unrestricted.

This obscures the disagreement between TW's necessitist and the *possibilist* who takes it that we can employ a wider quantifier ranging over not merely those objects that exist but also merely possible objects, that do not exist but could have.

One cost of an abductive "all things considered" methodology for theory choice—especially theory choice in something as fundamental as *logic*—is that we can never take in *all things*, and whenever we try to take in *many things*, any perspective we take is bound to be idiosyncratic, riddled with unarticulated assumptions and will generalise to others only to the extent that they either share our idiosyncratic perspective, or defer to our judgement.

It is hard to sustain TW's stated methodological standards of clarity, rigour and precision when mounting an abductive argument for one theory over its rivals.

COMMON SENSE & HEURISTICS

Appeals to common sense have receded from prominence in TW's more recent work.

In ST and OHIP, he has contemporary proponents of *hyperintensionality* in his sights.⁵

An *intensional* approach to meaning identifies a proposition up to necessary equivalence. If p and q are true in the same possible worlds—if it is *impossible* for p and q to differ in truth value—then the proposition *that* p and the proposition *that* q are the same proposition. A *hyperintensional* account of propositions allows for distinctions between necessarily equivalent propositions. TW rejects hyperintensional semantics, in favour of intensional semantics.

This has many putative counterexamples: A single example will suffice.

If I trisect an angle with ruler and compass, I would become famous.

If I trisect an angle with ruler and compass, I would *not* become famous.

It's plausible that at most *one* of these sentences can be true. However, the antecedent is not only false, it is *impossible*.

For an intensionalist, *I trisect an angle with ruler and compass* is true in no possible worlds, so it is the same proposition as *I become famous and $2+2=5$* (true nowhere) and as *I do not become famous and $2+2=5$* (also true nowhere). If any conditionals with impossible antecedents are true at all, then

If I become famous and $2+2=5$, I would become famous.

If I do not become famous and $2+2=5$, I would *not* become famous.

are as good candidates as any for being true, since, the consequent merely restates part of the antecedent.

The propositions in the antecedent are inconsistent, so by *intensionalist* lights, we should give the same verdicts to our original conditionals.

So, on TW's favoured analysis of conditional sentences, *both* of the original conditionals turn out to be *true*, and this follows directly from his intentionalist commitments.

TW acknowledges that his view clashes with common sense, and so, he offers a diagnosis of the divergence, by way of *heuristics*.

To judge *if* p *then* q , we *suppose* p , and then ask ourselves whether or not q , under the scope of this supposition. The verdict we give to q under the scope of the supposition that p is then the answer we give to *if* p *then* q .

He then argues that this heuristic is not only sometimes *mistaken*, but it is necessarily so.⁶ It is an *inconsistent* heuristic, and this inconsistency explains how the deliverances of common sense can lead us astray.

This appeal to heuristics is a critical development in TW's methodology. Since I do not have the expertise to assess the empirical claims concerning the many different belief-forming heuristics, I will pass over these in silence, and move to what I take to be firmer ground, the role of semantics.

ON SEMANTICS AND ITS SIGNIFICANCE

In OHIP, TW gives an extended argument against hyperintensional approaches to meaning.

PHASE 1. *Intensional* distinctions between propositions are theoretically justified.

TW's celebrated arguments concerning the failure of *luminosity* involve the theoretical apparatus of *epistemic logic*.

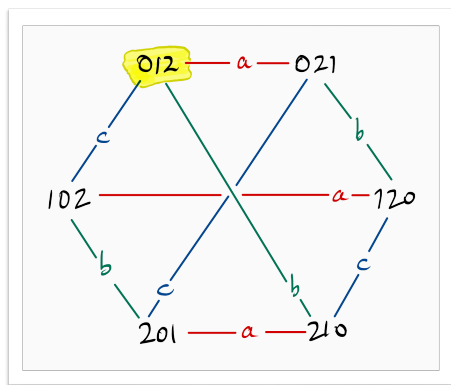
EXAMPLE: Anne, Bill, and Cath have each drawn one card from a stack of three cards 0, 1, and 2. This is common knowledge among the three of them. Anne has drawn card 0, Bill card 1, and Cath card 2, but this is not common knowledge.

The diagram depicts the six possible outcomes, where a triple like 012 indicates the cards in the hands of Anne, Bill and Cath respectively.

Anne, Bill and Cath are *in* outcome 012.

⁵ To be more specific, TW has *some* contemporary proponents of hyperintensionality in his sights. His prime targets are defenders of impossible worlds semantics, truthmaker semantics, and Russellian propositions. Others who defend hyperintensional distinctions in theories of meaning, more consonant with a standard compositional semantics for natural language than the non-classical and revisionary approaches of impossible worlds and truthmakers, (e.g., Cresswell 1974; Fox and Lappin 2005; Moschovakis 2006; Muskens 2005; Tichý 1968, 1971, 1988) are absent from view, though it appears that TW takes his critical arguments to apply to hyperintensional semantics more generally.

⁶ Here is a quick way to demonstrate the inconsistency. Consider the conditional *if* $p \wedge \neg p$ *then* p . We can suppose $p \wedge \neg p$ and then judge p to be true (since we supposed $p \wedge \neg p$, the first conjunct p follows). So, the heuristic tells us that *if* $p \wedge \neg p$ *then* p is *true*. But parallel reasoning shows that under the supposition $p \wedge \neg p$, the consequent p is *not* true, given the second conjunct. So, we can equally conclude that the conditional is *not true*. So, we have inconsistent verdicts on the conditional. There is no inconsistency in supposing something self-contradictory (we do that in *reductio* reasoning, with no ill effects). However, the heuristic lifts inconsistency at the level of *supposition* to inconsistency of judgements concerning conditionals. Since the heuristic leads to inconsistent results, it cannot be universally applied.



Anne doesn't have enough information to tell 012 apart from 021. Bill cannot distinguish 012 from 210, and Cath cannot distinguish 012 from 102. (cf. the lines.)

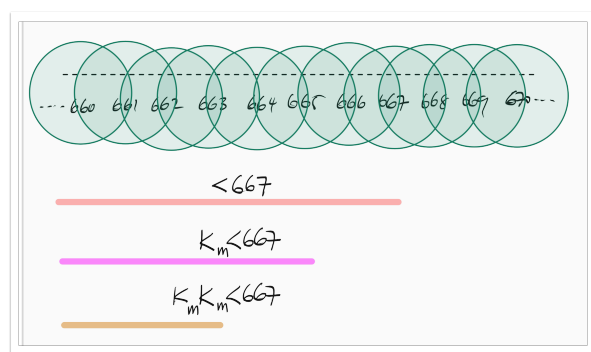
In scenario 012 Anne has the information that she has a 0 in her hand. Since Anne *can't* tell between 012 and

021, even though it's true that Bill holds the 1, Anne doesn't have *that* information.

We can evaluate more complex claims such as: *Anne has the information that if Bill holds the 1 then Cath has the information that Cath holds the 2.*

These models apply to cases of *perceptual indiscriminability*. Mr Magoo (M) is looking out his window at a tree (T). T happens to be 666 inches tall, but M's eyesight, though *good*, is not perfect. There is a margin for error. If T is n inches tall, he cannot distinguish this from T's height being between $n - 1$ and $n + 1$ inches. [KAIL, p. 114ff]

We can depict the situation like this:



The lines below the diagram represent these claims.

< 667 : T is shorter than 667".

$K_m < 667$: M is in a position to *know* that T is shorter than 667".

$K_m K_m < 667$: M is in a position to *know* that he is in a position to know that T is shorter than 667".

If T is 665.5", then $K_m < 667$ can be *true*, but it is not *safely* true. So we can have $K_m < 667$ true but $K_m K_m < 667$ false.

These states are not *possible worlds* in the metaphysicians sense. However, they motivate the *intensionalist* account of propositions.

That is **PHASE 1**, the background of the argument. **PHASE 2**. Extant *hyperintensional* accounts of propositions are not as productive. They *overfit*. They are too flexible to provide any theoretical or practical constraints.

Further, hyperintensional proposals—especially *impossible worlds* accounts, and *truthmaker* semantics—are ill-motivated and disconnected from the research in formal semantics.⁷

PHASE 3. *Heuristics* are useful in explaining why we are deceived by appearances, to think there are many situations where we know that p and do not know that q , despite the necessary equivalence of p with q .

PHASE 4. Heuristics don't deal with every problem. Appealing to *guises* suffices to patch remaining difficulties.

I will not comment on the appeal to heuristics for belief ascription in **PHASE 3**, and though I am much more sympathetic to accounts of *impossible worlds* and *truthmakers* than TW, I won't respond to **PHASE 2**.

On **PHASE 1**, these models are theoretically productive, but they give us no strong argument for *intentionalism*. They provide a plausible account of *the information available to an agent* (my reading), and are less plausible as a model of *what an agent knows* (TW's).

Modelling propositions as sets of worlds is useful, but not the be-all and end-all for a theory of meaning. Here are von Fintel and Heim, in a textbook on intensional semantics:

Just like [Heim and Kratzer], we make no claim that the semantic values that are attributed to expressions in our framework fully capture what is informally meant by "meaning". But certainly, intensions come closer to "meaning" than extensions. [IS, p. 11]

Intensionalist accounts of the content of knowledge ascriptions have their costs:

Consider *sudoku puzzles*: If you know the rules, and know the positions of each number, then, for TW, you already know the value of every square on the grid.

The square in row 2, column 2 must contain a 6 is already known when you look at the board and come to know the current position, since that sentence is true in *all* of the possible worlds with this sudoku setup.⁸

However, this fact is *not present* to the solver until the solver, even though it is *available to be known*.⁹

			2		1 6
		4		5	
1		5			9
6					3
	9	7			4
4					8
	1		3		9
		8			
2	4		6		8

TW's reply uses *guises*. Although you already know that *the square in row 2, column 2 must contain a 6*, you do not know that proposition under the guise of the sentence "*the square in row 2, column 2 must contain a 6.*"

This gives us no way to talk about knowledge and ignorance shared among members of different linguistic communities.

What goes for Sudoku puzzles goes for the entire area of pure mathematics: anyone who knows that $2 + 2 = 4$ also knows *every*

⁷ OHIP also contains a chapter criticising *Russellian* accounts of propositions. I do not have the time or space to consider those arguments here.

⁸ If the solver doesn't know that the board is well-posed, then *either the board is not well posed or the square in row 2 column 2 must contain a 6* is known, for TW.

⁹ This puzzle is from Zach Gage and Jack Schlesinger's app *Good Sudoku* <<https://playgoodsudoku.com/>>. It's rated Expert.

necessarily true proposition. For TW, there is only one necessarily true proposition.

TW's response to the fact that mathematicians *say* they do not yet know whether *every even number greater than 2 is the sum of two prime numbers* is to offer a reinterpretation in terms of guises. Our knowledge of mathematics amounts only to our knowledge of our words.

TW takes it that traditional compositional semantics *demand*s this intensionalist conclusion. This is too swift.

Compositional semantics contains within itself the seeds of an answer. There is a difference between *semantic value*—the result $\llbracket S \rrbracket$ of interpreting an item *S* in the language—and the *process* of finding that result.

An analogy might help: $2 + 2 = 4$. However, not all questions concerning $2 + 2$ are the same as questions concerning 4. *Showing that $2 + 2 = 4$* is not the same as *showing that $4 = 4$* . (If it were, mathematics education would be much simpler.¹⁰) *Showing that $2 + 2 = 4$* involves mathematical *processing*.

However, mathematical processing is not best understood as a *guise*: someone who is not competent in Arabic numerals or decimal notation could *equally* show that $2 + 2$ is 4. All you need is an understanding of the numbers *two* and *four*, the concept of *addition* and the notion of numerical *equality* or *identity*. These can be represented in many different ways.

If such considerations hold for *showing*, why should *knowing* be any different?

TW takes the interpretation of linguistic expressions to proceed like the evaluation of *mathematical* expressions. Each part of speech has a semantic value and the meaning of an expression is composed out of the meanings of its parts.

The semantic value of a *sentence* will, on this account, be a *proposition*: $\llbracket p \rrbracket$, a function assigning to each possible world a truth value: *true* or *false*.¹¹

The semantics will deliver that function *in a particular way*, by describing a *rule*.

We can present a function from worlds to truth values by simply assigning the value *true* to each world, or we can first divide the worlds into the *p* worlds (and assign them the value *true*) and then the $\neg p$ worlds (and assign *them* the value *true*, too). These are different processes to get to the same result.

The difference between *process* (or *algorithm*) and *result*, isn't new. The idea is present in Frege's motivation of *sense* as a mode of presentation of a *referent*.

It is also well known that different algorithms (with different properties) can be used to compute the same function.

In the same way, you can say *that* $p \vee \neg p$ in any language with disjunction, negation and a way to express *p*, but if your language doesn't express those concepts you might be able to express a proposition that is true in the same set of possible worlds (another necessarily true proposition), but you will not have expressed that proposition-as-set-of-worlds in *this way*.

This isn't a matter of guise, but an identification of content up to process.¹² Nothing in what we have said requires any modification of traditional compositional semantics.

Intensional semantics contains within itself the seeds of its own hyperintensional extension: I come to this conclusion because I have begun to learn the methodological lessons taught by Nuel Belnap:

Semantics presupposes grammar. There are nevertheless "pure theories" of values ... and meanings ... that are unencumbered by grammar, and that are in this sense properly *pre-semantic* rather than "semantic" in the strict sense ... [P]re-semantics helps us become clear that some of the deepest semantic ideas are quite independent of notational systems (grammars) ... in the tolerant spirit of Carnap, we believe that one is likely to want a variety of complementary (noncompeting) pre-semantic analyses—and most especially, a variety of pre-semantic treatments of one and the same "language." One does not have to "believe in alternative logics" to repudiate the sort of absolutism that comes not from logic itself, but from narrow-gauge metaphysics or epistemology. [UCL, p. 1]

Any selection of a framework for semantic values should be as modest as is required to make sense of our talk, but capacious enough to draw the distinctions we need. Sticking to propositions-as-sets-of-worlds gives away too much unless we stay close to the phenomena to which it's best suited.

We can see functions as processes, when, and only when, it seems fruitful to do so. This allows us to keep the benefits of existing compositional semantics, but helps us do justice to the difference between (a) the information that is available to an agent in an environment, and (b) the process by which an agent might come to access, to act on, and to express that information.

This pre-semantic perspective is motivated by sound methodological considerations, and has preexisting models in good theoretical practice in neighbouring disciplines, such as linguistics, mathematics and theoretical computer science. What's not to love?

¹⁰ This example shows, again, that relativising knowledge to *linguistic guises* does not give an adequate account of shared mathematical knowledge. Two different people can both know that $2 + 2 = 4$ (and fail to know other more complicated mathematical claims) without sharing a guise under which they know that. Linguistic guises cut altogether too finely to individuate shared mathematical knowledge across linguistic difference. Falling back to knowledge-under-a-guise to deal with failure to know some necessary truths seems like a case of *overfitting*, for there are many more linguistic guises than are needed. People with different representational systems can share the same specific arithmetical capacity and the same arithmetical *knowledge*, even though they share no languages in which this capacity is represented.

¹¹ Perhaps the function takes in other features, such as a time index, and other contextually fixed features of the context of utterance, perhaps it does not. Whether these are included or not in the semantic value of a declarative sentence is not important for the discussion at hand.

¹² Notice, too, that identifying meaning up to the level of *process* (however that is to be cached out) seems to do better justice to the constraints involved in translation from one language to another than constraining translation by mere agreement of propositions, understood as a set of worlds. If we think that translation from one language to another should be constrained by *what is said*, then looking at identity/similarity of *process* — at some level — is a much better guide to translation than mere coarse agreement of proposition as identified by sets of possible worlds.

WHAT IS PHILOSOPHY? WHAT COULD IT BE?

I started with appreciation for broad strokes in TW's methodology. We part company at in the detail.

To resort to an *abductive* methodology or epistemology when it comes to *logic* is as surprising and alien as thinking that an abductive all-things-considered justification is either wanted or needed for *arithmetic*.

Local, piecemeal interventions—whether articulating basic theory of infinite order types; spelling out a proof of an instance of the law of the excluded middle in terms of separable basic rules for the connectives, and structural rules of deduction; or constructing simple models of epistemic logic—can play an important role in giving us new *capacities*, for understanding and explaining the judgements we have, and for giving us the capacity to form new thoughts.

As TW describes philosophical logic, it is concerned with *truth*, and with formulating the most general truths in a given vocabulary. This isn't wrong, but it isn't all there is to say: Philosophy on this view is not, fundamentally, a *critical* enterprise, and neither is it particularly *creative*. The language and conceptual framework is treated as *given*.

If philosophy is the attempt to *understand*—our world, our place in it, and more—then maybe some of our existing concepts are unhelpful, and new concepts are required.¹³

The best applications of formal techniques to philosophical questions give *insight*. To put something under a particular *form* is to help us *see*. This is not just a descriptive exercise concerning general truths in some antecedently given vocabulary. It's a way to expand our capacities.

According to Christoph Schuringa's *Social History of Analytic Philosophy* (Schuringa 2025), analytic philosophy is beset by three pathologies: *scientism*, making itself an adjunct to the sciences; or it finds itself in the role of merely articulating and defending *common sense*, or finally, it sees itself as providing philosophical *therapy*, helping us cope with the lacunas present in our own conceptual quandries.¹⁴

These are fundamentally *conservative* orientations, taking the world as a given and finding our role to somehow fit within that pre-existing scheme.

Any view of philosophy that takes our role to be sorting out the truths from the falsehoods in a language that has been given to us in advance is—no matter what methodology we use in that process—a fundamentally conservative exercise.

Philosophy, and the place of attention to logic when doing philosophy, can be much more than that. Philosophy, should not just be the attempt to correctly describing the world in the terms which we have been given. We might dare hope that philosophy, at its best, can help us *understand* our world and

our place in it. To do this, we might need to coin new vocabulary, acquire new ways of seeing, and gain new capacities for *doing*. Perhaps, when we've done that, we might not only *understand* our world and ourselves more—and we might even have some capacity to change ourselves and our world for the better.

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¹³ Mathematics is not just the task of finding all the truths about numbers and points and lines. Mathematics as it is actually pursued involves introducing new mathematical vocabulary and objects of study, while revisiting and refining basic concepts, viewing them in new ways, and expanding their capacities to define and describe mathematical structures. This is so much more than sorting out truths in an antecedently given vocabulary.

¹⁴ As Schuringa explains, the Cambridge trio of Bertrand Russell, G. E. Moore, and Ludwig Wittgenstein, exemplified these three positions at the dawn of analytic philosophy. He also notes that it is remarkable that all three orientations find their place in David Hume's pre-analytic philosophy. It is not surprising that many analytic philosophers find Hume congenial.